



Consultancy  
Investigation  
Training

**Housing  
Executive**  
Northern Ireland Housing Executive



# Cavity Wall Insulation Research Project 2019

Research study prepared for the  
Northern Ireland Housing Executive



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Research study prepared by Consultancy, Investigation and Training (CIT)  
for the Northern Ireland Housing Executive

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# 1. Foreword and Executive summary

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**This research study presents the results of an investigation into the condition of cavity wall insulation and any impact that it is having in terms of thermal efficiency and associated technical defects across a representative sample of social housing properties managed by the Northern Ireland Housing Executive and a selection of private home properties.**

## 1.1. Foreword

It is widely acknowledged that installing cavity wall insulation (CWI) to a home is one of the most effective and cost-efficient ways of saving energy and reducing heating costs.

Given these very considerable social and environmental benefits, it is crucial that when CWI is installed, the procedure is carried out correctly and in full compliance with industry standards and the CWI system Agrément Certificate. Equally importantly, the property's external fabric must be regularly and appropriately maintained throughout its lifetime.

If the CWI installation is not compliant, and if external maintenance duties are not performed adequately, over a period of time the CWI may be compromised, causing problems with dampness and condensation internally and negating the heating, financial and environmental benefits.

Fully conversant with these issues and totally committed to improving energy efficiency across its estate, the Northern Ireland Housing Executive (NIHE) carried out an extensive programme of insulating cavity walls across its housing stock in the 1980s.

By 2012/13, evidence had emerged suggesting the CWI installed was no longer performing due to degradation or poor installation.

In response, NIHE appointed South Eastern Regional College (SERC) to undertake a survey into the quality and effectiveness of all types of cavity wall insulation in NIHE dwellings and the report was delivered in March 2014. After considering the report's findings, in August 2017 NIHE commissioned Consultancy, Investigation and Training (CIT) to undertake a much larger survey in order to inform any future strategy and the programmes required to address CWI issues.

The British Board of Agrément (BBA) is the UK's leading construction certification body offering approval, certification, audit and expert test services to manufacturers of products and systems in the built environment. CIT is a wholly owned subsidiary of the BBA that provides technical consultancy, property investigation and technical

training services, and works predominantly in partnership with local authorities and housing associations, providing independent and impartial expertise focused on both cavity wall and external wall insulation systems. It also provides expert witness services that comply with Part 35 of the Civil Procedure Rules for legal practices, insurers and other professional bodies.

NIHE's brief for CIT was to assess and report back on the condition of CWI and any adverse impact that it is having in terms of thermal efficiency and associated technical defects across a representative sample of its housing stock and a selection of private home properties.

The research was to include the surveying of up to 1,000 of NIHE's social housing stock and 300 private homes. Following approved sampling methods – which are explained in Chapter 4 – the properties eventually surveyed were 825 dwellings of NIHE's social housing stock which had been selected at random by NIHE from a list of 4,000 homes on its database, and 113 private homes.

In order to support the research, NIHE set up the Insulation Performance Panel (IPP) to provide unified direction and guidance and monitor plans and objectives.

From their base in Wales CIT deployed a team of expert technical assessors across Northern Ireland to carry out the cavity wall insulation research project. Its findings are the subject of this report.

The report explains its findings in the following ten chapters that include case studies and a series of appendices.

The chapters cover the scope of the research, the definitions of the Class Recommendations, which categorise the various physical conditions of the homes, the research methodology, how the surveys were carried out, the equipment used and the results of the surveys.

It also covers CIT's conclusions and recommendations.

## 1.2. Executive summary

The main outcomes of this research, for both social and private homes, are reported below.

### Social homes

Of NIHE's social housing stock surveyed, 63% had CWI installations that were non-compliant with industry standards and the requirements of the CWI system Agrément Certificate.

The remaining 37% had CWI installations that, based on the assessment methodology, were discovered to be compliant with industry standards and the requirements of the CWI system Agrément Certificate.

Of NIHE's social housing stock surveyed, 1% were non-compliant with industry standards and the requirements of the CWI system Agrément Certificate. The external façade was identified as actively deteriorating and damp and/or condensation had formed on the internal fabric with urgent remediation required.

Of NIHE's social housing stock surveyed, 84% demonstrated evidence of not being adequately maintained and were showing varying levels of stress in the condition of the external façade.

Defect-free properties constituted 16% of NIHE's social housing stock: based on the assessment methodology their CWI installations were discovered to be compliant with industry standards and the CWI system Agrément Certificate, their building fabric was showing no signs of stress, and no maintenance-related defects were identified on the external façade of the dwellings surveyed.

Of NIHE's social housing stock surveyed, in addition to the 1% of properties surveyed whose external façade was identified as actively deteriorating and requiring remediation, 32% had building fabric that had been compromised but the situation was stable with remediation works required and 51% had minimal building fabric stress with no serious underlying causes with remediation works that can be undertaken as part of a normal housing maintenance plan.

### Private homes

Of the private homes surveyed, 36% had CWI installations that were non-compliant with industry standards and the requirements of the CWI system Agrément Certificate.

The remaining 64% had CWI installations that, based on the assessment methodology, were discovered to be compliant with industry standards and the requirements of the CWI system Agrément Certificate.

Of the properties surveyed, 1% were non-compliant with industry standards and the requirements of the CWI system Agrément Certificate, and the external façade was identified as actively deteriorating and requiring remediation.

Of the properties surveyed, 59% demonstrated evidence of not being adequately maintained and were showing differing levels of stress in the condition of the external façade.

Defect-free properties constituted 41% of the total properties surveyed: based on the assessment methodology their CWI installations were discovered to be compliant with industry standards and the CWI system Agrément Certificate, their building fabric was showing no signs of stress, and no maintenance-related defects were identified on the external façade of the dwellings surveyed.

Of the properties surveyed, in addition to the 1% of properties surveyed whose external façade was identified as actively deteriorating and requiring remediation, 15% had building fabric that had been compromised but the situation was stable with remediation works required and 43% had minimal building fabric stress with no serious underlying causes with remediation works that can be undertaken as part of a normal housing maintenance plan.

### Recommendations

As part of its commissioning brief, NIHE tasked CIT with producing recommendations based on its findings which could support the NIHE with developing strategies for future delivery of effective and efficient CWI retrofit installations. The full recommendations are set out in chapter nine of this report.

CIT believes the following series of recommendations address the issues of remediation across NIHE's social housing stock (with recommendations for private homes detailed separately in chapter 9.2), as well as suggesting ways to ensure the remediation is carried out to the correct quality and in full compliance with CWI installation industry standards.

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## 2. Research description

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- Remediation costs – Seek recompense from the entities responsible for the non-compliant CWI installations.
- Monitoring – Implement a system for monitoring and checking the accurate completion of remediation works and future planned CWI installations.
- Class 1 recommendation remediation – Prioritise to address the existing poor property condition whilst also assessing the condition of neighbouring properties.
- Class 2 & 3 recommendation remediation - Deliver as part of planned cyclical maintenance whilst assessing the condition of neighbouring properties.
- Training – Provide continuing professional development (CPD) training to all NIHE employees responsible for overseeing future remediation and CWI installation works.
- Installation overview – Utilise independent bodies and/ or NIHE skilled workforce to oversee the quality and compliance of future remediation and CWI installation works.
- Competency and compliance – Introduce competencies and standards all suppliers must adhere to if nominated to deliver remediation and CWI installation works for the NIHE.
- Advice for residents – Provide guidance and expert assistance to the recipients of CWI installations to ensure properties are managed and maintained adequately throughout their lifespan.
- Residents voice – Put in place a “residents voice” Scheme that overtly (or in confidence) allows home dwellers to raise concerns about the condition or effects of CWI in their homes.
- Stock surveys – Implement frequent housing stock inspection regimes based on the methodology applied for this research.
- Contracts and guarantees – Develop technical specifications and contracts that meet industry standards and secure suitable insurance backed guarantee Schemes that deliver full compliance and protect the interests of both landlord and house dwellers.

### 2.1. Study background

The Northern Ireland Housing Executive (NIHE) was established in 1971 as Northern Ireland’s strategic housing authority. A landlord to approximately 86,500 dwellings, it offers a range of services to people living in socially rented, privately rented and owner-occupied accommodation as well as supporting and working with a number of other public bodies. Additionally, it offers home improvement grants to homeowners and private tenants and provides support to help improve the energy efficiency of private dwellings.

The NIHE has a Vision Statement which states: “Our vision is one in which housing plays its part in creating a peaceful, inclusive, prosperous and fair society. We are working towards a future in which everyone will have: the right to a real choice of decent, accessible and affordable housing options including integrated housing in a diverse housing market; and a well-designed, well maintained and energy efficient home which is suitable for the individual’s needs.”

The NIHE as Home Energy Conservation Authority for all housing across Northern Ireland has a target to support/ promote energy efficiency measures which deliver significant improvement, namely 34%, measured against the pre-1996 housing stock. As of the 2016 Northern Ireland Housing Condition Survey (NIHCS) an improvement of 29.1% in energy efficiency was recorded across the NI Housing stock. This is consistent with the reduction in energy consumption and can be attributed to improvements in the dwelling’s fabric energy efficiency.

In the mid-1980s, the NIHE carried out an extensive programme of insulating cavity walls across its housing stock.

In 2012/13 representatives of the insulation industry briefed the Minister for Social Development and N.I. Assembly and Members of the Legislative Assembly that there was evidence emerging that CWI installed in dwellings in the 1980s and early 1990s was no longer performing due to degradation or poor installation.

In August 2013, as a consequence of the Minister for Social Development and N.I. Assembly briefing, the NIHE appointed South Eastern Regional College (SERC) to undertake a survey into the condition of cavity wall insulation in NIHE dwellings.

SERC delivered its report in March 2014. The small sample of inspections that were undertaken indicated some issues with CWI in NIHE properties. However, it was decided that a larger



survey would be required in order to inform any potential future strategy and programmes. It had been intended to do so through the Stock Condition Survey being carried out as part of DSD/NIHE Joint Asset Commission in 2014/15, but this was not done on the advice of the NIHE's property consultants.

In August 2017, the NIHE commissioned CIT to assess and report back on the condition of CWI and the impact that it is having in terms of thermal efficiency and associated technical defects across a representative sample of its housing stock and a selection of private home properties.

When announcing the survey, the NIHE said: "This is follow-on research from a study we carried out in 2014 when 206 homes were surveyed. That identified issues with the quality of existing CWI in some residential dwellings.

"In some cases, the problems were due to poor installation practices, and the post-inspection methods that are used today were not available in the 1980s. However, it is also apparent some dwellings were also insulated where it was inappropriate to do so, due to geographical location, construction type or dwelling condition.

"This is the largest survey of its kind ever undertaken in Northern Ireland. We are confident that the results will provide an evidence base to influence policy within this area in the future."

## 2.2. Research scope

In August 2017, following the decision of NIHE to commission the largest-ever survey of cavity wall insulation in Northern Ireland and nominate CIT to deliver the research, NIHE also set up the Insulation Performance Panel (IPP) to provide unified direction and guidance and monitor plans and objectives.

The IPP had four main objectives:

- To ensure inspection methodologies employed were appropriate and produced a balanced outcome.
- To provide guidance to the research team undertaking the evaluation of any emerging research or policy issues – for example, methodology, data sources etc.
- To review the progress of the survey and make recommendations to ensure outcomes are robust.
- To act as a sounding board for conclusions and any recommendations that may emerge from the research.

The NIHE's Research Unit drew samples from its housing stock database for the CWI survey that were proportionate to three key reporting fields – Housing Executive Areas, date of construction and dwelling type. The project allowed for the completion of up to 1,000 surveys of NIHE's social housing stock, which would provide robust data at Northern Ireland level, and would be as representative as possible by Housing Executive Area (the 1,000 surveys were divided proportionately among the 13 Areas). There were four 'date of construction' groups, and four 'dwelling types' denominated.

As there was no field in the database to indicate which dwellings had CWI, it was agreed that this would be assessed by both CIT and NIHE employees through pre-inspection visits.

A random sample of 3,000 NIHE addresses was drawn by NIHE from a dataset previously compiled by the NIHE's property consultants. The purpose of the sample size of 3,000 was to allow for a 3:1 property access ratio.

Because of the high number of dwellings which were unsuitable for the survey due to not having CWI installed or not being technically suitable to have CWI installed, and the difficulties in making contact/gaining access, a second sample was drawn for use when the first sample had been exhausted. As with the first sample, this was a random selection of dwellings based on the required number of completed surveys in each area.

Following an appropriate, IPP-approved methodology, CIT physically inspected 825 dwellings in NIHE's social housing stock - all of which had received CWI installations – which had been selected at random by NIHE from a list of 3,000 homes on its database. As well as using its own technical assessors to conduct all the property surveys, CIT provided classroom and site-based CWI technical training to 30 NIHE employees involved in delivering insulation retrofit installation programmes.

As well as the NIHE social housing stock survey, CIT was commissioned at the same time by the NIHE to carry out a parallel but smaller-scale survey of up to 300 private home properties across Northern Ireland that had previously received CWI installations.

The original sample for the private sector survey came from the 2016 Northern Ireland House Condition Survey, which had a sample size of 3,000 dwellings of all tenures across Northern Ireland. Private sector respondents to the survey were asked if they would be willing to take part in further research into CWI. A total of 333 respondents agreed. CIT

technical assessors encountered similar issues experienced with social housing surveys when trying to gain access to properties to undertake surveys which eventually resulted in 113 private home surveys being completed.

### 2.3. Survey outcome classification

Before embarking on the research, CIT and IPP members developed a survey methodology classification framework they referenced as 'Class Recommendations'.

The Class Recommendations were implemented as a way of classifying the survey findings and providing a health check for each dwelling. Their purpose was to understand the relationship between the condition of both the CWI and the property's internal and external fabric.

In addition to assessing whether the CWI installation was compliant with industry standards and the CWI system Agrément Certificate, CIT technical assessors surveying the properties were required to complete the following assessments as part of the overall property survey: visual inspection of each external accessible elevation; record whether the damp proof course (DPC) was present and compliant with building regulations and CWI industry standards; identify whether the general condition of the outer constructed skin was in good condition i.e., the condition of brickwork, mortar and render; and check for signs of damp, condensation, mould growth and/or any obvious defects that could place strain on the performance of the fabric of the property.

The property survey encompassed every aspect of the property, from roof tiles to the damp-proof course. As well as assessing issues relating to the CWI installation, CIT technical assessors also assessed the condition of roof areas, guttering, soffits, downpipes, window and door seals, along with the properties' ground orientation and exposure level. An example of the survey template is included in Appendix 10.2.

The property survey classification framework took the form of six Class Recommendations, as follows:

Class 1 - building fabric condition is actively deteriorating, remedial works needed.

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has been compromised by excessive water ingress caused by the condition of the external façade of the dwelling combined with defects such as voids in the insulation fill and/or debris in the cavity which has allowed moisture to bridge across the CWI to the inner leaf resulting in the formation of damp and/or condensation on the internal wall.

- Remediation works are required to the CWI installation.
- Remediation works are required to the maintenance-related defects identified on the external façade.

Class 2 – building fabric has been compromised but situation stable, remediation works still required.

Category A:

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has not been compromised but remediation works are still required.
- The building fabric has been compromised by the severity of the maintenance-related defects identified on the external façade and remediation works are still required.
- There is a high probability that non-compliant CWI installations will become compromised if remediation works to the CWI installation and external façade of the dwelling are not undertaken.

Class 2 – building fabric has been compromised but situation stable, remediation works still required.

Category B:

- The CWI installation is compliant with industry standards and the CWI system Agrément Certificate.
- No remediation works are required to the CWI installation.
- The building fabric has been compromised by the severity of the maintenance-related defects identified on the external façade and remediation works are still required.
- It is possible that compliant CWI installations could become compromised if remediation works to the external façade are not undertaken.

Class 3 – evidence of minimal building fabric stress, with no serious underlying causes, remediation can be undertaken as part of a normal maintenance plan.

Category A:

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has not been compromised and remediation works can be undertaken as part of a normal maintenance plan.

- The building fabric is showing signs of minimal stress due to the maintenance- related defects identified on the external façade of the dwelling.
- It is possible that non-compliant CWI installations could become compromised if remediation works to the external façade are not undertaken.

Class 3 – evidence of minimal building fabric stress, with no serious underlying causes, remediation can be undertaken as part of a normal maintenance plan.

Category B:

- The CWI installation is compliant with industry standards and the CWI system Agrément Certificate.
- No remediation works are required to the CWI installation.
- The building fabric is showing signs of minimal stress due to the maintenance- related defects identified on the external façade and remediation works can be undertaken as part of a normal maintenance plan.

No Class

- The CWI installation is compliant with industry standards and the CWI system Agrément Certificate.
- The building fabric is showing no signs of stress.
- No maintenance-related defects have been identified on the external façade of the dwelling.

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## 3. Project overview

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### 3.1. Insulation Performance Panel (IPP)

As explained previously, the NIHE set up the Insulation Performance Panel (IPP) to support the newly commissioned CWI research project.

There were four main objectives for the Panel:

- To ensure inspection methodologies employed were appropriate and produced a balanced outcome.
- To provide guidance to the research team undertaking the evaluation of any emerging research or policy issues – e.g., methodology, data sources.
- To review progress of survey and make recommendations to ensure outcomes are robust.
- To act as a sounding board for conclusions and any recommendations that may emerge from the research.

To help achieve its objectives, the working brief for the IPP was to:

- Ensure that the appropriate information and documentation are available to all members prior to meetings.
- Report to and provide assurance to the Chief Executive's Business Committee (CXBC) and Board.
- Provide unified and joint direction and guidance.
- Ensure effective communication of progress.
- Share knowledge and information and support the Chair.
- Agree resources (people, money, equipment, accommodation).
- Monitor progress against plans and agreed objectives.

It was decided that, if required, the IPP could widen its scope to include other issues as information became available.

The panel was chaired by Dr Trevor Hyde of The Belfast School of Architecture and the Built Environment, Ulster University and met on a quarterly basis; the NIHE was responsible for producing minutes; and administrative support was provided by NIHE Asset Management.

Quorum for the IPP was set as the Chair, plus five other members, one of whom was from NIHE Asset Management.

Any potential conflicts of interest were declared at the start of each meeting and recorded in the minutes together with details of any actions taken where appropriate.

The panel was composed of the following members:

Dr Trevor Hyde – Belfast School of Architecture and the Built Environment, Ulster University

Dr Sree Nanukuttan – School of Natural and Built Environment, Queen's University Belfast

Dr Tom Woolley – Architect

Rob McCormack – Director, CIT

Geoff Chambers – Head of Investigation and Technical Excellence, CIT

Paul Isherwood – Director of Asset Management, NIHE

Andy Kennedy – Assistant Director Asset Strategy, NIHE

Adrian Blythe – Quality Improvement Manager, NIHE

Robert Clements – Sustainable Development Manager, NIHE

Donna McLarnon – Corporate Research Officer, NIHE

Philip Ralston – Project Manager, NIHE

Charlie Houston – Project Manager, NIHE

Maria Quinn – Administrator, Asset Management, NIHE

Karly Green – Head of Research and Equality NIHE

Renee Crawford – Tenant Representative (Central Housing Forum)

Martin McDermott – Head of Fuel Poverty Unit, DfC

Judith Woodburn – Housing Division, DfC

### 3.2. Project reviews

The research project was reviewed on a monthly basis at meetings attended by representatives from CIT and the NIHE. The monthly reviews scrutinised the progress of the surveys, as well as the results to date of the Class Recommendations.

Among the matters under regular discussion were: property access difficulties and whether the sample size needed to be extended; the 'run rates' of the number of surveys completed and whether they were in line with targets; timelines; safety issues encountered by CIT technical assessors; training arrangements for NIHE members; ongoing communications about the research project, for internal and external audiences; and any matters that needed escalation to the IPP.

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## 4. Methodology and sampling

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### 4.1. Research questions/objectives

As stated above, the primary aim of the CWI research was to establish:

- The condition of CWI in the NIHE housing stock and the private sector; and
- The impact that this is having on the stock in terms of thermal efficiency and associated technical defects.

In order to deliver the research objectives, CIT compiled an extensive list of questions for the technical survey forms that CIT technical assessors would use.

The questions covered everything that was necessary to establish whether the CWI installation was compliant with industry standards and the CWI system Agrément Certificate and also included whether the DPC was present and compliant with building regulation and CWI industry standards; the overall condition of the external façade; the condition of brickwork, mortar and render; and whether there were any signs of damp, condensation, mould growth and/or any obvious defects that could place strain on the performance of the fabric of the property.

The questions also covered issues such as the condition of the roof, guttering, soffits, downpipes, window and door seals, property ground orientation and exposure level.

An example of a survey template is included in Appendix 10.2.

### 4.2. Property survey rationale

This chapter explains the rationale used to capture information from surveys conducted by CIT technical assessors in adherence to the research aims and methodology. The accuracy and compliance of all surveys completed was assessed and managed through a Quality Assurance procedure overseen by CIT's Head of Investigation and Technical Excellence.

Sections 1 to 4 of the survey template evaluate the condition of the external roof and external façade with regards to its suitability for installing a retrofit CWI system as approved by the relevant BBA Agrément Certificate.

Photographic evidence was gathered to further evidence the survey information captured. Detailed below is a description and examples of the information captured for each property survey.

#### Roof

The methodology for roof condition surveys included the assessment of the condition of ridge and roof tiles, chimney, lead work, the roof valley, verge boards and verge tile pointing; and subject to their condition, assess if they were having any effect on the inner walls of the property. In cases where defects were identified, there were examples where excess water did ingress into the cavity, bridging across the CWI installation compromising the inner walls.



Figure 4.1 Roof

#### Guttering

The condition of the guttering was assessed to ensure that rain water was flowing properly through the system to the drain, and not damaged or blocked with foliage or debris. Guttering blocked or damaged could lead to excessive water flowing onto the external façade soaking the walls, or depending on the type of blockage/damage and the archetype of the property, flowing directly into the cavity, bridging the CWI installation with a high risk of compromising the inner walls.



Figure 4.2 Guttering

### Soffit and Fascia

Soffit and fascia were assessed for evidence of damage or decay. In cases where it was identified they were in a poor state of repair this could have a direct impact on the volume of water exposure to the external façade, which as a consequence could bridge the CWI installation and compromise the inner walls.



Figure 4.3 Soffit

### Downpipe

The condition of the downpipe was assessed to ensure that rain water was flowing properly through the system to the drain, and not damaged or blocked with foliage or debris. A blocked or damaged downpipe could lead to excessive water flowing onto the external façade soaking the walls from the inlet at the top to the outlet at the bottom, depending on the location of the leak.



Figure 4.4 Downpipe

### CWI system

The CWI installation drilling pattern was assessed for both its accuracy and conformance to the CWI system supplier's manual and issued Agrément Certificate. A non-compliant drilling pattern may lead to the CWI material density not being achieved which as a consequence can create the formation of hot and cold areas within the cavity.



Figure 4.5 CWI System installed

### Combustion ventilation

When installing retrofit CWI, it is critical for the safety of occupants that the ventilation requirements for all fuel burning appliances should be checked to ensure there is an adequate air supply and that it has not been compromised by the CWI installation.



Figure 4.6 Combustion vent



**Brickwork and mortar**

The condition of brickwork and mortar was visually assessed to understand if it was protecting the cavity from adverse weather and wind driven rain. In examples where it was identified as in poor condition it has the potential to allow excess water into the cavity and bridging the CWI installation with a high risk of compromising the inner walls.



Figure 4.7 Brick and mortar condition

**Perimeter seal (window)**

The condition of perimeter seals applied to windows was assessed. In examples where it was identified in poor condition there is the potential for this to allow wind driven rain to compromise the cavity.



Figure 4.9 Perimeter seal condition (window)

**Render**

Render condition and finish were assessed to ensure the external façade was adequately protecting the cavity from adverse weather and wind driven rain. In examples where render is cracked or eroded this allows the opportunity for excess water to ingress into the cavity bridging the CWI installation with a high risk of compromising the inner walls.



Figure 4.8 Render condition

**Perimeter seal (door)**

The condition of perimeter seals applied to doors was assessed. In examples where it was identified in poor condition there is the potential for this to allow wind driven rain to compromise the cavity.



Figure 4.10 Perimeter seal condition (door)

### CWI drilling pattern

The accuracy of the CWI installation drilling pattern was assessed to measure if the correct distribution of the CWI throughout the cavity had been achieved to attain the right density of CWI fill in the cavity. During the survey the drilling pattern is checked to ensure the holes are drilled in the correct position, and that the correct number of injection holes required have been drilled.



Figure 4.11 Drilling pattern

### Adequacy of CWI fill

Establishing if the adequacy of CWI fill has been achieved can determine if the installed system is working to its full potential. It can also assist with identifying the correlation between damp and or condensation to the inner walls and voids in the CWI.



Figure 4.13 Adequacy of CWI fill

### Cavity width

Determining the width of the cavity is a fundamental part of any CWI assessment prior to installation. The installer needs to know the cavity width to ensure that it meets the requirements of the CWI system Agrément Certificate and the correct density of CWI is installed. This is achieved by calculating the amount of CWI material used and compared to the volume of the cavity. Some CWI systems can only be installed into cavities 50mm or greater in width and others are suitable for cavities measuring 40mm or greater.



Figure 4.12 Cavity width

### Ground orientation

This can affect the remediation classification where the height of the DPC is compliant with building regulations and CWI industry standards. If the DPC level is below 150mm to the ground and the orientation slopes towards the property, there is a higher risk of excess water accessing the cavity.

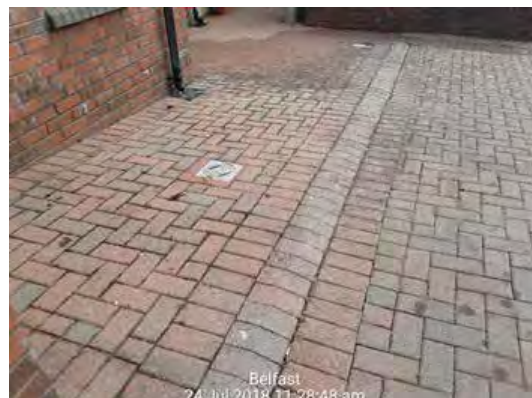


Figure 4.14 Ground orientation



**Exposure level**

A property's exposure to wind driven rain is assessed to determine if the property location, archetype and external façade condition are suitable for a CWI system to be installed.



Figure 4.15 Exposure level

**Condensation**

For each survey, the property is checked internally for any signs of condensation. If condensation is discovered a further investigation will follow to determine if it is attributable to the CWI installation.



Figure 4.17 Condensation

**Damp**

The property is also checked internally for any signs of damp. If damp is found in the property a further investigation will follow to determine if it is attributable to the CWI installation.



Figure 4.18 Damp

**Eaves**

Adequate roof space ventilation is required to ensure condensation doesn't accumulate within the loft space. The eaves must remain clear of any obstructions such as loft insulation, CWI or items stored in the loft space.



Figure 4.19 Eaves

### Gable wall suitability

The gable wall inside the loft space needs to be in an adequate condition to ensure that the CWI doesn't enter into the loft space as it would compromise the roof ventilation or contaminate any items located in the loft space.



Figure 4.20 Gable wall suitability

### Damp proof course (DPC)

The damp proof course (DPC) is assessed to ensure that it is 150mm above ground level and compliant for a CWI installation to be applied to the property. This is the recommended level as set out in Building Regulations and CWI industry standards.



Figure 4.21 Damp proof course (DPC)

## 4.3. Survey design

### 4.3.1 Sampling background

The NIHE Research Unit selected the samples for the social housing and private sector CWI surveys. As with any survey, the sample size was determined by the allocated budget.

As the social housing and private homes samples differed significantly in volume it is not possible to make direct comparisons between the results of the two surveys.

### 4.3.2 Social housing survey - sampling method

NIHE Asset Management provided the sample frame and asked the NIHE Research Unit to draw a sample that was proportionate to three key reporting fields – NIHE Areas, year of construction (YOC) and dwelling type. The budget allowed for the completion of up to 1,000 CWI surveys. This would provide robust data at Northern Ireland level, and would be as representative as possible of each of the 13 NIHE Areas. The social housing survey sample was divided proportionately in accordance with the locality of NIHE social housing stock among the 13 NIHE Areas. There were four 'date of construction' groups, and four 'dwelling types' selected in order to provide robust data for these reporting fields.

There was no field in the database to indicate which dwellings had received CWI installations. It was therefore agreed that this issue would be addressed by pre-inspection visits with all properties identified with CWI installations entered into the survey programme.

#### First sample

CIT requested a sample which would allow for a 3:1 property access ratio (based on experience of carrying out similar surveys). The Research Unit used a statistical package (SPSS) to select a random sample of 3,000 NIHE addresses from the sample frame (to achieve up to 1,000 completed inspections).

The three key variables for sampling were area, date of construction and dwelling type. The sample was representative by area and was checked to ensure a reasonable representation by dwelling type and year of construction.

Tables 4.1, 4.2 and 4.3 show the sampling process and outline the sample and number of target completions for each of the three key variables.

Area	Number	%	No. proposed sample	No. proposed complete
CAUSEWAY AREA	5,983	7.9%	237	79
EAST AREA	5,033	6.7%	201	67
LISBURN / CASTLEREAGH AREA	4,662	6.2%	186	62
MID ULSTER AREA	3,774	5.0%	150	50
NORTH BELFAST	4,860	6.4%	192	64
NORTH DOWN AND ARDS AREA	5,693	7.5%	225	75
SOUTH AND EAST BELFAST	8,896	11.8%	354	118
SOUTH ANTRIM AREA	5,471	7.2%	216	72
SOUTH AREA	6,932	9.2%	276	92
SOUTH DOWN AREA	5,347	7.1%	213	71
SOUTH WEST AREA	3,333	4.4%	132	44
WEST AREA	7,164	9.5%	285	95
WEST BELFAST	8,401	11.1%	333	111
<b>Total</b>	<b>75,549</b>		<b>3,000</b>	<b>1,000</b>

Table 4.2: Proposed sample and target completions by dwelling type

Dwelling type	Number	%	No. proposed sample	No. proposed complete
Bungalow	16,786	22.2%	666	222
Flat/maisonette	15,561	20.6%	618	206
House	43,202	57.2%	1,716	572
<b>Total</b>	<b>75,549</b>		<b>3,000</b>	<b>1,000</b>

Table 4.3: Proposed sample and target completions by year of construction

Year of construction	Number	%	No. proposed sample	No. proposed complete
Pre 1945	3,620	4.8%	144	48
1945 – 1960	12,345	16.3%	489	163
1961 – 1980	39,751	52.6%	1,578	526
Post 1980	19,824	26.2%	786	262
Unknown YOC	9	0.0%	-	-
<b>Total</b>	<b>75,549</b>		<b>3,000</b>	<b>1,000</b>

Table 4.1: Proposed sample and target completions by area

The Research Unit provided CIT with guidance relating to monitoring the response rate for each key variable.

### Second sample

During the pre-inspection process, CIT learnt that a high number of dwellings did not have CWI drill patterns on their external façade and therefore assumed CWI had not been installed. In addition, CIT technical assessors experienced difficulties making contact with some householders and gaining access to some dwellings and on occasions where householders were uncooperative CIT technical assessors were accompanied by NIHE staff to help facilitate completion

of the survey visit (every contact attempt was recorded). As a result, CIT requested a second sample which could be used when the first sample had been exhausted.

For this second sample 1,000 dwellings were randomly selected, based on the required number of completed surveys in each area. The sampling process took into account the completed surveys up to that point, as well as those in the process of being completed, those with an appointment booked, and those in the process of being booked. Table 4.4 shows the sampling process for the second sample.

Area	1 Complete	7 Accompanied visit required (Asset Management)	11 Appointment in process of being arranged	Appointment booked	Total complete (potential)	Proposed complete (at beginning of survey)	Number required May 2018	% 2nd sample	Number 2nd sample
CAUSEWAY AREA	10	-	60	31	101	79	-	0.0%	0
EAST AREA	32	-	21	7	60	67	7	2.8%	28
LISBURN / CASTLEREAGH AREA	43	-	2	0	45	62	17	6.7%	67
MID ULSTER AREA	27	-	24	11	62	50	-	0.0%	0
NORTH BELFAST	10	28	2	0	40	64	24	9.5%	95
NORTH DOWN AND ARDS AREA	38	-	2	0	40	75	35	13.9%	139
SOUTH AND EAST BELFAST	78	4	1	0	83	118	35	13.9%	139
SOUTH ANTRIM AREA	53	-	5	1	59	72	13	5.2%	52
SOUTH AREA	63	-	19	1	83	92	9	3.6%	36
SOUTH DOWN AREA	36	-	16	5	57	71	14	5.6%	56
SOUTH WEST AREA	16	-	21	17	54	44	-	0.0%	0
WEST AREA	20	-	20	19	59	95	36	14.3%	142
WEST BELFAST	38	10	1	0	49	111	62	24.6%	246
<b>Total</b>	<b>464</b>	<b>42</b>	<b>194</b>	<b>92</b>	<b>792</b>	<b>1,000</b>	<b>252</b>	<b>100.0%</b>	<b>1,000</b>

Table 4.4: Sampling process for second sample

The NIHE Research Unit recommended that efforts should primarily be focused in areas with a low response rate, in an attempt to achieve numbers as close as possible to the proposed number of survey completions. In accordance with good survey practice, it also advised that any appointments which had been arranged/were in the process of being arranged should be kept (even in areas where it could lead to a higher number of survey completions than originally proposed).

House type and year of construction were again considered in selecting the sample. However, this could only be considered as a guideline as no information was available for these fields in relation to the dwellings which had appointments arranged but surveys still to be undertaken.

### 4.3.3 Private homes survey - sampling method

As with the social housing sample, two samples were needed for the private homes survey.

The first sample came from the 2016 NIHE Condition Survey, which had a sample size of 3,000 dwellings of all house types

across Northern Ireland. Private sector respondents to the survey were asked if they would be willing to take part in further research into CWI. A total of 333 respondents agreed.

It was proposed that CIT would aim to achieve as many completed surveys as possible (out of the 333) in order to produce an initial analysis of CWI in the private sector in Northern Ireland. Due to the small sample size, results would be reported at Northern Ireland level only, rather than on an area by area basis.

The NIHE Research Unit provided CIT with the sample and wrote to the 333 householders to advise them that CIT would make contact with them to arrange an appointment.

As with the social housing survey, CIT technical assessors sometimes experienced difficulties making contact and gaining access and requested a second sample from the NIHE Research Unit. As it was not possible to select any additional addresses from the House Condition Survey (only respondents who had opted in at the time of the House Condition Survey could be contacted), the NIHE Research

Unit used the Pointer database for sampling. Pointer is the address database used as the sampling frame for the selection of addresses on Government social surveys in Northern Ireland.

The Pointer database had a 'tenure' field attached which could identify private sector dwellings (with approximately 90% accuracy). It did not have names or telephone numbers attached. These issues were identified as potential barriers to making contact with private householders. In order to maximise the chances of making contact, it was agreed that a sample of 1,000 addresses should be selected for the second sample.

#### 4.3.4 Pre-inspection visits

In order to identify if dwellings had CWI installed, CIT technical assessors and nominated NIHE employees conducted pre-inspection visits which entailed a visual external assessment of the dwelling to ascertain whether a CWI drill pattern was in situ and therefore if the property could be considered likely to have received a CWI installation.

During the pre-inspection process of 3,000 of NIHE's social housing stock, CIT learnt that a high number of dwellings did not have CWI installed. In addition, CIT technical assessors experienced difficulties making contact with some householders and gaining access to some dwellings (every contact attempt was recorded). As a result, CIT requested a second sample which could be used when the first sample had been exhausted.

In response, a random selection of 1,000 NIHE's social housing stock was selected for the second sample, based on the required number of completed surveys in each area. Pre-inspection visits were also completed on this second sample.

For the private homes survey, there was no requirement for properties to be pre-inspected as it had already been identified that properties had CWI installed.

#### 4.3.5 Survey equipment

To conduct property surveys CIT technical assessors used a range of equipment that included the following:

- Tape measure: used to measure the DPC level, drilling pattern, cavity width and to also determine any correlation between the location of damp and/or condensation found on the inner walls with any anomalies discovered from the cavity inspection.
  - Torch: used to check the condition of the loft space, evidence of any debris in the air and the condition of combustion ventilation and flues, if applicable.
  - Tablet: used to record the inspection findings in written and photo form and to administer the final survey report.
  - Cement: used to fill the cavity inspection holes created by the drilling process.
  - Digital camera: used to gather photographic evidence of the findings captured in the survey report.
  - Protimeter: used to measure the moisture content of an inside wall showing signs of damp or condensation
- 
- Drill: used to drill the cavity inspection scope holes on each of the accessible elevations.
  - Digital borescope: used to examine the condition of the inside of the cavity and CWI installation, identifying voids, debris and any other anomalies within the cavity.
  - Ladders: used to gain access to the loft space where the loft insulation is assessed for compliance to industry standards, to check if the eaves are compromised by any insulation or other materials and to check the condition of the gable wall where applicable.

## 5. References for insulation suitability and installation

### 5.1. Standards

#### **Annex CWI 1 – Common Minimum Technical Competency Requirements – Determine the Suitability of a Building for Cavity Wall Insulation Work**

**Issuer - Construction Industry Training Board (CITB)**

**Date of issue – 27/11/2012**

The Annex sets out the routes to demonstrating the required competence for cavity wall insulation work, including the necessary qualifications/certification and experience/evidence, and whether inspection/ assessment will take place, either on or off site.

It lists the necessary Quality and Credit Framework (QCF) units which must be achieved, either as a standalone unit or within a QCF qualification: they are L/503/3070 and A/503/1170.

It also lists the alternative certification that has been mapped to the competence requirements within the Annex and agreed by Construction Skills as aligning with the competence requirements within this Annex and aligning with the related requirements for acceptance as alternative certification. It requires the installation worker to be registered with a Building Regulations Competent Person Scheme or certificated by another UKAS Accredited Certification Body for the type of work covered in the Annex.

In addition, the installation worker must have evidence of work carried out to be able to demonstrate their practical competence for the scope for which they have applied in accordance with the competence requirements stated in this Annex. A minimum of three years' verifiable relevant experience covering the competence requirements stated in this Annex and successful completion of the Experienced Worker Assessment is required as well.

The Annex lists 12 competency requirements, which include the following requirements:

The installation worker must:

- Be able to determine the suitability of a building for cavity wall insulation work and know the requirements of the building regulations and relevant standards in the context of cavity wall insulation work.

- Know the methods of construction for buildings, be able to identify the types of building construction that are suitable for cavity wall insulation, know how to and be able to identify rising damp, know how to assess and be able to assess the suitability of the building structure for the application of cavity wall insulation, know factors that can affect the safe operation of combustion appliances, and know how to assess and be able to assess if the functionality of existing ventilation ducts/systems will be compromised by the proposed cavity wall insulation work.

Full details can be found in Appendix 10.4.1.

#### **Annex CWI 2 – Common Minimum Technical Competency Requirements for Installation of Cavity Wall Insulation**

**Issuer - Construction Industry Training Board (CITB)**

**Date of issue 27/11/2012**

The Annex sets out the routes to demonstrating the required competence for cavity wall insulation work, outlining the necessary qualifications/certification and experience/evidence, and whether inspection/ assessment will take place, either on or off site.

It lists the necessary QCF units which must be achieved, either as a standalone unit or within a QCF qualification: they are A/600/8143 L/503/3070 F/503/1171 A/503/1170.

It also lists the alternative certification that has been mapped to the competence requirements within the Annex and agreed by Construction Skills as aligning with the competence requirements within this Annex and aligning with the related requirements for acceptance as alternative certification. And it requires the installation worker to be registered with a Building Regulations Competent Person Scheme or certificated by another UKAS Accredited Certification Body for the type of work covered in the Annex.

In addition, the installation worker must have evidence of work carried out to be able to demonstrate their practical competence for the scope for which they have applied in accordance with the competence requirements stated in this Annex. A minimum of three years' verifiable relevant experience covering the competence requirements stated in this Annex and successful completion of the Experienced Worker Assessment is required as well.

The Annex lists 10 competency requirements, which include the following:



When installing cavity wall insulation, the installer must know:

- The types of information and be able to interpret information relating to cavity wall insulation work.
- The procedures to follow when problems with information exist.
- The requirements of and be able to comply with legislation and official guidance in relation to safe working practices when undertaking cavity wall insulation work.
- How to and be able to minimise the risk of damage to the work and the surrounding area.
- The requirements of and be able to carry out post-installation checks.

Full details can be found in Appendix 10.4.2.

## 5.2. BBA Schemes

### **Assessment and surveillance scheme for approved installers of cavity wall insulation (15-01-01)**

**First issued 21/05/2012; 7th revision 26/10/2017**

The Scheme encompasses the installation by approved installers of cavity wall insulation which is the subject of a BBA Agrément Certificate, in buildings not exceeding 12 metres in height.

The BBA approves installers as competent to install defined products or systems that have a valid Agrément Certificate where the installation has a significant part in their performance.

Installers products and systems must be assessed by the BBA as meeting the requirements of the Scheme before approval and surveillance are carried out by the BBA. These tasks are undertaken by BBA's Inspectors, trained and experienced in the technology, which ensure that the installers are competent to install the related product or system in accordance with the relevant Agrément Certificate.

Where buildings are above 12 metres high, installation may take place if the relevant Certificate holder has assessed the building as suitable and this is provided for in the relevant Agrément Certificate. In such cases, the Certificate holder must carry out an assessment and maintain a documented record that they have given approval for the installation to take place.

The BBA Scheme for the assessment and surveillance of installers of cavity wall insulation is based on a three-party arrangement between the BBA, the Agrément Certificate holder and the Approved Installer, approved by the BBA as competent to install products under the related Certificate. The responsibilities of each are set out in the Scheme.

The holder of the Certificate relating to the cavity wall insulation that the installer wishes to install must be satisfied that the proposed installer is capable of installing it competently and in accordance with the related Agrément Certificate and the Certificate holder must provide written confirmation to the BBA in that regard.

Full details can be found in Appendix 10.4.3.

### **BBA Approved Assessor Scheme for Assessing the Suitability of Buildings for the Installation of Cavity Wall Insulation**

**Issue 4, March 2015**

The BBA Approved Assessor Scheme provides for both a BBA Approved Installer to register their assessors and third-party applicants who have demonstrated their ability to assess the suitability of buildings for the installation of CWI to become a BBA Approved Assessor. The responsibilities of the BBA, the applicant and the assessor are set out in this document.

For an assessor to retain that status, they must successfully demonstrate ongoing compliance with the Scheme.

Surveillance of assessors is carried out by BBA inspectors, trained and experienced in the assessment of properties as described in this Scheme document and with knowledge of CWI products and/or systems approved by the BBA.

The Scheme requires the assessor to document what is required to comply with the statutory requirements applicable to the building to be insulated, for example relevant Building Regulations.

The assessor is responsible for producing written assessment reports that shall document whether a building is suitable for the CWI to be installed and must identify and document-related potential problems that may adversely affect the proper functioning of the building after completion of the installation, together with suitable corrective actions to be taken before installation.

The assessor's report shall include, as a minimum:

- The name of the assessor.
- The name and address of the homeowner and the location of the building.
- The installer's details (if known).
- Identification of essential ventilation openings that require sleeving or safeguarding before installation.
- The position of all flues whether they are in service and measures that must be taken to safeguard their proper functioning.
- Where the installation will take place through the internal leaf as opposed to the external leaf.
- Reasons for omitting any areas from the installation of insulation.
- The specification of any remedial action required before the installation of the insulation; responsibility for rectification shall be clearly stated.
- A risk assessment, notifying the customer of any issues arising there from.
- Any special requirements/factors pertinent to the building in relation to the proposed installation, such as restricted access, etc.
- A written statement as to whether the building is assessed as suitable for the installation of CWI; if not reasons shall be stated.
- A signed declaration that the building has been assessed according to the requirements of the Scheme.
- A signature from the homeowner that they have read and understood the contents of the report.

Before installation of the system, the homeowner shall be advised in writing of the information contained in the report.

The assessor must demonstrate on an ongoing basis that he/she is fully conversant with the contents and requirements of the Scheme document and all other factors that could affect the success of an installation, including but not restricted to:

- Suitability and preparation of the site.
- Installation techniques.
- Repair and maintenance.
- Finishing work.
- Health & safety, including working at height, PPE, risk assessments.
- Adherence to all statutory requirements applicable to the building to be insulated, for example the Building Regulations.

- Timely corrective action in relation to any issues raised by the BBA.
- Maintaining formal records of all assessments, including dates undertaken.

BBA Approved Installer-registered assessors will be monitored as part of the BBA Approved Installer's Scheme surveillance requirements.

Full details can be found in Appendix 10.4.4.

## **BBA Cavity Assessment Surveillance Scheme (CASS®)**

**Created 04/05/2016; 6th revision 26/10/2017**

The BBA's cavity assessment surveillance Scheme (CASS®) was created to improve the general state of retrofitting of cavity wall insulation and increase consumer confidence that insulation is installed only into properties which are suitable.

CASS® checks a proportion of assessments at the beginning of the process in order to check the suitability of properties proposed by property assessors for cavity wall insulation and it will provide independent third-party validation of suitability. Property assessors register for the Scheme via an online platform.

The Scheme provides a validation process that checks if the information submitted by an assessor on a property assessment lodged on the BBA CASS® Platform is compliant with the requirements set out in this Scheme. Where the assessment is not suitable because of non-compliance with the Scheme requirements, it is returned to the assessor for review with possible sanctions imposed by the BBA.

Site surveillance audits are carried out by BBA inspectors, trained and experienced in the assessment of properties as described in the Scheme document and with extensive knowledge of CWI products and/or systems approved by the BBA. All assessors will have site-based audits completed on a quarterly basis.

Following rectification and re-submission (where applicable) of the assessment by the assessor the site may have a subsequent visit completed by the BBA inspection department to ensure compliance with Scheme requirements thus allowing for the non-compliance to be closed. Where the re-visit by the BBA inspector finds continued non-compliance with the issues raised sanctions will be implemented.

Full details can be found in Appendix 10.4.5.



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## 6. Case studies

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### 6.1. Case study 1: Class 1 recommendation

#### 6.1.1 Case study objective

This case study describes the evidence gathered from a property survey classified as a Class 1 recommendation where the following findings were identified:

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has been compromised by excessive water ingress caused by the condition of the external façade of the dwelling combined with defects such as voids in the insulation fill and/or debris in the cavity which has allowed moisture to bridge across the CWI to the inner leaf resulting in the formation of damp, condensation on the internal wall.
- Remediation works are required to the CWI installation.
- Remediation works are required to the maintenance-related defects identified on the external façade.

#### 6.1.2 Property characteristics

The property is a ground floor flat, traditionally constructed with a render coating, built between 1945-1960 located on the edge of a predominantly social housing estate approximately a mile from the shore line. The geographical location and topography (flat) with a wooded area to the side, combined with the surrounding buildings offering some protection, led us to the conclusion that the property is located in a moderate exposure zone to the front and rear elevations and severe exposure to the side elevation.

#### 6.1.3 Property conditions

##### Downpipe

The drainage to the front elevation on the floor above this property is blocked causing the water to overflow resulting in some staining to the walls and roof section. If not remediated the risk of damaging the render will be greater with the potential for excess water ingress to the cavity and potential compromise of both the CWI installation and inner wall areas.



Figure 6.1 Blocked drainage



Figure 6.2 Water damaged roof

### Perimeter seals

The perimeter seals on all ground floor windows on the front elevation and all ground floor windows and door on the rear elevation are defective and require remediation. The perimeter seals have either eroded or are missing and if left un-remediated will allow water to access into the cavity and potentially compromise both the CWI installation and inner wall area.



Figure 6.3 Compromised perimeter seal (window)



Figure 6.4 Compromised perimeter seal (door)

### Render

The render covering on the rear of the property is damaged with a crack running down the wall. If not remediated, the risk of further damage to the render will be greater with the potential for excess water ingress to the cavity potentially compromising both the CWI installation and inner wall areas.



Figure 6.5 Crack running down the rear elevation

### Condensation

During the internal inspection, condensation was identified on all elevations. This normally indicates poor ventilation or possible presence of voids in the CWI in this area with cold bridging resulting that could promote condensation on the inner wall. The CWI should be removed and the cavity cleaned; then, following a period of time for the walls to dry, the property should be assessed for its suitability to have a CWI system installed.



Figure 6.6 Condensation in the kitchen



Figure 6.7 Condensation in the bedroom

## Damp

Damp was found on all internal elevations in correlation with the voids and debris identified in the cavity during the survey. The voids and debris will allow water to access into the cavity and potentially compromise both the CWI installation and inner walls area as has happened in this case. The CWI should be removed and the cavity cleaned; then, following a period of time for the walls to dry, the property should be assessed for its suitability to have a CWI system installed.

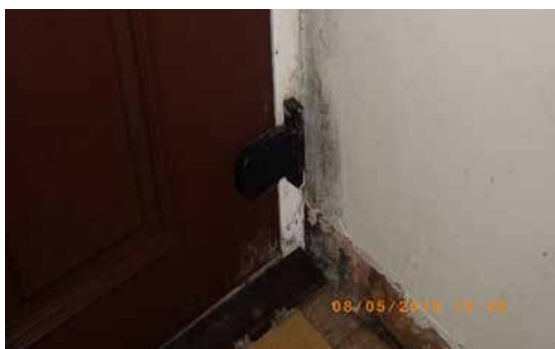


Figure 6.8 Damp by the front door

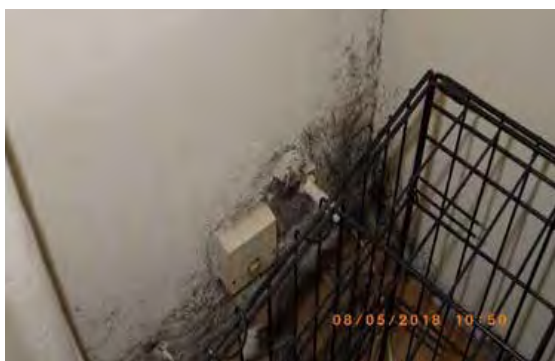


Figure 6.9 Damp on the internal wall



Figure 6.10 Damp on the internal wall



Figure 6.11 Damp on the bedroom wall

## 6.1.4 CWI installation assessment

### Property suitability

In its condition at the time of our survey, we do not consider the property suitable to have a CWI installation carried out based on detailed findings from our survey as follows:

- The downpipe is compromised by debris.
- Perimeter seals around some of the window and door openings have become defective.
- Crack identified in the render on the rear elevation.
- Debris has been identified in the cavity on the side elevation.
- Both damp and condensation have compromised the inner wall areas.

### CWI installation and cavity width

The property has been installed with an expanded polystyrene material CWI system. The cavity width was recorded at 65 to 70mm on the front elevation, 65 to 70mm on the side elevation and 65mm on the rear elevation. This denotes the cavity width as suitable for all BBA approved CWI systems.

### CWI condition

The cavity was assessed by way of intrusive borescope inspection at eight different intervals (three on the front and rear and two on the side elevation) on all accessible elevations. At all of the points of borescope inspection on the front elevation, void areas in the CWI installation were discovered along with debris identified in one of the borescope inspection points which was acting as a bridge between the outer and inner walls. Inadequate CWI fill was found at one of the borescope inspection points on the side elevation. At all of the points inspected on the rear elevation, debris was discovered in the cavity which was acting as a bridge between the outer and inner walls.

For these reasons the CWI has been compromised. The debris must be removed because it could be a conduit for moisture to travel across the cavity to the inner wall, representing a risk of compromising the inner wall and resulting in the formation of damp. Voids in the insulation could increase the risk of condensation forming on the inner wall due to the cold bridging effect.



Figure 6.12 Voids and debris in the cavity



Figure 6.13 Voids in the CWI

## 6.1.5 Remedial work recommendations

The Class 1 recommendation denotes that the building fabric condition is actively deteriorating, and remedial works are needed. The non-compliant CWI installation has been compromised because of the poor condition of the external façade which has permitted excessive water ingress to the interior of the property. For this property we would propose the following course of remediation:

- Removing the CWI from the cavity, ensuring that all of the CWI material and any debris within the cavity is removed leaving a clean cavity.
- Repairing the render on all the relevant areas on the external façade.
- Removing and replacing all defective window and door perimeter seals to ensure that there is an appropriate seal between the window/door framework and cavity.
- Cleaning the guttering/downpipe of any vegetation and debris.
- When the walls have dried, remediating the damp and or condensation damaged areas on the inner walls.

Upon completion of the recommended remediation works, the property would then need to be reassessed to ascertain whether it is now suitable to have a new CWI system installed.

## 6.2. Case study 2: Class 2 recommendation

### 6.2.1 Case study objective

This case study describes the evidence gathered from a property survey classified as a Class 2 - Category A recommendation where the following findings were identified:

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has not been compromised but remediation works are still required.
- The building fabric has been compromised by the severity of the maintenance-related defects identified on the external façade and remediation works are still required.
- There is a high probability that non-compliant CWI installations will become compromised if remediation works to the CWI installation and external façade of the dwelling are not undertaken.



## 6.2.2 Property characteristics

The property is an end of terrace house, traditionally constructed with a brick outer leaf, built post 1980 and located in a predominantly social housing estate. The geographical location and topography (flat) combined with the surrounding buildings offer this dwelling some protection to exposure and it is therefore considered to be located in a moderate exposure zone.

## 6.2.3 Property conditions

### Roof area

The pitched roof of the property is in a generally good condition with no defects or maintenance-related issues identified during the survey. There is some moss growth on the front elevation roof tiles, but this is not currently having a detrimental effect on performance.



Figure 6.14 Rear elevation roof area

### Guttering

The guttering is in a relatively good condition but has vegetation growth in both the front and rear sections which if not removed, would increase the risk of water overflowing onto the external wall area accessing the cavity with the potential to compromise the inner walls.



Figure 6.15 Vegetation growth in guttering (front) elevation.



Figure 6.16 Vegetation growth in guttering (rear) elevation.

### Soffit

The soffit on the side elevation requires maintenance to a section that has split. If left un-remediated there is the potential for water to ingress into the cavity with the potential to compromise the inner walls.



Figure 6.17 Split soffit area

### Brickwork and mortar

The brickwork mortar joints on the side and rear elevations of the property show evidence of erosion. Weathering and lack of maintenance are contributors to this condition which if left un-remediated will allow excess water to access into the cavity, potentially compromising both the CWI installation and inner wall areas.



Figure 6.18 Mortar erosion (side) elevation

### Perimeter seals

Perimeter seals on all ground floor windows on the front elevation and all ground floor windows and door on the rear elevation are defective and require remediation. The perimeter seals have either eroded or are missing and if left un-remediated will allow water to access into the cavity, potentially compromising both the CWI installation and inner wall areas.



Figure 6.20 Perimeter seals (window)



Figure 6.19 Mortar erosion (rear) elevation



Figure 6.21 Perimeter seals (door)

### DPC level

The DPC level on the front, side and rear elevations is below the recommended 150mm level. As a consequence, accelerated soaking of the outer leaf brickwork could occur and cause excess moisture to access into the cavity, potentially compromising both the CWI installation and inner wall areas.



Figure 6.22 DPC level below 60mm



Figure 6.23 DPC below ground level

## 6.2.4 CWI installation assessment

### Property suitability

In its condition at the time of our survey, we do not consider the property suitable to have a CWI installation carried out based on detailed findings from our survey as follows:

- Guttering is compromised with vegetation.
- Crack in the soffit.
- Defective perimeter seals around some of the window and door openings.
- DPC level is non-compliant with building regulations and CWI industry standards.
- Mortar joints have significantly eroded on the rear elevation.
- Debris in the cavity on the side elevation.

### CWI installation and cavity width

The property has been installed with a mineral fibre CWI system. The cavity width was recorded at 65mm on the front elevation, between 60mm to 70mm on the side elevation and between 55mm to 70mm on the rear elevation which denote the cavity width as being suitable for all BBA approved CWI systems.

### CWI condition

The cavity was assessed by way of intrusive borescope inspection at nine different intervals (three on each elevation) on all accessible elevations. At all of the points of borescope inspection, void areas in the CWI installation were discovered along with debris in the side elevation cavity which was acting as a bridge between the outer and inner walls. The debris should be removed because it could be a conduit for moisture to travel across the cavity to the inner wall, representing a risk of compromise to the inner wall resulting in the formation of damp. Voids in the insulation could increase the risk of condensation on the inner wall due to the cold bridging effect.



Figure 6.24 Void and debris in CWI



Figure 6.25 Void in CWI

### Drilling pattern

Assessment of the drilling pattern identified that the injection holes were too far apart on all elevations, resulting in a failure of the CWI material to distribute evenly into the cavity and achieve the required density fill. This CWI installation is non-compliant with the requirements of the system designer's manual and the issued system Agrément Certificate.



Figure 6.26 Rear elevation

### 6.2.5 Remedial work recommendations

The Class 2 – Category A recommendation denotes that the building fabric has been compromised but the situation is stable with remediation works still required. Currently no adverse effects are noted on the inner walls relating or due to the poor condition of the external façade and the non-compliant CWI installation, but in our opinion there remains a high probability that the non-compliant CWI installation will become compromised if remediation works to the CWI installation and external façade of the dwelling are not undertaken.

For this property we would propose the following course of remediation:

- Removing the CWI from the cavity, ensuring that all of the CWI material and any debris within the cavity is removed leaving a clean cavity.
- Re-pointing the eroded mortar in all relevant areas on the external façade.
- Removing and replacing all defective window and door perimeter seals to ensure that there is an appropriate seal between the window/door framework and cavity.
- Cleaning the guttering of any vegetation and debris.
- Repairing the cracked soffit.
- Remediating the DPC to comply with building regulations and CWI industry standards.

Upon completion of the recommended remediation works, the property would then need to be reassessed to ascertain whether it is now suitable to have a new CWI system.

### 6.2.6 Comparison of Class 2 – Category A and Class 2 – Category B recommendations

Properties assessed and placed into the Class 2 – Category B recommendation differ only to properties within the Class 2 – Category A recommendation in the fact that the CWI installation has been identified as being compliant with industry standards and the CWI system Agrément Certificate and therefore no remediation works are required to the CWI installation itself.

However, the condition of the external façade for Class 2 – Category B classified properties is the same as Class 2 – Category A classified properties where the building fabric has been compromised but the situation is stable and remediation works are still required. Additionally, and due to these reasons, there is a high probability that compliant CWI installations could become compromised if remediation works to the external façade are not undertaken.

## 6.3. Case study 3: Class 3 recommendation

### 6.3.1 Case study objective

This case study describes the evidence gathered from a property survey classified as a Class 3 - Category A recommendation where the following findings were identified:

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has not been compromised and remediation works can be undertaken as part of a normal maintenance plan.
- The building fabric is showing signs of minimal stress due to the maintenance-related defects identified on the external façade of the dwelling.
- It is possible that non-compliant CWI installations could become compromised if remediation works to the external façade are not undertaken.

### 6.3.2 Property characteristics

The property is a semi-detached bungalow, traditionally constructed with a block outer leaf, rendered-dash finish, built between 1949-1960 and located in a village on the edge of a small housing estate. The geographical location and topography (flat) combined with the surrounding buildings and trees offers this dwelling some protection from the elements and it is therefore considered to be located in a moderate exposure zone.



### 6.3.3 Property conditions

#### Roof area

The pitched roof of the property is in a generally good condition with no defects or maintenance-related issues identified during the survey. There is one broken tile on the front elevation, but this is not currently having a detrimental effect on performance or causing the condition to deteriorate.



Figure 6.27 Broken roof tile

#### Guttering

The guttering is in a relatively good condition but has vegetation growth in the rear sections which if not removed would increase the risk of water overflowing onto the external wall area and accessing the cavity with the potential to compromise the inner walls. The guttering joint between the adjoining property has failed and if this is not remediated water volume flowing onto the render will increase and have the potential to compromise the inner walls.



Figure 6.28 Broken guttering joint



Figure 6.29 Blocked guttering

#### Render

The render on the rear elevation requires remediation to a section that has split. If left un-remediated there is the potential for water to ingress behind the render, with a high risk of the render detaching from the wall and exposing the outer substrate to high volumes of water with the potential to compromise the inner walls.



Figure 6.30 Crack in the render

#### Gable wall suitability

The airbricks in the gable wall have not been sleeved. If this is not remediated, water accessing through the vent is likely to compromise the CWI and may compromise the inner wall areas.



Figure 6.31 Airbrick not sleeved

### 6.3.4 CWI installation assessment

#### Property suitability

In its condition at the time of our survey, we do not consider the property suitable to have a CWI installation carried out based on detailed findings from our survey as follows:

- Guttering is compromised by vegetation and a broken joint.
- Crack identified in the render.
- Gable wall vent not sleeved.

#### CWI installation and cavity width

The property has been installed with a mineral fibre CWI system. The cavity width was measured at 80mm on all elevations, which denotes the cavity width as suitable for all approved CWI systems.

#### CWI condition

The cavity was assessed by way of intrusive borescope inspection at nine different intervals (three on each elevation) on all accessible elevations. On the front elevation two of the borescope inspections identified voids in the CWI and one with an inadequate fill. On both the side and rear elevations only one of the borescope inspections identified a void in the CWI, with the other two inspection points compliant with requirements. Voids in the CWI could increase the risk of condensation on the inner wall due to the cold bridging effect.



Figure 6.32 Void in the CWI



Figure 6.33 Inadequate CWI density

### 6.3.5 Remedial work recommendations

The Class 3 – Category A recommendation denotes that there is evidence of minimal building fabric stress, with no serious underlying causes and remediation can be undertaken as part of a normal maintenance plan. Currently the property is showing no adverse effects on the inner walls relating or due to the condition of the external façade and the non-compliant CWI installation. In our opinion there remains a possibility that the non-compliant CWI installation will become compromised if remediation works to the CWI installation and external façade of the dwelling are not undertaken.

For this property we would propose the following course of remediation:

- Removing the CWI from the cavity, ensuring that all of the CWI material and any debris within the cavity are removed leaving a clean cavity.
- Cleaning the guttering of vegetation and debris.
- Repairing the broken guttering joint.
- Repairing the render as required.

Upon completion of the recommended remediation works, the property would then need to be reassessed to ascertain whether it is now suitable to have a new CWI system installed.

### 6.3.6 Comparison of Class 3 – Category B and Class 3 – Category A recommendations

Properties assessed and placed into the Class 3 – Category B recommendation differ only to properties within the Class 3 – Category A recommendation in the fact that their CWI installation has been identified as being compliant with industry standards and the CWI system Agrément Certificate and therefore no remediation works are required to the CWI installation itself.

However, the condition of the external façade for Class 3 - Category B classified properties is the same as Class 3 - Category A classified properties where there is evidence of minimal building fabric stress, with no serious underlying causes and remediation can be undertaken as part of a normal maintenance plan. Additionally, it is possible that compliant CWI installations could become compromised if remediation works to the external façade are not undertaken.

#### 6.4. Case study 4: No Class recommendation

##### 6.4.1 Case study objectives

This case studies describes the evidence gathered from a property survey classified as a No Class recommendation, where the following findings were identified:

- The CWI installation is compliant with industry standards and the CWI system Agrément Certificate.
- The building fabric is showing no signs of stress.
- No maintenance-related defects have been identified on the external façade of the dwelling.

##### 6.4.2 Property characteristics

The property is an end of terrace house, traditionally constructed with a render coating built between 1945-1960 and is located in a predominantly social housing estate. The geographical location and topography (flat) combined with the surrounding buildings offers some protection from the elements and leads us to the opinion that the property is located in a moderate exposure zone.

##### 6.4.3 Property conditions

The survey report for this property showed there to be no issues identified with the external façade roof, doors and windows.

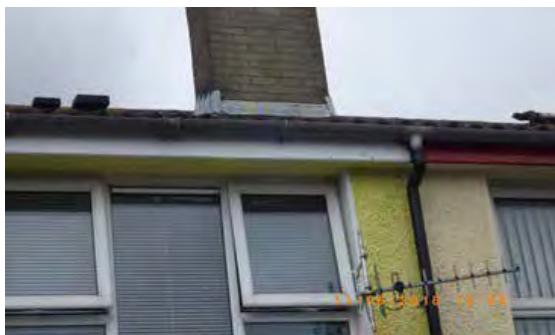


Figure 6.34 Fascia, soffit and guttering in good condition



Figure 6.35 Door reveal juncture in good condition



Figure 6.36 DPC level compliant with Building Regulations and CWI industry standards



Figure 6.37 External façade in a good condition



Figure 6.38 DPC level compliant with Building Regulations and CWI industry standards





Figure 6.39 Verge edge tiles embedded correctly



Figure 6.43 DPC level compliant with Building Regulations and CWI industry standards



Figure 6.40 Window reveal juncture in a good condition



Figure 6.41 Door reveal juncture in a good condition



Figure 6.42 Fascia, soffit and guttering in good condition

The internal inspection of the cavity walls found no issues with the CWI installation. The intrusive borescope inspections identified the cavity was adequately filled with CWI and installed in compliance with industry requirements and the Agrément Certificate for this type of system. Figures 6.44 and 6.45 are images from the internal inspection of the cavity using the borescope camera. The images evidence a cavity adequately filled with CWI material.



Figure 6.44 Borescope image of cavity (front) elevation



Figure 6.45 Borescope image of cavity (rear) elevation

The internal walls showed no signs of damp or condensation. The occupant reported they had not witnessed any problems of this type. The loft space inspection found the internal gable wall to be in a good condition with the eaves clear of loft insulation, allowing for good crossflow ventilation.



Figure 6.46 Clear eaves area in loft space



Figure 6.47 Gable wall in good condition

#### 6.4.5 Remedial work recommendations

Based on the survey findings there are no remediation works required to either the CWI installation or external façade of the property.

#### 6.4.4 CWI installation assessment

The property is suitable to have CWI installed, with a well-maintained roof covering, fascias, soffits, guttering, external walls and DPC level that is compliant with building regulations and CWI industry standards.

The drilling pattern complies with requirements set out for this type of CWI system by both system designers and the BBA Agrément Certificate.

The borescope inspections performed at nine points across the property identified good CWI material density showing compliance with the requirements set out in the system designer's manual for this type of product.

The making good of the installation injection holes is of a good standard and in compliance with industry requirements.

Based on the assessment methodology applied, we believe the CWI system has been installed in compliance with industry standards as set out in the Agrément Certificate, system designer's manual and best practice guides for this type of product.

# 7. Social housing – research outcomes

## 7.1. Property surveys

For the social housing element of the research, CIT conducted 825 physical surveys of NIHE’s social housing stock. This sample incorporated all of the 13 district areas defined by the Housing Executive – see Figure 7.1 below



Figure 7.1 Social housing: district locations

At county level, 65% of the surveyed properties are located in County Antrim and County Down. The majority of NIHE’s social housing stock surveyed were built between 1961 and 1980, 62% of the total. In contrast, the number of pre-1945 constructed properties surveyed is much lower at only 17 examples.

Fermanagh is the county with fewest properties surveyed and equates to 2% of the total sample.

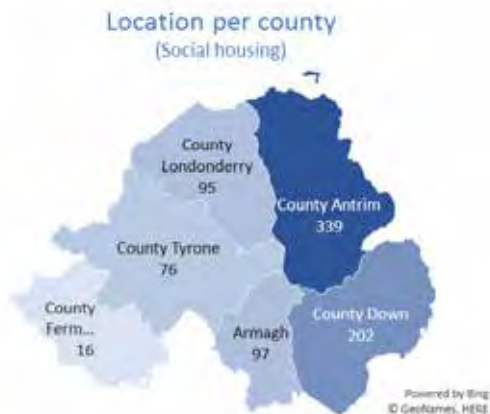


Figure 7.2 Social housing: sample per county



Figure 7.3 Social housing: year of construction

Figure 7.4 displays the distribution of different property types within the social housing property sample. Houses were the most surveyed property type representing 54% or 449 properties. Bungalows represent 26% of the sample with 218 properties surveyed, followed by flats with 154 surveys or 19% of the total sample.



Figure 7.4 Social housing: property type

Only four maisonettes were surveyed in this research, a number too small to make any findings significant for the analysis or representative of the total cohort. Therefore, maisonettes are not referenced in most of the following section.

## 7.2. Province-wide findings

Table 7.1 describes the results of the 825 social houses surveyed in the research. 84% of the properties surveyed has problems relating to CWI or the condition of the external façade, with 16% being identified in acceptable condition with no CWI or property fabric defects (No Class). The degree of problem severity varies widely, from 1% of properties

where the building fabric condition is actively deteriorating and remedial works are needed (Class 1), 32% where the building fabric is compromised but the situation is stable with remediation works still required (Class 2), to 51% of properties which are showing evidence of minimal building fabric stress, with no serious underlying causes and requiring remediation work as part of a normal maintenance plan (Class 3).

For properties within Class 2 and Class 3 recommendations, 63% of CWI installations were adjudged to be non-compliant with industry standards and/or the CWI system Agrément Certificate, with the most common cases showing defects such as voids in the CWI fill and/or debris in the cavity.

## Class summary

(Social housing)

	Properties	Percentage
<b>Class 1</b>	9	1%
<b>Class 2</b>	266	32%
<i>Cat A</i>	200	
<i>Cat B</i>	66	
<b>Class 3</b>	423	51%
<i>Cat A</i>	310	
<i>Cat B</i>	113	
<b>No Class</b>	127	16%
<b>Total</b>	<b>825</b>	

Table 7.1 Social housing: province-wide findings summary

This research has found that at province-wide level 519 properties or 63% surveyed showed evidence of voids in the CWI fill and/or debris in the cavity. In relation to external façade issues, the most common property maintenance-related defects at 20% or higher of the sample are damaged/blocked guttering, non-compliant DPC levels and defective perimeter seals on windows and doors.

		Total classes	
<b>CWI related issues</b>			
Voids in the CWI and or debris in the cavity	519	63%	
Redundent air vents not sealed	3	0%	
Inadequate combustion ventilation	41	5%	
Condensation	3	0%	
Damp	8	1%	
<b>Façade issues</b>			
Condensation	19	2%	
Damp	6	1%	
Vegetation encroaching the cavity	5	1%	
Mortar erosion	101	12%	
Damaged/blocked guttering	178	22%	
Damaged soffits & fascias	94	11%	
Non-compliant DPC Level	184	22%	
Damaged tile vents	2	0%	
Damaged tiles/slate	15	2%	
Damaged paintwork	4	0%	
Damaged render/brickwork	56	7%	
Damaged verge Boards	61	7%	
Defective perimeter seals - doors & windows	246	30%	
Eaves blocked with loft insulation	5	1%	
Damaged roof section	46	6%	
Excessive moss growth on roof tiles	5	1%	
<b>Total properties</b>	<b>825</b>		

Table 7.2 Social housing: survey summary

The results of the research reflect characteristics of the total social housing sample, which has a clear majority of the surveyed properties having been constructed between 1961-1980 (62%) and of the 'House' property type (54%). This is a critical factor which would affect any concentration analysis of CWI and external façade issues. However, this profile follows the year of construction and property type distribution of the population of properties managed by NIHE.

In order to still be able to provide a meaningful analysis of possible concentration issues within the sample, a simple approach has been used where the distribution of properties with a specific CWI or external façade issue is compared with the total social housing property sample distribution. If the two distributions are 'similar', then there is no clear evidence of concentration of properties with that specific issue. For the purpose of this research, 'similar' is defined as a difference within 5%. Therefore, any difference greater than 5% suggests a possible concentration of properties in the sample showing evidence of a specific CWI/external façade issue.



Table 7.3 shows the distribution of properties for each of the most common external façade issues by year of construction and property type. The cells highlighted in yellow show those

values which are 5% above the total social housing property sample and, therefore, suggest a possible concentration of properties with that particular issue.

	Social housing - national findings on top-3 façade issues							
	Year of construction				Property type			
	Pre 1945	1945 - 1960	1961 - 1980	Post 1980	Bungalow	House	Flat	Maisonette
Damaged/blocked guttering	3%	15%	65%	17%	20%	64%	16%	1%
Non-compliant DPC Level	3%	22%	52%	23%	32%	51%	18%	0%
Defective perimeter seals - doors & windows	2%	13%	72%	13%	29%	57%	14%	0%
Distribution for total social housing sample	2%	18%	62%	18%	26%	54%	19%	0%

Table 7.3 Concentration of the most common external façade issues for social properties sample

For instance, the findings show that 72% of the defective perimeter seals on doors and windows were found in properties built between 1961 and 1980, 10% above the total sample distribution of social properties. This suggests a concentration of door and window issues in properties built during this period.

### 7.3. Class 1 recommendation

Definition:

**Building fabric condition is actively deteriorating, remedial works needed.**

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has been compromised by excessive water ingress caused by the condition of the external façade of the dwelling combined with defects such as voids in the insulation fill and/or debris in the cavity which has allowed moisture to bridge across the CWI to the inner leaf resulting in the formation of damp, condensation on the internal wall.
- Remediation works are required to the CWI installation.
- Remediation works are required to the maintenance-related defects identified on the external façade.

Class 1 recommendation represents the most serious condition of properties identified in the research. Of the 825 properties surveyed nine have been placed in the Class 1 recommendation.

Properties were found in six district areas: Causeway, Mid

Ulster, South Antrim, South & East Belfast, South West and East areas. They cover five of the six counties of Northern Ireland (the exemption is Armagh where no Class 1 properties were found). Of the nine properties identified, five are flats and four are houses, with no bungalows identified with a Class 1 recommendation. The year of construction of all properties surveyed in this Class recommendation was between 1945 and 1980.



Figure 7.5 Class 1 properties by county



		Class 1	
<b>Location per district</b>			
CAUSEWAY AREA	1	11%	
EAST AREA	1	11%	
LISBURN/CASTLEREAGH AREA			
MID ULSTER AREA	2	22%	
NORTH BELFAST			
NORTH DOWN AND ARDS AREA			
SOUTH AND EAST BELFAST	1	11%	
SOUTH ANTRIM AREA	2	22%	
SOUTH AREA			
SOUTH DOWN AREA			
SOUTH WEST AREA	2	22%	
WEST AREA			
WEST BELFAST			
<b>Property type</b>			
Bungalow			
Flat	5	56%	
House	4	44%	
Maisonette			
<b>Year of construction</b>			
Pre 1945			
1945 - 1960	2	22%	
1961 - 1980	7	78%	
Post 1980			
<b>Total</b>	<b>9</b>		

Table 7.4 Class 1 properties description summary

		Class 1	
<b>CWI related issues</b>			
Voids in the CWI and/or debris in the cavity	9	100%	
Redundent air vents not sealed			
Inadequate combustion ventilation			
Condensation	3	33%	
Damp	8	89%	
<b>Façade issues</b>			
Condensation			
Damp			
Vegetation encroaching the cavity			
Mortar erosion	1	11%	
Damaged/blocked guttering	2	22%	
Damaged soffits & fascias	1	11%	
Non-compliant DPC Level	2	22%	
Damaged tile vents			
Damaged tiles/slate			
Damaged paintwork			
Damaged render/brickwork	1	11%	
Damaged verge Boards	1	11%	
Defective perimeter seals - doors & windows	4	44%	
Eaves blocked with loft insulation			
Damaged roof section	2	22%	
Excessive moss growth on roof tiles			
<b>Total properties</b>	<b>9</b>		

Table 7.5 Class 1 findings summary

Voids in the CWI and/or debris in the cavity were identified in all properties surveyed (ref: figures 7.6, 7.7, 7.8 & 7.9). There was also evidence of a direct correlation between the void in the CWI fill and or debris bridging the cavity with the formation of damp or condensation on the internal wall.

Condensation (33%) (ref: figures 7.12 & 7.13). Evidence gathered highlighted areas of condensation on the inner wall, corresponding with compromised CWI installations, with the voids in the CWI installation promoting cold bridging in the area, and condensation generated as a result.

Damp (89%) (ref: figures 7.10 - 7.15). Evidence gathered shows voids and or debris in the CWI installation corresponding with the damp or damp and condensation on the inner walls of the properties.

Non-compliant DPC levels (22%) (ref: figures 7.20 & 7.21) are highlighted within the photographic evidence. Both examples show the DPC level to be below the recommended 150mm height for CWI to be installed. The low level of the DPC in the examples provided will expose the lower section of the walls to a higher volume of moisture.

Defective perimeter seals to doors and windows (44%) (ref: figures 7.16 & 7.17). Defective perimeter seals on door and window frames increase the potential for wind-driven rain to breach the external façade and gain access to the cavity exposing it to a higher volume of water, with the risk of generating damp and compromising the internal walls.

Damaged roof section (22%) (ref: figures 7.18 & 7.19). Damaged verge mortar can lead to rain water tracking across the top of the outer wall and gaining access to the cavity, with the potential to cause damp on the inner wall.



Figure 7.6 Void in the CWI installation



Figure 7.9 Void in the CWI installation



Figure 7.7 Void in the CWI installation and debris bridging the cavity



Figure 7.10 Damp



Figure 7.8 Void and debris bridging the cavity



Figure 7.11 Damp



Figure 7.12 Condensation



Figure 7.15 Damp and condensation



Figure 7.13 Condensation



Figure 7.16 Defective perimeter seal between door and wall



Figure 7.14 Damp and condensation



Figure 7.17 Defective perimeter seal between window and wall



Figure 7.18 Damaged roof – Cracked verge mortar



Figure 7.19 Damaged roof - Cracked verge mortar



Figure 7.20 Compromised DPC



Figure 7.21 Non-compliant DPC level

## 7.4. Class 2 recommendation

### 7.4.1 Category A

Definition:

**Building fabric has been compromised but situation stable, remediation works still required.**

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has not been compromised but remediation works are still required.
- The building fabric has been compromised by the severity of the maintenance-related defects identified on the external façade and remediation works are still required.
- There is a high probability that non-compliant CWI installations will become compromised if remediation works to the CWI installation and external façade of the dwelling are not undertaken.

Table 7.6 summarises the number of surveyed Class 2-Category A properties by the location, property type and year of construction. Class 2-Category A properties are found across most districts, with East Area and North Belfast having a lower sample of just six and three properties respectively. The average number of properties surveyed per district is 17 properties.

At county level, Down and Antrim contained the highest number of properties in the Class 2 – Category A recommendation with 61 and 57 of the survey sample respectively.

The research identifies a high concentration of Class 2-Category A properties built during 1961-1980 and that represents 72% of the total surveyed (10% above the province-wide sample for social housing properties).

In terms of property type, the results also show a high number of bungalow and houses classified as Class 2 – Category A (89% of the total social housing property sample).



## 7. Social housing – research outcomes



Figure 7.22 Properties by county

	Class 2 Category A	
Location per district		
CAUSEWAY AREA	14	7%
EAST AREA	6	3%
LISBURN/CASTLEREAGH AREA	11	6%
MID ULSTER AREA	15	8%
NORTH BELFAST	3	2%
NORTH DOWN AND ARDS AREA	31	16%
SOUTH AND EAST BELFAST	24	12%
SOUTH ANTRIM AREA	15	8%
SOUTH AREA	25	13%
SOUTH DOWN AREA	12	6%
SOUTH WEST AREA	13	7%
WEST AREA	19	10%
WEST BELFAST	12	6%
Property type		
Bungalow	50	25%
Flat	23	12%
House	127	64%
Maisonette		
Year of construction		
Pre 1945	3	2%
1945 - 1960	34	17%
1961 - 1980	143	72%
Post 1980	20	10%
<b>Total</b>	<b>200</b>	

Table 7.6 Class 2 - Category A properties description summary

	Class 2 Category A	
CWI related issues		
Voids in the CWI and or debris in the cavity	200	100%
Redundent air vents not sealed		
Inadequate combustion ventilation	15	8%
Condensation		
Damp		
Façade issues		
Condensation	5	3%
Damp	3	2%
Vegetation encroaching the cavity	1	1%
Mortar erosion	66	33%
Damaged/blocked guttering	94	47%
Damaged soffits & fascias	22	11%
Non-compliant DPC Level	54	27%
Damaged tile vents	1	1%
Damaged tiles/slate	7	4%
Damaged paintwork		
Damaged render/brickwork	20	10%
Damaged verge Boards	40	20%
Defective perimeter seals - doors & windows	128	64%
Eaves blocked with loft insulation	1	1%
Damaged roof section	16	8%
Excessive moss growth on roof tiles	1	1%
<b>Total properties</b>	<b>200</b>	

Table 7.7 Class 2 - Category A survey summary

Table 7.8 shows the distribution of Class 2 – Category A properties by archetype and provides more details about where these properties are located in the terrace block and overall building.

	Class 2 Category A	
Bungalow - End Terrace	16	8%
Bungalow - Mid Terrace	20	10%
Bungalow - Semi Detached	14	7%
Flat - First Floor	4	2%
Flat - Ground Floor	19	10%
House - End Terrace	49	25%
House - Mid Terrace	65	33%
House - Semi Detached	13	7%
<b>Total properties</b>	<b>200</b>	

Table 7.8 Class 2 - Category A properties description summary



All Class 2 - Category A properties evidenced problems with voids in the CWI fill and debris in the cavity which require the CWI to be extracted from the cavity and for the cavity to be cleaned of all debris. Debris is required to be removed because it could be a conduit for moisture to travel across the cavity to the inner wall, representing a risk of compromising the inner wall and resulting in the formation of damp. Voids in the insulation could increase the risk of condensation on the inner wall due to the cold bridging effect (ref: figures 7.23 & 7.24).

In terms of the external façade, defective perimeter seals on doors and windows was the main issue with almost two thirds of the properties surveyed requiring repair (64%) (ref: figures 7.31 & 7.32). If the juncture between the window/door frame is not sealed correctly, excess moisture may access into the cavity, with the potential risk to compromise the CWI and bridge the cavity, causing damp to form on the inner walls.

Guttering was the second most common identified issue with almost half of the properties requiring repair or cleaning (47%) (ref: figures 7.25 & 7.26). Defects can allow excess water to flow directly onto the external walls, causing them to become saturated introducing excess water into the cavity, which could increase the risk of water bridging the CWI installation and/or becoming saturated resulting in the formation of damp on the inner walls.

Other defects that could compromise the property external façade are mortar erosion (33%), (ref: figure 7.29), non-compliant DPC level, (27%) (ref: figures 7.27 & 7.28) and compromised verge boards, (20%) (ref: figure 7.30). Compromised mortar (e.g. recessed, missing, damaged or cracked) will weaken the external façade allowing excess water to penetrate the outer wall which may then cause the CWI to become saturated and or water to bridge across the cavity compromising the inner walls. DPC levels and the poor condition of verge boards also have the potential to compromise the external façade's weather resistance to protect the cavity from excess moisture ingress.

The analysis undertaken by property age and type displays the distribution of the results for each of the most common external façade issues against the distribution for the total social housing property sample of 825.

Table 7.9 shows the distribution of properties for each of the most common external façade issues by year of construction and property type. The cells highlighted in yellow show those values which are 5% above the province-wide property distribution for the total social property sample. The findings point to a higher than average concentration of mortar erosion, damaged/blocked guttering and defective perimeter seals on doors and windows in houses built between 1961-1980. For non-compliant DPC level, the concentration was found in houses built between 1945 and 1960. In the case of damaged verge boards, the concentration is found in properties built between 1961 and 1980 and in a higher proportion in bungalows.

	Class 2 - Category A							
	Year of construction				Property type			
	Pre 1945	1945 - 1960	1961 - 1980	Post 1980	Bungalow	House	Flat	Maisonette
Mortar erosion	3%	15%	70%	12%	15%	71%	14%	0%
Damaged/blocked guttering	3%	14%	72%	11%	22%	68%	10%	0%
Non-compliant DPC Level	4%	26%	59%	11%	22%	69%	9%	0%
Damaged verge Boards	0%	15%	78%	8%	38%	58%	5%	0%
Defective perimeter seals - doors & windows	2%	10%	77%	11%	27%	66%	7%	0%
Distribution for total social housing sample	2%	18%	62%	18%	26%	54%	19%	0%

Table 7.9 Concentration of the most common external façade issues for Class 2 - Category A properties



Figure 7.23 Debris in cavity and void in CWI



Figure 7.26 Compromised guttering



Figure 7.24 Debris in cavity and void in CWI



Figure 7.27 Non compliant DPC level (below 150mm)



Figure 7.25 Damaged guttering



Figure 7.28 Non compliant DPC (below ground level)



Figure 7.29 Compromised mortar



Figure 7.31 Defective perimeter seal (door)



Figure 7.30 Compromised verge board



Figure 7.32 Defective perimeter seal (window)

## 7.4.2 Category B

Definition:

**Building fabric has been compromised but situation stable, remediation works still required.**

- The CWI installation is compliant with industry standards and the CWI system Agrément Certificate.
- No remediation works are required to the CWI installation.
- The building fabric has been compromised by the severity of the maintenance-related defects identified on the external façade and remediation works are still required.
- It is possible that compliant CWI installations could become compromised if remediation works to the external façade are not undertaken.

Table 7.10 presents the profile of the surveyed Class 2 - Category B recommendation properties. There is a concentration of Class 2 - Category B properties in two district areas, North Down & Ards and South and East Belfast, representing 41% of the 66 properties. A similar concentration is found with year of construction, with 84% of the properties built between 1945 and 1980 and very much aligned with the sample distribution for social housing (see Figure 7.3). In relation to property type, Class 2 Category B properties were mainly bungalows, flats and houses.



Figure 7.33 Properties by county

		Class 2 Category B	
Location per district			
CAUSEWAY AREA	2	3%	
EAST AREA	5	8%	
LISBURN/CASTLEREAGH AREA	4	6%	
MID ULSTER AREA	1	2%	
NORTH BELFAST	3	5%	
NORTH DOWN AND ARDS AREA	14	21%	
SOUTH AND EAST BELFAST	13	20%	
SOUTH ANTRIM AREA	6	9%	
SOUTH AREA	5	8%	
SOUTH DOWN AREA	6	9%	
SOUTH WEST AREA	2	3%	
WEST AREA	1	2%	
WEST BELFAST	4	6%	
Property type			
Bungalow	14	21%	
Flat	20	30%	
House	30	45%	
Maisonette	2	3%	
Year of construction			
Pre 1945	1	2%	
1945 - 1960	13	20%	
1961 - 1980	42	64%	
Post 1980	10	15%	
<b>Total</b>	<b>66</b>		

Table 7.10 Class 2 - Category B properties description summary

		Class 2 Category B	
CWI related issues			
Voids in the CWI and or debris in the cavity			
Redundent air vents not sealed			
Inadequate combustion ventilation	3	5%	
Condensation			
Damp			
Façade issues			
Condensation	4	6%	
Damp	2	3%	
Vegetation encroaching the cavity			
Mortar erosion	20	30%	
Damaged/blocked guttering	21	32%	
Damaged soffits & fascias	10	15%	
Non-compliant DPC Level	12	18%	
Damaged tile vents			
Damaged tiles/slate	4	6%	
Damaged paintwork			
Damaged render/brickwork	9	14%	
Damaged verge Boards	8	12%	
Defective perimeter seals - doors & windows	37	56%	
Eaves blocked with loft insulation			
Damaged roof section	7	11%	
Excessive moss growth on roof tiles			
<b>Total properties</b>	<b>66</b>		

Table 7.11 Class 2 - Category B survey summary

Based on the property survey methodology and evidence gathered, Class 2 Category B properties did not show evidence of issues with CWI installations.

However, like Category A, external façade issues are mainly related to defective perimeter seals on doors and windows with more than half of the properties in this category requiring repair (56%). Mortar erosion and damaged/blocked guttering were significant factors affecting the condition of the fabric of properties surveyed, although less severe than in Category A. Mortar and guttering defects represent a risk in the medium term, enabling damage to the external façade over time and therefore have the potential to eventually compromise the CWI installation.

Mortar erosion (30%) (ref: figures 7.34 & 7.35). As can be seen from the photographic evidence poor making-good also factors within this area, where the exposure level to the cavity from wind-driven rain is higher due to poor maintenance of the external façade. Evidence gathered suggests that eventually the transmittance of moisture in a property installed with CWI will bridge the cavity with a high risk of affecting the inner wall and causing the formation of damp or condensation.



Damaged/blocked guttering (32%) (ref: figures 7.36 & 7.37). Where guttering is either damaged or blocked with foliage growth impeding the dispersal of the rain water, this could soak the outer wall elements (soffit, fascia, brick or render) eventually causing damage to the external façade leading to excessive moisture to access the cavity.

Defective perimeter seals on doors & windows (56%) (ref: figures 7.38 & 7.39). As can be seen in the photographic evidence, defective perimeter seal between doors and window frames can allow wind driven rain easier access

to the cavity due to poor application and or deprived maintenance of the seals.

In considering the concentration of properties these three main external façade issues, the findings show a higher concentration of houses with mortar erosion and flats with guttering defects. In terms of the year of construction of properties surveyed, the findings do not show evidence of any concentration, following the same sample distribution for the total social housing property sample.

	Class 2 - Category B							
	Year of construction				Property type			
	Pre 1945	1945 - 1960	1961 - 1980	Post 1980	Bungalow	House	Flat	Maisonette
Mortar erosion	5%	20%	60%	15%	15%	60%	20%	5%
Damaged/blocked guttering	0%	19%	67%	14%	10%	48%	38%	5%
Defective perimeter seals - doors & windows	3%	22%	67%	8%	22%	53%	22%	3%
Distribution for total social housing sample	2%	18%	62%	18%	26%	54%	19%	0%

Table 7.12 Concentration of the most common external façade issues for Class 2 - Category B properties



Figure 7.34 Compromised mortar joint



Figure 7.36 Blocked guttering



Figure 7.35 Compromised mortar joint



Figure 7.37 Damaged guttering





Figure 7.38 Defective perimeter seal (door)



Figure 7.39 Defective perimeter seal (window)

## 7.5. Class 3 recommendation

### 7.5.1 Category A

Definition:

**Evidence of minimal building fabric stress, with no serious underlying causes, remediation can be undertaken as part of a normal maintenance plan.**

- The CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate.
- Defects such as voids in the CWI fill and/or debris in the cavity have been identified.
- The CWI has not been compromised and remediation works can be undertaken as part of a normal maintenance plan.
- The building fabric is showing signs of minimal stress due to the maintenance-related defects identified on the external façade of the dwelling.
- It is possible that non-compliant CWI installations could become compromised if remediation works to the external façade are not undertaken.

Table 7.13 shows the profile of Class 3 – Category A properties. In terms of location, there is no particular district showing a high volume of Class 3 - Category A properties. The average number per district is 24 properties and only North Down & Ards area is below this level with nine properties surveyed. At county level, all counties with the exemption of Fermanagh (12 properties) have a number of Class 3 – Category A properties close to the district average of 24 properties.



Figure 7.40 Properties by county

Regarding age of property, 63% of properties were constructed between 1961-1980, aligned with the total social housing sample. In relation to property type, houses and bungalows represent 87% of the surveyed properties classified as Class 3 – Category A recommendation

		Class 3 Category A	
<b>Location per district</b>			
CAUSEWAY AREA	22	7%	
EAST AREA	27	9%	
LISBURN/CASTLEREAGH AREA	42	14%	
MID ULSTER AREA	23	7%	
NORTH BELFAST	15	5%	
NORTH DOWN AND ARDS AREA	9	3%	
SOUTH AND EAST BELFAST	24	8%	
SOUTH ANTRIM AREA	26	8%	
SOUTH AREA	35	11%	
SOUTH DOWN AREA	21	7%	
SOUTH WEST AREA	12	4%	
WEST AREA	30	10%	
WEST BELFAST	24	8%	
<b>Property type</b>			
Bungalow	80	26%	
Flat	41	13%	
House	188	61%	
Maisonette	1	0%	
<b>Year of construction</b>			
Pre 1945	5	2%	
1945 - 1960	62	20%	
1961 - 1980	194	63%	
Post 1980	49	16%	
<b>Total</b>	<b>310</b>		

Table 7.13 Class 3 - Category A properties description summary

		Class 3 Category A	
<b>CWI related issues</b>			
Voids in the CWI and or debris in the cavity	310	100%	
Redundent air vents not sealed	1	0%	
Inadequate combustion ventilation	14	5%	
Condensation			
Damp			
<b>Façade issues</b>			
Condensation	8	3%	
Damp	1	0%	
Vegetation encroaching the cavity	2	1%	
Mortar erosion	10	3%	
Damaged/blocked guttering	30	10%	
Damaged soffits & fascias	30	10%	
Non-compliant DPC Level	73	24%	
Damaged tile vents	1	0%	
Damaged tiles/slate	2	1%	
Damaged paintwork			
Damaged render/brickwork	21	7%	
Damaged verge Boards	8	3%	
Defective perimeter seals - doors & windows	52	17%	
Eaves blocked with loft insulation	2	1%	
Damaged roof section	15	5%	
Excessive moss growth on roof tiles	3	1%	
<b>Total properties</b>	<b>310</b>		

#### 7.14 Class 3 - Category A survey summary

Voids in the CWI installation and or debris in the cavity (100%) (ref: figures 7.41- 7.46). All properties within this category exhibited voids in the CWI and/or debris in the cavity. Evidence also shows this to be identified for all types of CWI systems installed including foam, bead and fibre products. The consequence of voids/ debris will be a higher risk of moisture tracking across the cavity and compromising the inner walls.

Non-compliant DPC Level (24%) (ref: figures 7.47 & 7.48). Where the floor level on the outside of the property is higher than the DPC level on the external wall there is the potential for a higher volume of moisture to track through to the cavity. The DPC should be at least 150mm above the ground for the property to be considered suitable to have CWI installed.

The findings show no evidence of concentration of DPC issues in any particular year of construction or property type, similar to the outcome of the social housing sample.

	Class 3 - Category A							
	Year of construction				Property type			
	Pre 1945	1945 - 1960	1961 - 1980	Post 1980	Bungalow	House	Flat	Maisonette
Non-compliant DPC Level	1%	21%	59%	19%	26%	53%	21%	0%
Distribution for total social housing sample	2%	18%	62%	18%	26%	54%	19%	0%

Table 7.15 Concentration of the most common external façade issues for Class 3 - Category A properties



Figure 7.41 Void in the CWI installation



Figure 7.44 Void in the CWI installation



Figure 7.42 Void in the CWI installation



Figure 7.45 Void in the CWI installation



Figure 7.43 Void in the CWI installation



Figure 7.46 Void in the CWI installation



Figure 7.47 Non compliant DPC level (below 150mm)



Figure 7.48 Non compliant DPC level (below the Tarmac)

## 7.5.2 Category B

Definition:

**Evidence of minimal building fabric stress, with no serious underlying causes, remediation can be undertaken as part of a normal maintenance plan.**

- The CWI installation is compliant with industry standards and the CWI system Agrément Certificate.
- No remediation works are required to the CWI installation.
- The building fabric is showing signs of minimal stress due to the maintenance-related defects identified on the external façade and remediation works can be undertaken as part of a normal maintenance plan

Class 3 – Category B properties are found in most of the district areas and South Antrim area has the highest number of properties with 14. These results are aligned with the findings at county level, with

County Antrim showing the highest number of Class 3 – Category B properties (60 properties or 53% of the category sample).

In terms of property type, Class 3 – Category B are present in all property types (Maisonette is not included in the analysis due to no sample). The findings also show that properties built after 1980 have been identified with the highest proportion of external façade issues within a class recommendation, representing 27% of the total Class 3 – Category B sample.



Figure 7.49 Properties by county

Based on the survey methodology and evidence gathered properties within the Class 3 – Category B recommendation do not demonstrate problems associated with the CWI installations. Guttering, soffits/fascia, DPC level and defective perimeter seals on windows and doors represent the most common defects identified. Although these four elements of the external façade are notable in other classes and categories, the severity of their conditions are much less significant than in other class recommendation findings, representing a lower risk of exposure to the CWI installation. However, if left un-remediated the identified issues have the potential to deteriorate and subsequently increase the potential of the CWI installation becoming compromised.

## 7. Social housing – research outcomes

		Class 3 Category B	
<b>Location per district</b>			
CAUSEWAY AREA	5	4%	
EAST AREA	8	7%	
LISBURN/CASTLEREAGH AREA	11	10%	
MID ULSTER AREA	1	1%	
NORTH BELFAST	15	13%	
NORTH DOWN AND ARDS AREA	4	4%	
SOUTH AND EAST BELFAST	13	12%	
SOUTH ANTRIM AREA	16	14%	
SOUTH AREA	7	6%	
SOUTH DOWN AREA	12	11%	
SOUTH WEST AREA	3	3%	
WEST AREA	9	8%	
WEST BELFAST	9	8%	
<b>Property type</b>			
Bungalow	37	33%	
Flat	29	26%	
House	47	42%	
Maisonette			
<b>Year of construction</b>			
Pre 1945	5	4%	
1945 - 1960	15	13%	
1961 - 1980	63	56%	
Post 1980	30	27%	
<b>Total</b>	<b>113</b>		

Table 7.16 Class 3 - Category B properties description summary

Damaged/blocked guttering (27%) (ref: figures 7.50 & 7.51). When guttering is damaged or blocked with foliage growth that continues to impede the effective dispersal of the rain water, the water will overflow the guttering and soak the outer wall (soffit, fascia, brick or render) eventually increasing the risk of damage to the external façade through moisture accessing the cavity.

Damaged soffits and fascia (27%) (ref: figures 7.52 & 7.53). Poorly maintained soffits and fascia will, over time, reduce the weather tightness of the external façade increasing the risk of moisture access to the cavity.

		Class 3 Category B	
<b>CWI related issues</b>			
Voids in the CWI and or debris in the cavity			
Redundent air vents not sealed	2	2%	
Inadequate combustion ventilation	4	4%	
Condensation			
Damp			
<b>Façade issues</b>			
Condensation	2	2%	
Damp			
Vegetation encroaching the cavity	2	2%	
Mortar erosion	4	4%	
Damaged/blocked guttering	31	27%	
Damaged soffits & fascias	31	27%	
Non-compliant DPC Level	26	23%	
Damaged tile vents			
Damaged tiles/slate	2	2%	
Damaged paintwork	4	4%	
Damaged render/brickwork	5	4%	
Damaged verge Boards	4	4%	
Defective perimeter seals - doors & windows	25	22%	
Eaves blocked with loft insulation	2	2%	
Damaged roof section	6	5%	
Excessive moss growth on roof tiles	1	1%	
<b>Total properties</b>	<b>113</b>		

Table 7.17 Class 3 - Category A properties description summary

Non-compliant DPC level (23%) (ref: figures 7.54 & 7.55). If the DPC level on the external wall is below 150mm there is the potential for a higher volume of moisture to track through to the cavity, increasing the probability of damp on the inner wall. The DPC should be at least 150mm above the ground for the property to be considered suitable for CWI.

Defective perimeter seals to doors and windows (22%) (ref: figure 7.56 & 7.57). Gaps in the seals between the windows and doors will allow wind driven rain to gain access to the cavity increasing the risk of damp on the inner walls.

The findings show that, for the above mentioned most common external façade issues, there is a higher concentration in bungalows-built post 1980. Defective perimeter seals to windows and doors were most commonly identified in flats.



	Class 3 - Category B							
	Year of construction				Property type			
	Pre 1945	1945 - 1960	1961 - 1980	Post 1980	Bungalow	House	Flat	Maisonette
Damaged/blocked guttering	6%	13%	48%	32%	19%	58%	23%	0%
Damaged soffits & fascias	3%	3%	68%	26%	48%	35%	16%	5%
Non-compliant DPC Level	4%	23%	35%	38%	62%	23%	15%	0%
Defective perimeter seals - doors & windows	0%	9%	65%	26%	39%	30%	30%	0%
Distribution for total social housing sample	2%	18%	62%	18%	26%	54%	19%	0%

Table 7.18 Concentration of the most common external façade issues for Class 3 - Category B properties



Figure 7.50 Damaged guttering



Figure 7.52 Damaged soffit and fascia



Figure 7.51 Compromised guttering



Figure 7.53 Damaged soffit and fascia



Figure 7.54 Non-compliant DPC level (below 150mm)



Figure 7.56 Defective perimeter seal (door)



Figure 7.55 Non-compliant DPC level (below 150mm)



Figure 7.57 Defective perimeter seal (window)

### 7.6. No Class recommendation

Definition:

- The CWI installation is compliant with industry standards and the CWI system Agrément Certificate.
- The building fabric is showing no signs of stress.
- No maintenance-related defects have been identified on the external façade of the dwelling.

No Class recommendation properties represents 15% of the total sample of Properties. No Class properties show evidence of compliant CWI installation, with their building fabric displaying no signs of stress and with no maintenance-related defects on the external façade of the dwelling.

Properties in this Class recommendation are found province-wide with no evidence of concentration in any of the districts and counties. Samples have also been found in all property types. The highest concentration of No Class recommendation properties are amongst those built from 1961 to post 1980.



Figure 7.58 No Class: properties by county

Although a number of properties displayed some issues relating to the DPC and combustion ventilation, they did not merit any form of remediation to either the external façade or CWI installation.

	No class	
<b>Location per district</b>		
CAUSEWAY AREA	6	5%
EAST AREA	7	6%
LISBURN/CASTLEREAGH AREA	8	6%
MID ULSTER AREA	3	2%
NORTH BELFAST	6	5%
NORTH DOWN AND ARDS AREA	8	6%
SOUTH AND EAST BELFAST	24	19%
SOUTH ANTRIM AREA	15	12%
SOUTH AREA	12	9%
SOUTH DOWN AREA	9	7%
SOUTH WEST AREA	3	2%
WEST AREA	8	6%
WEST BELFAST	18	14%
<b>Property type</b>		
Bungalow	37	29%
Flat	36	28%
House	53	42%
Maisonette	1	1%
<b>Year of construction</b>		
Pre 1945	3	2%
1945 - 1960	23	18%
1961 - 1980	59	46%
Post 1980	42	33%
<b>Total</b>	<b>127</b>	

Table 7.19 Class 3 - Category B properties description summary

	No class	
<b>CWI related issues</b>		
Voids in the CWI and or debris in the cavity	5	4%
Redundent air vents not sealed		
Inadequate combustion ventilation		
Condensation		
Damp		
<b>Façade issues</b>		
Condensation	17	13%
Damp		
Vegetation encroaching the cavity		
Mortar erosion		
Damaged/blocked guttering		
Damaged soffits & fascias		
Non-compliant DPC Level		
Damaged tile vents		
Damaged tiles/slate		
Damaged paintwork		
Damaged render/brickwork		
Damaged verge Boards		
Defective perimeter seals - doors & windows		
Eaves blocked with loft insulation		
Damaged roof section		
Excessive moss growth on roof tiles		
<b>Total properties</b>		

Table 7.20 Class 3 -Category A properties description summary

All 127 properties identified as a No Class recommendation had CWI installations that based on the survey methodology were found to be compliant with industry standards and the system Agrément Certificate.

Any inadequate combustion ventilation cases were reported to NIHE on the same day they were identified for further consideration of any required remediation works.

## 8. Private homes – research outcomes

### 8.1. Property surveys

CIT conducted 113 physical surveys of private homes with 48% or 54 of the surveyed properties located in County Antrim. Armagh is the county with the fewest properties surveyed and equates to 7% of the total sample.



Figure 8.1 Private homes: sample per county

Figure 8.2 displays the distribution of different property types within the private homes' property sample. Houses were the most surveyed property type, representing 59% or 67 properties surveyed. Bungalows represent 40% of the sample with 45 properties surveyed. Most of the surveyed properties were detached or semi-detached representing 74% of the sample.

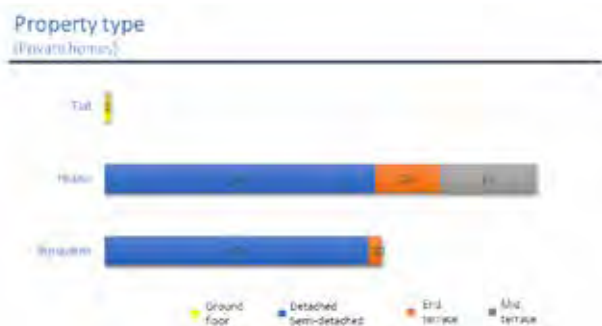


Figure 8.2 Private homes: property type

Only one flat was surveyed in this research which is statistically insignificant and therefore flats are not meaningfully referenced in the following discussion.

For the private homes survey, year of construction (YOC) data was not available and unlike the social housing survey, regional data was not relevant to private homes. Therefore, YOC and regions were not analysed.

### 8.2. Province-wide findings

Table 8.1 describes the results for the 113 private homes surveyed in the research. 59% of properties surveyed revealed problems with CWI or the external façade with 41% being identified in acceptable condition with no CWI or property fabric defects (No Class). Only one property was classified as Class 1, with the building fabric condition actively deteriorating and remedial works needed. Of the properties surveyed 15% or 17 properties showed evidence of the building fabric being compromised but in a stable situation with remediation works required and therefore classified in Class 2. Of the properties surveyed 84% of the surveyed properties show evidence of minimal building fabric stress or no stress at all (Class 3 and No Class). The number of No Class private homes is more than double the number of properties found in the social housing sample. This disparity could be caused by many factors. For example, private homeowners may have invested more in the maintenance of their homes or been able to access more generous levels of grant funding for thermal improvements than social housing landlords, or it may be that in the private homes survey, more modern homes were surveyed in comparison to the age of NIHE's social housing stock surveyed.

For properties in Class 2 and Class 3 recommendations, 61% of CWI installations were discovered to be non-compliant with industry standards and the CWI system Agrément Certificate. This position is very similar to the outcome obtained in social housing, where 62% of the properties were found to have non-compliant CWI installations.

## Class summary

(Private homes)

	Properties	Percentage
<b>Class 1</b>	1	1%
<b>Class 2</b>	17	15%
<i>Cat A</i>	8	
<i>Cat B</i>	9	
<b>Class 3</b>	49	43%
<i>Cat A</i>	32	
<i>Cat B</i>	17	
<b>No Class</b>	46	41%
<b>Total</b>	<b>113</b>	

Table 8.1 Private homes: province-wide findings summary

In terms of the CWI issues, 41 properties or 34% of the private homes sample showed evidence of voids in the CWI fill and/or debris in the cavity.

### 8.3. Class classification analysis

Table 8.2 summarises the findings related to Class 1, 2, 3 and No Class by property type. The results for Class 1, for which there was only one property therefore indicated no concentration. Class 2 shows an equal distribution between Categories A and B, with Class 3 having a significantly higher number of properties in Category A than in Category B.

Comparing the results between houses and bungalows, Class 2 shows a similar distribution of properties between both property types. However, Class 3 indicates a higher volume of properties in Category B for houses. No Class also shows a relatively higher number of bungalows than houses.

	Class 1	Class 2		Class 3		No Class	Total	
		Cat A	Cat B	Cat A	Cat B			
<b>Property type</b>								
Bungalow		3 7%	3 7%	12 27%	5 11%	22 49%	45	40%
Flat	1						1	1%
House		5 7%	6 9%	20 30%	12 18%	24 36%	67	59%
<b>Total</b>	<b>1</b> 1%	<b>8</b> 7%	<b>9</b> 8%	<b>32</b> 28%	<b>17</b> 15%	<b>46</b> 41%	<b>113</b>	

Table 8.2 Private homes: Class classification by property type

Table 8.3 and Table 8.4 show the distribution of properties for each of the most common CWI and external façade issues by Class. The cells highlighted in yellow show values of at least 20% or above of the property sample for each individual Class/category.

For instance, the findings show that 44% of the Class 2 - Category B properties and 50% of Class 2 - Category A properties show evidence of defective perimeter seals to doors and windows.

The most common external façade issues found in all Classes are mortar erosion, non-compliant DPC levels, eaves blocked with loft insulation and damage to gutters, soffits/fascias, render/brickwork, verge board and defective perimeter seals on windows and doors.



8. Private homes – research outcomes

	Class 1	Class 2		Class 3		No Class	Total
		Cat A	Cat B	Cat A	Cat B		
<b>CWI related issues</b>							
Voids in the CWI and or debris in the cavity	1	8		32			41
Redundant air vents not sealed							0
Inadequate combustion ventilation		5	2	5	4	10	26
Condensation							0
Damp							0
<b>Façade issues</b>							
Condensation							0
Damp							0
Vegetation encroaching the cavity							0
Mortar erosion		1	3		2		6
Damaged/blocked Guttering		1	2	6	3	1	13
Damaged Soffits & Fascias		1	1	3			5
Non-compliant DPC Level		1	1	8	2	3	15
Damaged tile vents							0
Damaged Tiles/slate							0
Damaged Paintwork							0
Damaged Render/brickwork		1	3		3	1	8
Damaged Verge Boards		1	3				4
Defective perimeter seals - doors & windows		4	4	1	1	2	12
Eaves blocked with loft insulation			2	4	3	6	15
Damaged Roof section							0
Excessive moss growth on roof tiles							0
<b>Total properties</b>	<b>1</b>	<b>8</b>	<b>9</b>	<b>32</b>	<b>17</b>	<b>46</b>	<b>113</b>

Table 8.3 Private homes: properties issues description summary (volume of properties)

	Class 1	Class 2		Class 3		No Class	Total
		Cat A	Cat B	Cat A	Cat B		
<b>CWI related issues</b>							
Voids in the CWI and or debris in the cavity	100%	100%		100%			36%
Redundant air vents not sealed							0%
Inadequate combustion ventilation		63%	22%	16%	24%	22%	23%
Condensation							0%
Damp							0%
<b>Façade issues</b>							
Condensation							0%
Damp							0%
Vegetation encroaching the cavity							0%
Mortar erosion		13%	33%		12%		5%
Damaged/blocked Guttering		13%	22%	19%	18%	2%	12%
Damaged Soffits & Fascias		13%	11%	9%			4%
Non-compliant DPC Level		13%	11%	25%	12%	7%	13%
Damaged tile vents							0%
Damaged Tiles/slate							0%
Damaged Paintwork							0%
Damaged Render/brickwork		13%	33%		18%	2%	7%
Damaged Verge Boards		13%	33%				4%
Defective perimeter seals - doors & windows		50%	44%	3%	6%	4%	11%
Eaves blocked with loft insulation			22%	13%	18%	13%	13%
Damaged Roof section							0%
Excessive moss growth on roof tiles							0%
<b>Total properties</b>	<b>1</b>	<b>8</b>	<b>9</b>	<b>32</b>	<b>17</b>	<b>46</b>	<b>113</b>

Table 8.4 Private homes: property issues description summary (percentage of properties within each Class/category)

Voids in the CWI and or debris in the cavity (100%) in Class 1, Class 2 – Category A and Class 3 – Category A recommendations) (ref: figures 8.3 - 8.8). All properties within this category exhibited voids in the CWI and or debris in the cavity for all types of CWI systems installed (Foam, Bead and Fibre). The effects of the voids/ debris will be a higher probability of moisture tracking across the cavity compromising the inner walls.

Mortar erosion (33%) (ref: figures 8.9 & 8.10). As can be seen from the photographic evidence, poor making-good and maintenance are also relevant factors. Where the level of exposure to wind driven rain is higher and or because the maintenance of the external façade is poor, moisture is likely to transmit through to the cavity in a CWI installed property and cross the cavity with a high probability of affecting the inner wall.

Damaged/blocked guttering (22%) (ref: figures 8.11 & 8.12). When guttering is damaged or blocked with foliage growth that impedes the effective dispersal of rain water, then depending upon the property archetype, water will overflow the guttering and soak the outer wall element (soffit, fascia, brick or render) eventually causing damage to the external façade creating a higher probability of moisture exposure to the inner walls.

Non-compliant DPC level (25%) (ref: figures 8.13 & 8.14). As highlighted within the photographic evidence, the examples show the DPC level to be below the recommended 150mm for CWI to be installed. This non-conformity means the lower section of the walls is exposed to a higher volume of moisture.

Damaged render/brickwork (33%) (ref: figures 8.15 – 8.18). When render becomes damaged and open, wind driven rain will access behind the render and could eventually detach the render from the wall. Another likely consequence is that water behind the render bridges across the outer wall accessing the cavity in a higher volume with the possibility of compromising the inner walls. Where the brickwork is damaged or not adequately pointed with mortar this could result in the same outcome.

Damaged Verge boards (33%) (ref: figures 8.19 & 8.20). Poorly maintained verge boards and verge tiles have the potential to allow excess moisture to bridge across the brickwork into the cavity, possibly resulting in water compromising the inner walls.

Defective perimeter seals on doors and windows (50%) (ref: figures 8.21 & 8.22). As can be seen from the photographic evidence, the poorly maintained or damaged perimeter seal between the window/door frames and the wall will allow wind driven rain easier access to the cavity, with a higher probability of water bridging the cavity and compromising the inner walls.

Eaves blocked with loft insulation (22%) (ref: figure 8.23 & 8.24). Where eaves are blocked with insulation (this can be either loft insulation or CWI) the insulation will reduce the air flow into the loft space which will increase the risk of condensation on underside of the roof. Over time this will allow water droplets to fall onto the ceiling below compromising the boards and loft insulation. The moisture forming on the underside of the roof may also affect the rafters, joists and the electrical wiring in the roof.



Figure 8.3 Voids and debris in the fibre CWI



Figure 8.4 Voids and debris in the fibre CWI



Figure 8.5 Voids in the foam CWI



Figure 8.8 Voids and debris in the bead CWI



Figure 8.6 Voids and debris in the foam CWI



Figure 8.9 Mortar erosion



Figure 8.7 Voids in the bead CWI



Figure 8.10 Mortar erosion



Figure 8.11 Damaged/blocked guttering



Figure 8.14 Non-compliant DPC level (below 150mm)



Figure 8.12 Damaged/blocked guttering



Figure 8.15 Damaged render



Figure 8.13 Non-compliant DPC level (below 150mm)



Figure 8.16 Damaged render





Figure 8.17 Damaged render



Figure 8.20 Damaged verge board



Figure 8.18 Damaged render



Figure 8.21 Defective perimeter seal (door)



Figure 8.19 Damaged verge board



Figure 8.22 Defective perimeter seal (window)





Figure 8.23 Eaves blocked with loft insulation



Figure 8.24 Eaves blocked with loft insulation

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## 9. Conclusions and recommendations

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### 9.1. Social housing: summary of research outcomes

Of NIHE's social housing stock surveyed, 63% had CWI installations that were non-compliant with industry standards and the system Agrément Certificate.

The remaining 37% had CWI installations that, based on the assessment methodology, were discovered to be compliant with industry standards and the system Agrément Certificate.

Of NIHE's social housing stock surveyed, 1% have a building fabric that is actively deteriorating and requires remediation accompanied by a CWI installation that does not comply with industry standards and the system Agrément Certificate and also requires remediation.

Of the total social housing stock surveyed, 84% were not adequately maintained and were showing differing levels of stress to the building fabric.

Defect-free properties constituted 16% of the total social housing stock: their CWI installations were compliant with industry standards and the CWI system Agrément Certificate, their building fabric showed no signs of stress, and no significant maintenance-related defects were identified on the external façade of the dwellings.

Of the total social housing stock surveyed, 1% were actively deteriorating and need remediation; 32% had compromised building fabric, situation was stable but still needing remediation; and 51% had minimal building fabric stress with no serious underlying causes but requiring remediation work as part of a normal housing maintenance plan.

#### 9.1.1 Conclusions

The high incidence and nature of the non-compliant CWI installations identified appear to reflect installation practices which do not adhere to industry standards and the CWI systems Agrément Certificate. The most common defects identified are voids in the CWI fill and debris in the cavity.

Additionally, there is also evidence of properties failing to be maintained adequately following the installation of CWI, with the outcomes ranging from the insulation benefits of the installation not being achieved through to significant property deterioration.

#### 9.1.2 Recommendations

##### Remediation costs

Where there is sufficient evidence that a CWI installation has not been completed in accordance with industry standards and with the system Agrément Certificate, we recommend that the NIHE should seek remediation or recompense for the costs of the original CWI installation and subsequent property damage from the installer or where no longer trading, the guarantee provider.

##### Monitoring

A system for monitoring and checking the accurate completion of remediation works arising should be set up and overseen by an independent monitoring group. This can be done by the NIHE or sub-contracted to an external supplier who can demonstrate the required competency in this area. Rigorous monitoring will ensure that remediation work is carried out to the correct standard. As well as knowledge of general building maintenance issues, the monitoring group would need to have specialist CWI knowledge (i.e. extraction and cavity cleaning) and be able to assess the suitability or otherwise of properties for cavity wall re-insulation works using the same property survey methodology adopted in this research.

##### Prioritise Class 1 remediation

Remediation of Class 1 Recommendation social housing properties (9 in total) should be top priority. These are the properties where the CWI installation is non-compliant with industry standards and the CWI system Agrément Certificate, and both the exterior and interior building fabric are actively deteriorating because non-compliant CWI has been compromised.

Before Class 1 Recommendation remediation takes place, it would be prudent to consider social housing stock that adjoins the Class 1 properties. If these properties have CWI, it may also be non-compliant and the external façade may require some form of remediation. In the interests of efficiency, homes that neighbour Class 1 Recommendation properties should be assessed and, subject to their condition, remediated at the same time as Class 1 Recommendation properties. Applying remediation across groups of neighbouring homes, rather than pursuing one-off responses, would likely prove cost-effective as some remediation could be undertaken as part of a routine maintenance programme.

CIT therefore recommends that:

- Assessments are carried out on Class 1 recommendation neighbouring properties using the same IPP-approved survey methodology that underpinned this research. This is of comparable priority to the Class 1 remediation programme and should be seen as an integral part of it.
- A strategy should be drawn up for carrying out these new property surveys on both an estate and regional basis.
- Class 1 remediation should be integrated into the NIHE's existing property maintenance programme as far as practicable. This is because a number of the defects identified in the Class 1 properties are related to external façade maintenance.

### **Class 2 and Class 3 dwelling remediation**

Class 2 and Class 3 recommendation properties (689 in total) require remediation work which can be carried out as part of a normal planned maintenance and repair programme. However, the greater damage evident in the building fabric of the 266 Class 2 recommendation properties dictates that they receive a higher priority in that programme.

CIT recommends that:

- Before remediation work on Class 2 and Class 3 recommendation properties begins, assessments should be carried out on Class 2's and Class 3 recommendation adjoining properties – for the same reasons as with Class 1 properties, detailed above. This is of comparable priority to the Class 2 and Class 3 remediation programmes and should be seen as an integral part of them, for the same reasons.
- A strategy should be drawn up for carrying out these new assessments on both an estate and regional basis.
- Class 2 and Class 3 remediation should be integrated into the NIHE's existing property maintenance programme as far as practicable. This is because a number of the defects identified in these properties are related to external façade maintenance issues.
- The system for monitoring and checking the accuracy and compliance of Class 1 remediation works should extend to cover the remediation work for Class 2 and Class 3 – for the same quality and compliance reasons.

### **Training NIHE employees**

In addition to the technical class-room and on-site training CIT provided to 30 NIHE employees, NIHE employees involved in delivering CWI installations and housing maintenance programmes should receive ongoing training. They should have access to appropriate expertise when

assessing the suitability of properties proposed for CWI installations and be able to assess the property fabric and identify defects on the external façade. They should also demonstrate the required competence to assess the compliance and performance of installations and have an understanding of the relevant industry standards and building regulations.

### **Installation overview**

To ensure that remediation and new CWI installation work is carried out to the correct standard, all current and future CWI wall installation programmes should be closely overseen and monitored by the NIHE.

It should be carried out in the following way:

- All properties proposed to receive new CWI installations must be independently verified through a valid and recognised industry process before installations take place.
- Quality assurance assessments of CWI installations should be conducted during and after installation.
- The NIHE should conduct appropriate reviews of the performance of organisations responsible for delivering CWI installations with a specific focus on data gathered on the quality assurance and compliance of CWI installations.

### **Competency and compliance system**

To ensure the required CWI installation standards are met, the NIHE should set up a new competency and compliance system that any entity responsible for delivering CWI installations must adhere to. This regime would make it mandatory for delivering CWI installations to undertake relevant technical training and pass ongoing competency assessments approved by the NIHE.

### **Advice for residents**

Residents who have CWI installed should be given guidance on how to both maintain and manage their properties following installation and also have access to experts who can provide assistance with any matters relevant to this area. Additionally, we recommend that NIHE put in place a 'residents' voice' Scheme that overtly (or in confidence) allows home dwellers to raise concerns about the condition or effects of CWI in their homes.

### **Regular stock surveys**

Housing stock should be inspected at regular intervals to gauge the condition of the external façade and performance of CWI installations. By inspecting a selected, representative range of homes, the NIHE could detect problems that have the ability to compromise CWI installations and require remediation. The inspection regime methodology should be modelled on that delivered for this research.

### Contracts and guarantees

The NIHE should review the suitability of installation guarantees issued for CWI installations to its housing stock. The review should assess the scope of the guarantees and, equally importantly, the full range of obligations they impose on the NIHE to maintain their properties to ensure they remain valid. Guarantees should be insurance-backed to ensure good governance and oversight.

The NIHE should maintain an ongoing assessment of its CWI installation contracts to ensure their technical specifications and contractual requirements are in line with industry standards and best practice.

The NIHE should maintain adequate records of all future CWI remediation and installation works undertaken to their housing stock (on a per property basis) on an asset management database that is accessible to all staff members responsible for overseeing housing maintenance programmes

## 9.2. Private homes: summary of research outcomes

Of the private homes surveyed, 59% showed evidence of issues relating to CWI or the condition of the external façade.

The other 41% of surveyed private homes were in an acceptable condition with no CWI or property fabric defects (No Class).

Only one private home was identified where the building fabric condition was actively deteriorating and remedial works is needed (Class 1).

Of the private homes surveyed, 15% displayed compromised but stable building fabric and remediation work is required (Class 2).

Of the private homes surveyed, 84% show evidence of minimal building fabric stress or no stress at all (Class 3 and No Class).

The proportion of private No Class homes (41%) is almost treble that of No Class homes (15%) found in the social housing survey.

For properties surveyed that fell into Class 2 and Class 3 recommendations, 62% of CWI installations were discovered to be non-compliant with industry standards and the CWI system Agrément Certificate. This finding is very similar to the outcome obtained in social housing, where 63% of the properties were found with CWI issues.

### 9.2.1 Conclusions

It is notable that the proportion of private No Class homes (41%) is larger than that of social housing No Class homes (15%).

There was also a marked contrast when it came to homes that had CWI installations that were non-compliant with industry standards: 35% of private sector housing compared to 63% of public sector housing.

The high incidence and the nature of the defective CWI installations identified is the result of installation practices which do not adhere to industry standards. The most common defects identified were voids in the CWI fill, debris in the cavity and failure to achieve the correct insulation material density from the injection process.

### 9.2.2 Recommendations

#### Remediation costs

Where there is sufficient evidence that a CWI installation has not been completed in accordance with industry standards and not compliant with the system Agrément Certificate, we recommend that homeowners should firstly contact their CWI installer but if they are no longer trading then the CWI installation guarantee supplier to relay their concerns. It is the responsibility of the guarantee provider to assess the property and propose adequate resolutions. In the event that a guarantee was not issued for the original CWI installation we recommend that homeowners contact the organisation responsible for the CWI installation and request for them to assess the property and propose adequate resolutions. If this cannot be achieved to the homeowner's satisfaction, they may then need to consider an alternative form of action to seek recompense for the costs of the original CWI installation and subsequent property damage.

#### Property maintenance

Homeowners should arrange for their property to be assessed at regular intervals to gauge the condition of the external façade. This can be done either by a homeowner if they have the required knowledge or by appointing an independent expert. For the reasons outlined within this report it is imperative that properties are adequately maintained to ensure that CWI installations deliver their full benefits.

#### Guarantees

Prior to proceeding with CWI installation, homeowners should always review and understand the guarantee proposed to be issued for the CWI installation. They should assess the scope of the guarantee and, equally importantly, the full range of obligations they impose on the homeowner to maintain their properties to ensure they remain valid.

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## 10. Appendix

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### 10.1. Glossary

<b>BBA.</b> . . . . .	<b>British Board of Agrément</b>
<b>BRE.</b> . . . . .	<b>Building Research Establishment</b>
<b>CIT</b> . . . . .	<b>Consultancy Investigation and Training</b>
<b>CITB</b> . . . . .	<b>Construction Industry Training Board</b>
<b>CXBC</b> . . . . .	<b>Chief Executive’s Business Committee</b>
<b>DFC</b> . . . . .	<b>Department for Communities</b>
<b>DSD</b> . . . . .	<b>Department for Social Development</b>
<b>IPP</b> . . . . .	<b>Insulation Performance Panel</b>
<b>NIHE</b> . . . . .	<b>Northern Ireland Housing Executive</b>
<b>NIHCS</b> . . . . .	<b>Northern Ireland House Condition Survey</b>
<b>SERC.</b> . . . . .	<b>South Eastern Regional College</b>

### 10.2. Survey template

Client: Northern Ireland Housing Executive (NIHE)
---

Investigation No:	BBACIT-
Customers name:	
Property Type:	
Inspection Date:	Inspection date
Address inspected:	
Inspector’s name:	

Rationale for class 1-3 recommendation:
---



1	Front Elevation	Comment/Condition	Photo i.d no
1.1	Roof condition	Good condition <input type="checkbox"/> N/A <input type="checkbox"/> Damage to ridge tiles (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to roof tiles (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to chimney (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to lead work (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to roof Valley (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to Verge board (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Additional Comments:	
1.2	Guttering	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1, <input type="checkbox"/> 2, <input type="checkbox"/> 3 <input type="checkbox"/> Additional Comments:	
1.3	Soffit	Good condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Insulation in soffit (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Additional Comments:	
1.4	Downpipe	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Internal <input type="checkbox"/> Leaking (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Additional Comments:	
1.5	Product installed	None <input type="checkbox"/> Fibre <input type="checkbox"/> Bead <input type="checkbox"/> Foam <input type="checkbox"/> Board <input type="checkbox"/> Additional Comments:	

1.6	Combustion Ventilation	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Required <input type="checkbox"/> Obstructed (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
1.7	Brick/Mortar Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
1.8	Render Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Blown (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
1.9	Window Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Poor Seal between frame and wall (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
1.10	Door Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Poor seal between frame and Wall (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
1.11	DPC	Compliant with Industry BPG <input type="checkbox"/> N/A <input type="checkbox"/> Unable to confirm existing <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Not in-place <input type="checkbox"/> Below required Building Regs level <input type="checkbox"/> Additional Comments:	

1.12	Drilling pattern	Compliant with BBA Cert <input type="checkbox"/> Not installed <input type="checkbox"/> Section not drilled <input type="checkbox"/> Pattern stretched <input type="checkbox"/> Hole missing (utility) <input type="checkbox"/> Additional Comments:	
1.13	Cavity Width	Scope hole 1, Scope hole 2, Scope hole 3, Additional Comments:	
1.14	Adequacy of fill	Compliant with BBA Cert <input type="checkbox"/> N/A <input type="checkbox"/> Not installed <input type="checkbox"/> Scope hole 1, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Scope hole 2, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Scope hole 3, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Additional Comments:	
1.15	Ground Orientation	Level or Sloping away from the wall <input type="checkbox"/> Sloping towards the wall <input type="checkbox"/> Additional Comments:	
1.16	Exposure level	Very Severe <input type="checkbox"/> Severe <input type="checkbox"/> Moderate <input type="checkbox"/> Sheltered <input type="checkbox"/> Additional Comments:	

2	Side Elevation Right	Comment/Condition	Photo i.d no
2.1	Roof condition	1. Good condition <input type="checkbox"/> N/A <input type="checkbox"/> 2. Damage to ridge tiles (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 3. Damage to roof tiles (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 4. Damage to chimney (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 5. Damage to lead work (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 6. Damage to roof Valley (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 7. Damage to Verge board (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.2	Guttering	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.3	Soffit	Good condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Insulation in soffit (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.4	Downpipe	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Internal <input type="checkbox"/> Leaking (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.5	Product installed	None <input type="checkbox"/> Fibre <input type="checkbox"/> Bead <input type="checkbox"/> Foam <input type="checkbox"/> Board <input type="checkbox"/> Additional Comments:	

2.6	Combustion Ventilation	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Required <input type="checkbox"/> Obstructed (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.7	Brick/Mortar Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.8	Render Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Blown (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.9	Window Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Poor Seal between frame and wall (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.10	Door Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Poor seal between frame and Wall (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
2.11	DPC	Compliant with Industry BPG <input type="checkbox"/> N/A <input type="checkbox"/> Unable to confirm existing <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Not in-place <input type="checkbox"/> Below required Building Regs level <input type="checkbox"/> Additional Comments:	



2.12	Drilling pattern	Compliant with BBA Cert <input type="checkbox"/> Not installed <input type="checkbox"/> Section not drilled <input type="checkbox"/> Pattern stretched <input type="checkbox"/> Hole missing (utility) <input type="checkbox"/> Additional Comments:	
2.13	Cavity Width	Scope hole 1, Scope hole 2, Scope hole 3, Additional Comments:	
2.14	Adequacy of fill	Compliant with BBA Cert <input type="checkbox"/> N/A <input type="checkbox"/> Not installed <input type="checkbox"/> Scope hole 1, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Scope hole 2, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Scope hole 3, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Additional Comments:	
2.15	Ground Orientation	Level or Sloping away from the wall <input type="checkbox"/> Sloping towards the wall <input type="checkbox"/> Additional Comments:	
2.16	Exposure level	Very Severe <input type="checkbox"/> Severe <input type="checkbox"/> Moderate <input type="checkbox"/> Sheltered <input type="checkbox"/> Additional Comments:	

3	Side Elevation Left	Comment/Condition	Photo i.d no
3.1	Roof condition	1. Good condition <input type="checkbox"/> N/A <input type="checkbox"/> 2. Damage to ridge tiles (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 3. Damage to roof tiles (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 4. Damage to chimney (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 5. Damage to lead work (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 6. Damage to roof Valley (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) 7. Damage to Verge board (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.2	Guttering	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.3	Soffit	Good condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Insulation in soffit (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.4	Downpipe	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Internal <input type="checkbox"/> Leaking (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.5	Product installed	None <input type="checkbox"/> Fibre <input type="checkbox"/> Bead <input type="checkbox"/> Foam <input type="checkbox"/> Board <input type="checkbox"/> Additional Comments:	

3.6	Combustion Ventilation	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Required <input type="checkbox"/> Obstructed (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.7	Brick/Mortar Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.8	Render Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Blown (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.9	Window Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Poor Seal between frame and wall (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.10	Door Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Poor seal between frame and Wall (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
3.11	DPC	Compliant with Industry BPG <input type="checkbox"/> N/A <input type="checkbox"/> Unable to confirm existing <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Not in-place <input type="checkbox"/> Below required Building Regs level <input type="checkbox"/> Additional Comments:	

3.12	Drilling pattern	Compliant with BBA Cert <input type="checkbox"/> Not installed <input type="checkbox"/> Section not drilled <input type="checkbox"/> Pattern stretched <input type="checkbox"/> Hole missing (utility) <input type="checkbox"/> Additional Comments:	
3.13	Cavity Width	Scope hole 1, Scope hole 2, Scope hole 3, Additional Comments:	
3.14	Adequacy of fill	Compliant with BBA Cert <input type="checkbox"/> N/A <input type="checkbox"/> Not installed <input type="checkbox"/> Scope hole 1, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Scope hole 2, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Scope hole 3, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Additional Comments:	
3.15	Ground Orientation	Level or Sloping away from the wall <input type="checkbox"/> Sloping towards the wall <input type="checkbox"/> Additional Comments:	
3.16	Exposure level	Very Severe <input type="checkbox"/> Severe <input type="checkbox"/> Moderate <input type="checkbox"/> Sheltered <input type="checkbox"/> Additional Comments:	

4	Rear Elevation	Comment/Condition	Photo i.d no
4.1	Roof condition	Good condition <input type="checkbox"/> N/A <input type="checkbox"/> Damage to ridge tiles (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to roof tiles (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to chimney (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to lead work (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to roof Valley (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damage to Verge board (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Additional Comments:	
4.2	Guttering	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1, <input type="checkbox"/> 2, <input type="checkbox"/> 3 <input type="checkbox"/> Additional Comments:	
4.3	Soffit	Good condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Insulation in soffit (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Additional Comments:	
4.4	Downpipe	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Internal <input type="checkbox"/> Leaking (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Additional Comments:	
4.5	Product installed	None <input type="checkbox"/> Fibre <input type="checkbox"/> Bead <input type="checkbox"/> Foam <input type="checkbox"/> Board <input type="checkbox"/> Additional Comments:	



4.6	Combustion Ventilation	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Required <input type="checkbox"/> Obstructed (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
4.7	Brick/Mortar Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
4.8	Render Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Blown (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
4.9	Window Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Poor Seal between frame and wall (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
4.10	Door Condition	Good Condition <input type="checkbox"/> N/A <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Poor seal between frame and Wall (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Additional Comments:	
4.11	DPC	Compliant with Industry BPG <input type="checkbox"/> N/A <input type="checkbox"/> Unable to confirm existing <input type="checkbox"/> Damaged (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Not in-place <input type="checkbox"/> Below required Building Regs level <input type="checkbox"/> Additional Comments:	

4.12	Drilling pattern	Compliant with BBA Cert <input type="checkbox"/> Not installed <input type="checkbox"/> Section not drilled <input type="checkbox"/> Pattern stretched <input type="checkbox"/> Hole missing (utility) <input type="checkbox"/> Additional Comments:	
4.13	Cavity Width	Scope hole 1, Scope hole 2, Scope hole 3, Additional Comments:	
4.14	Adequacy of fill	Compliant with BBA Cert <input type="checkbox"/> N/A <input type="checkbox"/> Not installed <input type="checkbox"/> Scope hole 1, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Scope hole 2, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Scope hole 3, Void, <input type="checkbox"/> light fill, <input type="checkbox"/> debris in Cavity <input type="checkbox"/> Additional Comments:	
4.15	Ground Orientation	Level or Sloping away from the wall <input type="checkbox"/> Sloping towards the wall <input type="checkbox"/> Additional Comments:	
4.16	Exposure level	Very Severe <input type="checkbox"/> Severe <input type="checkbox"/> Moderate <input type="checkbox"/> Sheltered <input type="checkbox"/> Additional Comments:	

5	Internal Inspection	Comment/Condition	Photo i.d no
5.1	Combustion Ventilation	Suitable <input type="checkbox"/> N/A <input type="checkbox"/> Not in-place <input type="checkbox"/> Wrong size <input type="checkbox"/> Blocked <input type="checkbox"/> Additional Comments:	
5.2	Condensation Issues	None identified <input type="checkbox"/> Condensation identified (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Occupant concerned, but no evidence <input type="checkbox"/> Protimeter image <input type="checkbox"/> Additional Comments:	
5.3	Damp Issues	None identified <input type="checkbox"/> Damp identified (1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> ) Protimeter image <input type="checkbox"/> Occupant concerned, but no evidence <input type="checkbox"/> Additional Comments:	
6	Loft Space	Comment/Condition	Photo i.d no
6.1	Eaves	Clear <input type="checkbox"/> N/A <input type="checkbox"/> Blocked <input type="checkbox"/> Additional Comments:	
6.2	Gable wall Suitability	Suitable <input type="checkbox"/> N/A <input type="checkbox"/> Gaps in wall <input type="checkbox"/> Additional Comments:	
7	Property Suitability		
7.1	GUARA	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Additional Comments:

**Class legend:**

Class 1: building fabric condition is actively deteriorating, remedial works needed.

Class 2: building fabric has been compromised but situation stable, remediation works still required.

**Category A**

Class 2: building fabric has been compromised but situation stable, remediation works still required.

**Category B**

Class 3: evidence of minimal building fabric stress, with no serious underlying causes, remediation can be undertaken as part of a normal maintenance plan.

**Category A**

Class 3: evidence of minimal building fabric stress, with no serious underlying causes, remediation can be undertaken as part of a normal maintenance plan.

**Category B**

**Conclusion:**

**Recommendations:**

**Experience and Competences**

My name is \_\_\_\_\_. I am employed by the BBACIT as a Technical Assessor.

I have inspected in the region of \_\_\_\_\_ installations both work in-progress and post installation a year as part of my duties with BBACIT covering Cavity Wall Insulation, Loft Insulation, internal and External Solid Wall Insulation, Pitched Roof Insulation, Flat Roof Insulation, Under Floor Insulation,

I have worked in the construction industry for the past \_\_\_\_\_ years.

If you would like to discuss any part of this report then please do not hesitate to contact me on the number and email below.

Mr Geoff Chambers

Head of Investigation & Technical Excellence, CIT

[gchambers@bbacit.co.uk](mailto:gchambers@bbacit.co.uk) Office: 02920 100810

### 10.3. Survey outcomes by property

#### NIHE's social housing stock surveys

AreaDM	YOC	Class Recommendation	Property Type
CAUSEWAY AREA	1945 - 1960	Class 1	House - Mid Terrace
EAST AREA	1945 - 1960	Class 1	Flat - Ground Floor
MID ULSTER AREA	1961 - 1980	Class 1	Flat - Ground Floor
MID ULSTER AREA	1961 - 1980	Class 1	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 1	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 1	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 1	Flat - Ground Floor
SOUTH WEST AREA	1961 - 1980	Class 1	House - Semi Detached
SOUTH WEST AREA	1961 - 1980	Class 1	House - End Terrace
CAUSEWAY AREA	1945 - 1960	Class 2 - Cat A	Bungalow - End Terrace
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Semi Detached
CAUSEWAY AREA	1945 - 1960	Class 2 - Cat A	Bungalow - Semi Detached
CAUSEWAY AREA	1945 - 1960	Class 2 - Cat A	Bungalow - Semi Detached
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1945 - 1960	Class 2 - Cat A	House - Semi detached
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
CAUSEWAY AREA	1945 - 1960	Class 2 - Cat A	Bungalow - Semi Detached
EAST AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
EAST AREA	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
EAST AREA	1945 - 1960	Class 2 - Cat A	Bungalow - Mid Terrace
EAST AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
EAST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
EAST AREA	1945 - 1960	Class 2 - Cat A	Bungalow - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	Post 1980	Class 2 - Cat A	Bungalow - Mid Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 2 - Cat A	House - End Terrace



AreaDM	YOC	Class Recommendation	Property Type
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 2 - Cat A	House - End Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat A	House - Semi Detached
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 2 - Cat A	House - End Terrace
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
MID ULSTER AREA	1945 - 1960	Class 2 - Cat A	Bungalow - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH BELFAST	Post 1980	Class 2 - Cat A	Bungalow - Mid Terrace
NORTH BELFAST	Post 1980	Class 2 - Cat A	House - End Terrace
NORTH BELFAST	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	Pre 1945	Class 2 - Cat A	House - Semi Detached
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Semi Detached
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1945 - 1960	Class 2 - Cat A	House - Semi Detached
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace

AreaDM	YOC	Class Recommendation	Property Type
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1945 - 1960	Class 2 - Cat A	Flat - First Floor
NORTH DOWN AND ARDS AREA	1945 - 1960	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Semi Detached
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	Flat - First Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	Post 1980	Class 2 - Cat A	Bungalow - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	House - End Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	Flat - Ground floor
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	Post 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 2 - Cat A	House - Mid Terrace

AreaDM	YOC	Class Recommendation	Property Type
SOUTH AND EAST BELFAST	Pre 1945	Class 2 - Cat A	House - Semi Detached
SOUTH AND EAST BELFAST	Pre 1945	Class 2 - Cat A	House - Semi Detached
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	Flat - First Floor
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	Bungalow - Semi Detached
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat A	House - End Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	Post 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	Post 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
SOUTH ANTRIM AREA	1945 - 1960	Class 2 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground floor
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH AREA	1945 - 1960	Class 2 - Cat A	House - Semi Detached
SOUTH AREA	1945 - 1960	Class 2 - Cat A	Bungalow - Semi Detached
SOUTH AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Semi Detached
SOUTH AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace

AreaDM	YOC	Class Recommendation	Property Type
SOUTH AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AREA	1945 - 1960	Class 2 - Cat A	Flat - First Floor
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	Post 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat A	House - Semi Detached
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH WEST AREA	1945 - 1960	Class 2 - Cat A	House - End Terrace
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
SOUTH WEST AREA	Post 1980	Class 2 - Cat A	Bungalow - Mid Terrace
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
SOUTH WEST AREA	Post 1980	Class 2 - Cat A	House - End Terrace
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace

AreaDM	YOC	Class Recommendation	Property Type
SOUTH WEST AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
WEST AREA	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
WEST AREA	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	House - Semi Detached
WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	Flat - Ground Floor
WEST AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	House - End Terrace
WEST AREA	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
WEST AREA	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
WEST AREA	1945 - 1960	Class 2 - Cat A	Bungalow - Semi detached
WEST AREA	Post 1980	Class 2 - Cat A	House - Mid Terrace
WEST BELFAST	1961 - 1980	Class 2 - Cat A	Bungalow - End Terrace
WEST BELFAST	1961 - 1980	Class 2 - Cat A	House - Mid Terrace
WEST BELFAST	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
WEST BELFAST	Post 1980	Class 2 - Cat A	Bungalow - End Terrace
WEST BELFAST	1961 - 1980	Class 2 - Cat A	Bungalow - Mid Terrace
WEST BELFAST	Post 1980	Class 2 - Cat A	House - End Terrace
WEST BELFAST	1945 - 1960	Class 2 - Cat A	House - Mid Terrace
WEST BELFAST	Post 1980	Class 2 - Cat A	Bungalow - End Terrace
WEST BELFAST	Post 1980	Class 2 - Cat A	Bungalow - Semi Detached
WEST BELFAST	Post 1980	Class 2 - Cat A	Bungalow - Semi Detached
WEST BELFAST	Post 1980	Class 2 - Cat A	House - End Terrace
WEST BELFAST	Post 1980	Class 2 - Cat A	Flat - Ground Floor
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 2 - Cat B	Bungalow - Semi Detached
EAST AREA	1945 - 1960	Class 2 - Cat B	Flat - First Floor
EAST AREA	1961 - 1980	Class 2 - Cat B	Bungalow - End Terrace



AreaDM	YOC	Class Recommendation	Property Type
EAST AREA	1961 - 1980	Class 2 - Cat B	Bungalow - Mid Terrace
EAST AREA	1945 - 1960	Class 2 - Cat B	House - End Terrace
EAST AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat B	House - End Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 2 - Cat B	Bungalow - End Terrace
MID ULSTER AREA	1945 - 1960	Class 2 - Cat B	House - End Terrace
NORTH BELFAST	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
NORTH BELFAST	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
NORTH BELFAST	1961 - 1980	Class 2 - Cat B	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	House - Detached
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	Bungalow - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	Bungalow - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	House - End Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	Flat - First Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat B	Flat - Second Floor
SOUTH AND EAST BELFAST	Post 1980	Class 2 - Cat B	House - End Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 2 - Cat B	Flat - Ground Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat B	House - Semi Detached
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat B	Flat - First Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat B	House - End Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat B	Maisonette
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 2 - Cat B	House - Semi Detached
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
SOUTH AND EAST BELFAST	Pre 1945	Class 2 - Cat B	House - Mid Terrace

AreaDM	YOC	Class Recommendation	Property Type
SOUTH AND EAST BELFAST	1961 - 1980	Class 2 - Cat B	Maisonette - First Floor
SOUTH AND EAST BELFAST	Post 1980	Class 2 - Cat B	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat B	Flat - First Floor
SOUTH ANTRIM AREA	1945 - 1960	Class 2 - Cat B	House - End Terrace
SOUTH ANTRIM AREA	1945 - 1960	Class 2 - Cat B	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat B	Bungalow - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 2 - Cat B	House - End Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat B	House - End Terrace
SOUTH AREA	1961 - 1980	Class 2 - Cat B	Bungalow - Mid Terrace
SOUTH AREA	1945 - 1960	Class 2 - Cat B	Flat - First Floor
SOUTH AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground floor
SOUTH AREA	1945 - 1960	Class 2 - Cat B	Bungalow - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat B	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat B	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
SOUTH DOWN AREA	1945 - 1960	Class 2 - Cat B	Bungalow - Semi Detached
SOUTH DOWN AREA	Post 1980	Class 2 - Cat B	Bungalow - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 2 - Cat B	Flat - Ground Floor
SOUTH WEST AREA	1945 - 1960	Class 2 - Cat B	Flat - Top Floor
SOUTH WEST AREA	Post 1980	Class 2 - Cat B	Bungalow - Semi Detached
WEST AREA	Post 1980	Class 2 - Cat B	Bungalow - End Terrace
WEST BELFAST	Post 1980	Class 2 - Cat B	Bungalow - Detached
WEST BELFAST	Post 1980	Class 2 - Cat B	House - Mid Terrace
WEST BELFAST	Post 1980	Class 2 - Cat B	House - End Terrace
WEST BELFAST	Post 1980	Class 2 - Cat B	House - Semi Detached
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - Semi Detached
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
CAUSEWAY AREA	Post 1980	Class 3 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
CAUSEWAY AREA	1945 - 1960	Class 3 - Cat A	House - End Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
CAUSEWAY AREA	1945 - 1960	Class 3 - Cat A	Bungalow - Semi Detached
CAUSEWAY AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace

AreaDM	YOC	Class Recommendation	Property Type
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
CAUSEWAY AREA	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
CAUSEWAY AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - Semi Detached
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
CAUSEWAY AREA	1945 - 1960	Class 3 - Cat A	Bungalow - Semi Detached
EAST AREA	Post 1980	Class 3 - Cat A	Flat - Ground Floor
EAST AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
EAST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
EAST AREA	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
EAST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
EAST AREA	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
EAST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached
EAST AREA	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
EAST AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
EAST AREA	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
EAST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached
EAST AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
EAST AREA	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
EAST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace

AreaDM	YOC	Class Recommendation	Property Type
EAST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
EAST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
EAST AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Semi Detached
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Flat - Top Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Semi Detached
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	House - End Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	House - End Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	Post 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	Post 1980	Class 3 - Cat A	House - End Terrace
LISBURN/CASTLEREAGH AREA	Post 1980	Class 3 - Cat A	House - Semi Detached
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Flat - Top Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	House - End Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Flat - First Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached

AreaDM	YOC	Class Recommendation	Property Type
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
MID ULSTER AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
MID ULSTER AREA	1945 - 1960	Class 3 - Cat A	Bungalow - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	House - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached
MID ULSTER AREA	Pre 1945	Class 3 - Cat A	Bungalow - Detached
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached
MID ULSTER AREA	1945 - 1960	Class 3 - Cat A	Bungalow - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
MID ULSTER AREA	1945 - 1960	Class 3 - Cat A	House - End Terrace
MID ULSTER AREA	Post 1980	Class 3 - Cat A	House - Mid Terrace
MID ULSTER AREA	Pre 1945	Class 3 - Cat A	House - Semi Detached
MID ULSTER AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
MID ULSTER AREA	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
MID ULSTER AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
NORTH BELFAST	Post 1980	Class 3 - Cat A	Bungalow - Mid Terrace
NORTH BELFAST	1961 - 1980	Class 3 - Cat A	House - Semi Detached
NORTH BELFAST	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
NORTH BELFAST	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor

AreaDM	YOC	Class Recommendation	Property Type
NORTH BELFAST	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
NORTH BELFAST	1945 - 1960	Class 3 - Cat A	House - End Terrace
NORTH BELFAST	1945 - 1960	Class 3 - Cat A	House - End Terrace
NORTH BELFAST	Post 1980	Class 3 - Cat A	House - End Terrace
NORTH BELFAST	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
NORTH BELFAST	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
NORTH BELFAST	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
NORTH BELFAST	1945 - 1960	Class 3 - Cat A	House - Semi Detached
NORTH BELFAST	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
NORTH BELFAST	1961 - 1980	Class 3 - Cat A	House - End Terrace
NORTH BELFAST	Pre 1945	Class 3 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
NORTH DOWN AND ARDS AREA	Post 1980	Class 3 - Cat A	House - Semi Detached
NORTH DOWN AND ARDS AREA	1945 - 1960	Class 3 - Cat A	Bungalow - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	Pre 1945	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat A	Bungalow - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat A	House - Semi Detached
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	Bungalow - Semi Detached
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached



AreaDM	YOC	Class Recommendation	Property Type
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat A	House - End Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	Maisonette
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat A	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH ANTRIM AREA	Post 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace

Area/DM	YOC	Class Recommendation	Property Type
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AREA	1945 - 1960	Class 3 - Cat A	House - End Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH AREA	1945 - 1960	Class 3 - Cat A	Bungalow - Semi Detached
SOUTH AREA	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
SOUTH AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH AREA	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - Semi Detached

AreaDM	YOC	Class Recommendation	Property Type
SOUTH DOWN AREA	1945 - 1960	Class 3 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
SOUTH DOWN AREA	1945 - 1960	Class 3 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH DOWN AREA	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - Semi Detached
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH DOWN AREA	Post 1980	Class 3 - Cat A	House - Semi Detached
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached
SOUTH WEST AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
SOUTH WEST AREA	Post 1980	Class 3 - Cat A	House - Semi Detached
SOUTH WEST AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH WEST AREA	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Semi Detached

AreaDM	YOC	Class Recommendation	Property Type
WEST AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
WEST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
WEST AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1945 - 1960	Class 3 - Cat A	House - Semi Detached
WEST AREA	1961 - 1980	Class 3 - Cat A	House - Semi Detached
WEST AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST AREA	1945 - 1960	Class 3 - Cat A	House - Mid Terrace
WEST AREA	Post 1980	Class 3 - Cat A	House - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	House - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat A	Bungalow - Mid Terrace
WEST AREA	1945 - 1960	Class 3 - Cat A	Bungalow - Semi Detached
WEST BELFAST	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST BELFAST	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST BELFAST	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	Bungalow - Mid Terrace
WEST BELFAST	1945 - 1960	Class 3 - Cat A	House - End Terrace
WEST BELFAST	Pre 1945	Class 3 - Cat A	House - End Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	Flat - Ground Floor
WEST BELFAST	Post 1980	Class 3 - Cat A	Bungalow - Mid Terrace
WEST BELFAST	1961 - 1980	Class 3 - Cat A	House - Mid Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
WEST BELFAST	Post 1980	Class 3 - Cat A	House - Semi Detached

AreaDM	YOC	Class Recommendation	Property Type
WEST BELFAST	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
WEST BELFAST	1961 - 1980	Class 3 - Cat A	Flat - Ground Floor
WEST BELFAST	Post 1980	Class 3 - Cat A	House - End Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	House - Mid Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	House - Mid Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	House - Mid Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	House - Mid Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	Bungalow - End Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	House - End Terrace
WEST BELFAST	Post 1980	Class 3 - Cat A	Flat - Ground Floor
WEST BELFAST	Post 1980	Class 3 - Cat A	Bungalow - Semi Detached
WEST BELFAST	1961 - 1980	Class 3 - Cat A	House - End Terrace
CAUSEWAY AREA	1945 - 1960	Class 3 - Cat B	Bungalow - Semi Detached
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat B	Bungalow - End Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat B	House - End Terrace
CAUSEWAY AREA	1961 - 1980	Class 3 - Cat B	House - End Terrace
EAST AREA	1945 - 1960	Class 3 - Cat B	House - Mid Terrace
EAST AREA	Post 1980	Class 3 - Cat B	Bungalow - Mid Terrace
EAST AREA	1961 - 1980	Class 3 - Cat B	House - End Terrace
EAST AREA	1961 - 1980	Class 3 - Cat B	Flat - Top Floor
EAST AREA	1961 - 1980	Class 3 - Cat B	House - End Terrace
EAST AREA	Post 1980	Class 3 - Cat B	Flat - First Floor
EAST AREA	Post 1980	Class 3 - Cat B	Flat - Ground Floor
EAST AREA	1961 - 1980	Class 3 - Cat B	Flat - First Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat B	Flat - Top Floor
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat B	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	1945 - 1960	Class 3 - Cat B	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	Post 1980	Class 3 - Cat B	Bungalow - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Mid Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Semi Detached
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Semi Detached
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat B	Bungalow - End Terrace
LISBURN/CASTLEREAGH AREA	Post 1980	Class 3 - Cat B	Bungalow - End Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
LISBURN/CASTLEREAGH AREA	Post 1980	Class 3 - Cat B	Bungalow - End Terrace

AreaDM	YOC	Class Recommendation	Property Type
MID ULSTER AREA	1945 - 1960	Class 3 - Cat B	Bungalow - Mid Terrace
NORTH BELFAST	1945 - 1960	Class 3 - Cat B	House - Semi Detached
NORTH BELFAST	Post 1980	Class 3 - Cat B	House - Mid Terrace
NORTH BELFAST	1961 - 1980	Class 3 - Cat B	Bungalow - Semi Detached
NORTH BELFAST	Pre 1945	Class 3 - Cat B	House - End Terrace
NORTH BELFAST	1945 - 1960	Class 3 - Cat B	House - End Terrace
NORTH BELFAST	1961 - 1980	Class 3 - Cat B	Flat - Top Floor
NORTH BELFAST	Post 1980	Class 3 - Cat B	House - Semi Detached
NORTH BELFAST	Post 1980	Class 3 - Cat B	House - Semi Detached
NORTH BELFAST	Post 1980	Class 3 - Cat B	Bungalow - Semi Detached
NORTH BELFAST	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
NORTH BELFAST	Pre 1945	Class 3 - Cat B	House - Mid Terrace
NORTH BELFAST	Post 1980	Class 3 - Cat B	House - Semi Detached
NORTH BELFAST	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
NORTH BELFAST	Pre 1945	Class 3 - Cat B	House - Mid Terrace
NORTH BELFAST	Post 1980	Class 3 - Cat B	Bungalow - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Semi Detached
NORTH DOWN AND ARDS AREA	Post 1980	Class 3 - Cat B	Bungalow - Semi Detached
NORTH DOWN AND ARDS AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat B	House - End Terrace
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat B	House - End Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat B	Flat - First Floor
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat B	Flat - Top Floor
SOUTH AND EAST BELFAST	1945 - 1960	Class 3 - Cat B	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat B	Bungalow - End Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat B	Bungalow - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat B	Bungalow - Mid Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat B	House - End Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat B	House - End Terrace
SOUTH AND EAST BELFAST	Post 1980	Class 3 - Cat B	House - Mid Terrace
SOUTH AND EAST BELFAST	Pre 1945	Class 3 - Cat B	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	Class 3 - Cat B	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	House - End Terrace



AreaDM	YOC	Class Recommendation	Property Type
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat B	Flat - First Floor
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat B	Flat - Top Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	Flat - Top Floor
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat B	Flat - First Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	Flat - Ground Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat B	Flat - Top Floor
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat B	Flat - Ground Floor
SOUTH ANTRIM AREA	1945 - 1960	Class 3 - Cat B	Flat - Top Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	Flat - First Floor
SOUTH ANTRIM AREA	1961 - 1980	Class 3 - Cat B	Bungalow - End Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat B	Flat - Top Floor
SOUTH AREA	1961 - 1980	Class 3 - Cat B	Flat - First Floor
SOUTH AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Semi Detached
SOUTH AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	Class 3 - Cat B	Bungalow - Semi Detached
SOUTH AREA	1961 - 1980	Class 3 - Cat B	Flat - Ground floor
SOUTH AREA	Post 1980	Class 3 - Cat B	House - Semi Detached
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat B	Flat - First Floor
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat B	Bungalow - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat B	House - Semi Detached
SOUTH DOWN AREA	Post 1980	Class 3 - Cat B	Bungalow - End Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat B	House - Mid Terrace
SOUTH DOWN AREA	Post 1980	Class 3 - Cat B	Flat - First Floor
SOUTH DOWN AREA	Post 1980	Class 3 - Cat B	Bungalow - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat B	Flat - First Floor
SOUTH DOWN AREA	1945 - 1960	Class 3 - Cat B	House - Semi Detached
SOUTH DOWN AREA	1961 - 1980	Class 3 - Cat B	Bungalow - End Terrace
SOUTH WEST AREA	1961 - 1980	Class 3 - Cat B	Flat - Top Floor
SOUTH WEST AREA	Post 1980	Class 3 - Cat B	Bungalow - Semi Detached
SOUTH WEST AREA	Pre 1945	Class 3 - Cat B	House - Mid Terrace
WEST AREA	Post 1980	Class 3 - Cat B	House - End Terrace

AreaDM	YOC	Class Recommendation	Property Type
WEST AREA	Post 1980	Class 3 - Cat B	Bungalow - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat B	House - Semi Detached
WEST AREA	1961 - 1980	Class 3 - Cat B	House - Semi Detached
WEST AREA	1961 - 1980	Class 3 - Cat B	House - Semi Detached
WEST AREA	1961 - 1980	Class 3 - Cat B	Bungalow - End Terrace
WEST AREA	1961 - 1980	Class 3 - Cat B	Flat - Ground Floor
WEST AREA	Post 1980	Class 3 - Cat B	House - Mid Terrace
WEST AREA	Post 1980	Class 3 - Cat B	Bungalow - End Terrace
WEST BELFAST	1961 - 1980	Class 3 - Cat B	Bungalow - Semi Detached
WEST BELFAST	1961 - 1980	Class 3 - Cat B	Bungalow - Mid Terrace
WEST BELFAST	1961 - 1980	Class 3 - Cat B	Bungalow - Semi Detached
WEST BELFAST	1961 - 1980	Class 3 - Cat B	Flat - First Floor
WEST BELFAST	Post 1980	Class 3 - Cat B	House - Mid Terrace
WEST BELFAST	Post 1980	Class 3 - Cat B	House - Semi Detached
WEST BELFAST	Post 1980	Class 3 - Cat B	House - Semi Detached
WEST BELFAST	Post 1980	Class 3 - Cat B	House - Semi Detached
WEST BELFAST	Post 1980	Class 3 - Cat B	House - Semi Detached
CAUSEWAY AREA	Pre 1945	No Class	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	No Class	Bungalow - Mid Terrace
CAUSEWAY AREA	1961 - 1980	No Class	House - Mid Terrace
CAUSEWAY AREA	1961 - 1980	No Class	House - Mid Terrace
CAUSEWAY AREA	Post 1980	No Class	Bungalow - Semi Detached
CAUSEWAY AREA	1961 - 1980	No Class	Flat - First Floor
EAST AREA	1961 - 1980	No Class	House - Mid Terrace
EAST AREA	Post 1980	No Class	House - Mid Terrace
EAST AREA	1945 - 1960	No Class	Bungalow - End Terrace
EAST AREA	Post 1980	No Class	Bungalow - End Terrace
EAST AREA	1945 - 1960	No Class	House - Mid Terrace
EAST AREA	1945 - 1960	No Class	House - Mid Terrace
EAST AREA	1961 - 1980	No Class	Bungalow - End Terrace
LISBURN/CASTLEREAGH AREA	1961 - 1980	No Class	Flat - First Floor
LISBURN/CASTLEREAGH AREA	Post 1980	No Class	Flat - Ground Floor
LISBURN/CASTLEREAGH AREA	Post 1980	No Class	Bungalow - Semi Detached
LISBURN/CASTLEREAGH AREA	1945 - 1960	No Class	Flat - First Floor
LISBURN/CASTLEREAGH AREA	Post 1980	No Class	Bungalow - End Terrace
LISBURN/CASTLEREAGH AREA	1945 - 1960	No Class	Flat - First Floor

AreaDM	YOC	Class Recommendation	Property Type
LISBURN/CASTLEREAGH AREA	1961 - 1980	No Class	Flat - Top Floor
LISBURN/CASTLEREAGH AREA	1945 - 1960	No Class	Flat - First Floor
MID ULSTER AREA	Post 1980	No Class	Bungalow - End Terrace
MID ULSTER AREA	1945 - 1960	No Class	House - Mid Terrace
MID ULSTER AREA	1961 - 1980	No Class	Bungalow - Semi Detached
NORTH BELFAST	Post 1980	No Class	House - End Terrace
NORTH BELFAST	1945 - 1960	No Class	Flat - First Floor
NORTH BELFAST	Post 1980	No Class	House - Mid Terrace
NORTH BELFAST	Post 1980	No Class	House - Mid Terrace
NORTH BELFAST	Post 1980	No Class	House - Semi Detached
NORTH BELFAST	Post 1980	No Class	House - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	No Class	House - End Terrace
NORTH DOWN AND ARDS AREA	Post 1980	No Class	Bungalow - Mid Terrace
NORTH DOWN AND ARDS AREA	1961 - 1980	No Class	Flat - First Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	No Class	Flat - Ground Floor
NORTH DOWN AND ARDS AREA	1945 - 1960	No Class	Flat - Ground Floor
NORTH DOWN AND ARDS AREA	1961 - 1980	No Class	Bungalow - Semi Detached
NORTH DOWN AND ARDS AREA	Post 1980	No Class	Bungalow - End Terrace
NORTH DOWN AND ARDS AREA	Post 1980	No Class	Bungalow - Semi Detached
SOUTH AND EAST BELFAST	1961 - 1980	No Class	Bungalow - End Terrace
SOUTH AND EAST BELFAST	Post 1980	No Class	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	No Class	Flat - Ground Floor
SOUTH AND EAST BELFAST	1961 - 1980	No Class	Bungalow - Semi Detached
SOUTH AND EAST BELFAST	1945 - 1960	No Class	Flat - Ground Floor
SOUTH AND EAST BELFAST	1945 - 1960	No Class	Flat - Ground Floor
SOUTH AND EAST BELFAST	Post 1980	No Class	House - Semi Detached
SOUTH AND EAST BELFAST	1961 - 1980	No Class	House - Mid Terrace
SOUTH AND EAST BELFAST	1945 - 1960	No Class	Flat - First Floor
SOUTH AND EAST BELFAST	1945 - 1960	No Class	Maisonette - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	No Class	Flat - Top Floor
SOUTH AND EAST BELFAST	1945 - 1960	No Class	Flat - Top Floor
SOUTH AND EAST BELFAST	1945 - 1960	No Class	Flat - Top Floor
SOUTH AND EAST BELFAST	Post 1980	No Class	House - End Terrace
SOUTH AND EAST BELFAST	Post 1980	No Class	House - End Terrace
SOUTH AND EAST BELFAST	Post 1980	No Class	House - Mid Terrace
SOUTH AND EAST BELFAST	1961 - 1980	No Class	House - Semi Detached

AreaDM	YOC	Class Recommendation	Property Type
SOUTH AND EAST BELFAST	1961 - 1980	No Class	Bungalow - End Terrace
SOUTH AND EAST BELFAST	Post 1980	No Class	Flat - Ground Floor
SOUTH AND EAST BELFAST	Post 1980	No Class	Flat - Top Floor
SOUTH AND EAST BELFAST	Post 1980	No Class	Flat - Ground Floor
SOUTH AND EAST BELFAST	Post 1980	No Class	House - Mid Terrace
SOUTH AND EAST BELFAST	Post 1980	No Class	Bungalow - Semi Detached
SOUTH AND EAST BELFAST	Post 1980	No Class	Bungalow - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	No Class	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	No Class	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	No Class	Flat - Top Floor
SOUTH ANTRIM AREA	1961 - 1980	No Class	Bungalow - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	No Class	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	No Class	Flat - Top Floor
SOUTH ANTRIM AREA	1945 - 1960	No Class	Flat - Top Floor
SOUTH ANTRIM AREA	1961 - 1980	No Class	Bungalow - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	No Class	Flat - Top Floor
SOUTH ANTRIM AREA	1961 - 1980	No Class	House - Mid Terrace
SOUTH ANTRIM AREA	1961 - 1980	No Class	Bungalow - End Terrace
SOUTH ANTRIM AREA	1961 - 1980	No Class	Bungalow - Mid Terrace
SOUTH ANTRIM AREA	1945 - 1960	No Class	Flat - Top Floor
SOUTH ANTRIM AREA	1961 - 1980	No Class	Flat - Top Floor
SOUTH ANTRIM AREA	1961 - 1980	No Class	Flat - First Floor
SOUTH AREA	1945 - 1960	No Class	Flat - Top Floor
SOUTH AREA	1961 - 1980	No Class	Flat - Ground Floor
SOUTH AREA	1961 - 1980	No Class	Flat - Top Floor
SOUTH AREA	1961 - 1980	No Class	Flat - First Floor
SOUTH AREA	1961 - 1980	No Class	Bungalow - Mid Terrace
SOUTH AREA	1961 - 1980	No Class	Bungalow - End Terrace
SOUTH AREA	1945 - 1960	No Class	House - End Terrace
SOUTH AREA	1961 - 1980	No Class	Flat - Ground Floor
SOUTH AREA	Post 1980	No Class	House - Mid Terrace
SOUTH AREA	Post 1980	No Class	Bungalow - Semi Detached
SOUTH AREA	Post 1980	No Class	Bungalow - Semi Detached
SOUTH AREA	Post 1980	No Class	House - Semi Detached
SOUTH DOWN AREA	1961 - 1980	No Class	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	No Class	Bungalow - End Terrace

AreaDM	YOC	Class Recommendation	Property Type
SOUTH DOWN AREA	1961 - 1980	No Class	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	No Class	House - End Terrace
SOUTH DOWN AREA	Pre 1945	No Class	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	No Class	House - Mid Terrace
SOUTH DOWN AREA	1961 - 1980	No Class	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	No Class	House - End Terrace
SOUTH DOWN AREA	1961 - 1980	No Class	Flat - First Floor
SOUTH WEST AREA	1961 - 1980	No Class	Bungalow - Mid Terrace
SOUTH WEST AREA	Post 1980	No Class	Bungalow - Semi Detached
SOUTH WEST AREA	Pre 1945	No Class	House - Mid Terrace
WEST AREA	1961 - 1980	No Class	Bungalow - Mid Terrace
WEST AREA	1961 - 1980	No Class	House - End Terrace
WEST AREA	1945 - 1960	No Class	Flat - Second Floor
WEST AREA	1961 - 1980	No Class	Flat - First Floor
WEST AREA	Post 1980	No Class	Bungalow - Semi Detached
WEST AREA	1945 - 1960	No Class	House - Mid Terrace
WEST AREA	1945 - 1960	No Class	House - Mid Terrace
WEST AREA	Post 1980	No Class	Bungalow - End Terrace
WEST BELFAST	1945 - 1960	No Class	House - End Terrace
WEST BELFAST	1961 - 1980	No Class	House - Mid Terrace
WEST BELFAST	1961 - 1980	No Class	House - Mid Terrace
WEST BELFAST	1961 - 1980	No Class	House - Mid Terrace
WEST BELFAST	1961 - 1980	No Class	House - Mid Terrace
WEST BELFAST	1961 - 1980	No Class	House - Mid Terrace
WEST BELFAST	1961 - 1980	No Class	House - End Terrace
WEST BELFAST	Post 1980	No Class	House - Semi Detached
WEST BELFAST	Post 1980	No Class	House - Mid Terrace
WEST BELFAST	Post 1980	No Class	House - Semi Detached
WEST BELFAST	1961 - 1980	No Class	House - Semi Detached
WEST BELFAST	Post 1980	No Class	House - Mid Terrace
WEST BELFAST	Post 1980	No Class	Bungalow - Semi Detached
WEST BELFAST	Post 1980	No Class	House - Mid Terrace
WEST BELFAST	Post 1980	No Class	House - End Terrace
WEST BELFAST	1961 - 1980	No Class	House - Mid Terrace
WEST BELFAST	Post 1980	No Class	House - End Terrace
WEST BELFAST	Post 1980	No Class	Bungalow - Semi Detached

Private home surveys

Class Recommendation	Property Type
Class 1	Flat - Ground Floor
Class 2 - Cat A	Bungalow - Detached
Class 2 - Cat A	Bungalow - Detached
Class 2 - Cat A	Bungalow - Semi Detached
Class 2 - Cat A	House - Detached
Class 2 - Cat A	House - Detached
Class 2 - Cat A	House - Mid Terrace
Class 2 - Cat A	House - Semi Detached
Class 2 - Cat A	House - Semi Detached
Class 2 - Cat B	Bungalow - Detached
Class 2 - Cat B	Bungalow - Mid Terrace
Class 2 - Cat B	Bungalow - Semi Detached
Class 2 - Cat B	House - Detached
Class 2 - Cat B	House - End Terrace
Class 2 - Cat B	House - End Terrace
Class 2 - Cat B	House - Mid Terrace
Class 2 - Cat B	House - Semi Detached
Class 2 - Cat B	House - Semi Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - Detached
Class 3 - Cat A	Bungalow - End Terrace
Class 3 - Cat A	Bungalow - Semi Detached
Class 3 - Cat A	House - Detached
Class 3 - Cat A	House - Detached
Class 3 - Cat A	House - Detached
Class 3 - Cat A	House - Detached



Class Recommendation	Property Type
Class 3 - Cat A	House - Detached
Class 3 - Cat A	House - End Terrace
Class 3 - Cat A	House - End Terrace
Class 3 - Cat A	House - End Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Mid Terrace
Class 3 - Cat A	House - Semi Detached
Class 3 - Cat A	House - Semi Detached
Class 3 - Cat A	House - Semi Detached
Class 3 - Cat B	Bungalow - Detached
Class 3 - Cat B	Bungalow - Detached
Class 3 - Cat B	Bungalow - Detached
Class 3 - Cat B	Bungalow - Detached
Class 3 - Cat B	Bungalow - Semi Detached
Class 3 - Cat B	House - Detached
Class 3 - Cat B	House - Detached
Class 3 - Cat B	House - Detached
Class 3 - Cat B	House - Detached
Class 3 - Cat B	House - End Terrace
Class 3 - Cat B	House - Mid Terrace
Class 3 - Cat B	House - Mid Terrace
Class 3 - Cat B	House - Semi Detached
Class 3 - Cat B	House - Semi Detached
Class 3 - Cat B	House - Semi Detached
Class 3 - Cat B	House - Semi Detached
Class 3 - Cat B	House - Semi Detached
Class 3 - Cat B	House - Semi Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached

Class Recommendation	Property Type
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
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No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - Detached
No Class	Bungalow - End Terrace
No Class	Bungalow - Semi Detached
No Class	Bungalow - Semi Detached
No Class	House - Detached
No Class	House - Detached
No Class	House - Detached
No Class	House - Detached
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No Class	House - Detached
No Class	House - Detached
No Class	House - Detached
No Class	House - Detached
No Class	House - Detached
No Class	House - Detached
No Class	House - End Terrace
No Class	House - End Terrace
No Class	House - End Terrace

Class Recommendation	Property Type
No Class	House - End Terrace
No Class	House - Mid Terrace
No Class	House - Mid Terrace
No Class	House - Semi Detached
No Class	House - Semi Detached
No Class	House - Semi Detached
No Class	House - Semi Detached

## 10.4. References for insulation suitability and installation – Standards and BBA schemes

### 10.4.1 Annex CWI 1 – Common Minimum Technical Competency Requirements - Determine the Suitability of a Building for Cavity Wall Insulation Work

Annex CWI 1 – Common Minimum Technical Competency Requirements - Determine the Suitability of a Building for Cavity Wall Insulation Work				
Routes to demonstrating required competence				
Route	Qualifications/Certification	Experience / Evidence	Inspection / Assessment	
			On –Site	Off-Site
1	Achievement of all of the following QCF units either as a standalone unit or within a QCF qualification: <a href="#">L/503/3070</a> <a href="#">A/503/1170</a>	Must have evidence of work carried out to be able to demonstrate their competence for the scope for which they have applied in accordance with the competence requirements stated in this annex.	Yes	No
2	Alternative certification that has been mapped to the competence requirements within this Annex and agreed by ConstructionSkills as aligning with the competence requirements within this annex and aligning with the related requirements for acceptance as alternative certification.	Must have evidence of work carried out to be able to demonstrate their practical competence for the scope for which they have applied in accordance with the competence requirements stated in this annex.	Yes	No
3	Registered with a Building Regulations Competent Person Scheme or certificated by another a UKAS Accredited Certification Body for the type of work covered in this annex	Must have evidence of work carried out to be able to demonstrate their practical competence for the scope for which they have applied in accordance with the competence requirements stated in this annex.	Yes	No
4	Qualifications/certification other than above or no formal Qualification	Minimum of 3 years verifiable relevant experience covering the competence requirements stated in this annex and successful completion of the Experienced Worker Assessment	Yes	Yes

**NOTES**

**Route 4** - Experienced Worker Assessments will be conducted by the registering Scheme Operator or Certification Body who shall assess the Enterprise's evidence of meeting the underpinning knowledge and practical competence requirements as stated in this annex. Note: Experienced worker assessment enables the competences within this annex to be assessed and demonstrated but does not lead to the award of a qualification.

Area of Competence		Determine the Suitability of a Building for Cavity Wall Insulation Work		Annex CWI 1
Competence requirement The installer must:		Context/Scope	NOS Ref.	Further Guidance
1	Know the requirements of the building regulations and relevant standards in the context of cavity wall insulation work	The requirements of the following parts/sections of the regulations: <ul style="list-style-type: none"> <li>workmanship;</li> <li>materials;</li> <li>structural stability;</li> <li>fire safety;</li> <li>resistance to moisture;</li> <li>ventilation</li> </ul>	COSVR450 P1 K1,K2,K3 P2 K4,K5	
2	Know methods of construction for buildings	<ul style="list-style-type: none"> <li>Solid wall</li> <li>Cavity wall</li> <li>Timber framed</li> <li>Metal framed</li> </ul>	COSVR450 P3 K9,K10,K11, K12	
3	Be able to identify the types of building construction that are suitable for cavity wall insulation	Can determine which of the types of building construction are suitable for external wall insulation <ul style="list-style-type: none"> <li>cavity wall</li> <li>timber framed</li> <li>metal framed</li> </ul>	COSVR450 P3 K9,K10,K11, K12	
4	Know how to identify and be able to identify relevant checks have been undertaken to determine if asbestos containing materials are present	All building types built before the year 2000	COSVR641 P2 K5,K6,K7	
5	Know how to and be able to identify rising damp	<ul style="list-style-type: none"> <li>visual inspection</li> <li>testing</li> </ul>	COSVR450 P3 - K11	
6	Know how to assess and be able to assess the suitability of the building structure for the application of cavity wall insulation	In relation to: <ul style="list-style-type: none"> <li>condition of the internal and external wall structure <ul style="list-style-type: none"> <li>masonry structures</li> <li>clad structures</li> </ul> </li> <li>exposure to wind driven rain</li> <li>cavity width</li> </ul>	COSVR450 P3 K11	
7	Know how to determine and be able to determine the extent of the cavity to be filled	In relation to: <ul style="list-style-type: none"> <li>measurement of wall area</li> <li>semi-detached properties, terraced properties, maisonettes and flats</li> <li>cavity barriers</li> <li>walls below ground</li> <li>parts of the property that have been modified or added since the original build</li> <li>conservatories</li> <li>non-habitable parts of the building</li> <li>flues and vents</li> </ul>	COSVR450 P1 K1,K2,K3	

Area of Competence		Determine the Suitability of a Building for Cavity Wall Insulation Work		Annex CWI 1
Competence requirement The installer must:		Context/Scope	NOS Ref.	Further Guidance
8	Know factors that can affect the safe operation of combustion appliances	<ul style="list-style-type: none"> <li>Combustion ventilation</li> <li>Appliance cooling ventilation</li> <li>Performance of flue systems</li> </ul>	COSVR450 P2- K4,K8 P3-K9,K12 P5-K15	
9	Be able to determine if the proposed cavity wall insulation work is likely affect the safe operation of combustion appliances	<ul style="list-style-type: none"> <li>In relation to: <ul style="list-style-type: none"> <li>combustion ventilation</li> <li>appliance cooling ventilation</li> <li>performance of flue systems</li> </ul> </li> <li>during the installation process</li> <li>post-completion</li> </ul>	COSVR450 P5-K15	
10	Know how to assess and be able to assess the if the functionality of existing ventilation ducts/systems will be compromised by the proposed cavity wall insulation work	<ul style="list-style-type: none"> <li>In relation to: <ul style="list-style-type: none"> <li>room vents</li> <li>cavity vents</li> <li>under floor vents</li> </ul> </li> <li>during the installation process</li> <li>post-completion</li> </ul>	COSVR450 P3-K9,K12 P5-K15	
11	Know how to assess and be able to assess the if the functionality and/or safety of existing services (gas, electric, water, telephone etc.) will be compromised by the proposed cavity wall insulation work	<ul style="list-style-type: none"> <li>During the installation process</li> <li>Post-completion</li> </ul>	COSVR450 P3-K9,K12 P5-K15	
12	Know how to assess and be able to assess if site layout or conditions will impair the execution of the works	In relation to: <ul style="list-style-type: none"> <li>access</li> <li>obstructions</li> </ul>	COSVR641 P1-K3,K4	

## Annex CWI 1 - Technical Reference Document Requirements

The installer shall hold or have access to current editions, including all amendments, of the documents (or recognised equivalent documents) listed in the following table

Technical Reference Documents for the Installation of Cavity Wall Insulation	
To be proposed and agreed	

## 10.4.2 Annex CWI 2 – Common Minimum Technical Competency Requirements for Installation of Cavity Wall Insulation

Annex CWI 2 – Common Minimum Technical Competency Requirements for Installation of Cavity Wall Insulation				
Routes to demonstrating required competence				
Route	Qualifications/Certification	Experience / Evidence	Inspection / Assessment	
			On –Site	Off-Site
1	Achievement of one of the following QCF units either as a standalone unit or within a QCF qualification: Achievement of all of the following QCF units either as a standalone unit or within a QCF qualification: <a href="#">A/600/8143</a> <a href="#">L/503/3070</a> <a href="#">F/503/1171</a> <a href="#">A/503/1170</a>	Must have evidence of work carried out to be able to demonstrate their practical competence for the scope for which they have applied in accordance with the competence requirements stated in this annex.	Yes	No
2	Alternative certification that has been mapped to the competence requirements within this Annex and agreed by ConstructionSkills as aligning with the competence requirements within this annex and aligning with the related requirements for acceptance as alternative certification.	Must have evidence of work carried out to be able to demonstrate their practical competence for the scope for which they have applied in accordance with the competence requirements stated in this annex.	Yes	No
3	Registered with a Building Regulations Competent Person Scheme or certificated by another a UKAS Accredited Certification Body for the type of work covered in this annex	Must have evidence of work carried out to be able to demonstrate their practical competence for the scope for which they have applied in accordance with the competence requirements stated in this annex.	Yes	No
4	Qualifications/certification other than above or no formal Qualification	Minimum of 3 years verifiable relevant experience covering the competence requirements stated in this annex and successful completion of the Experienced Worker Assessment	Yes	Yes

**NOTES**  
**Route 1** – In addition to off-the job training and assessment routes, some awarding organisations include on-site assessment and training (OSAT) and Experienced Worker Program (EWPA) options to achieve QCF units/ qualifications  
**Route 4** - Experienced Worker Assessments will be conducted by the registering Scheme Operator or Certification Body who shall assess the Enterprise's evidence of meeting the underpinning knowledge and practical competence requirements as stated in this annex. Note: Experienced worker assessment enables the competences within this annex to be assessed and demonstrated but does not lead to the award of a qualification.

Area of Competence		Installation of Cavity Wall Insulation		Annex CWI 2
Competence requirement The installer must:		Context/Scope	NOS Ref.	Further Guidance
1	Know the types of information and be able to interpret information relating to cavity wall insulation work	<ul style="list-style-type: none"> <li>• Installation drawings</li> <li>• Specifications</li> <li>• Schedules</li> <li>• Method statements</li> <li>• Risk assessments</li> <li>• Manufacturer's information</li> </ul>	COSVR450 P1 K1 K2 K3 P3 K12 P5 K15 P6 K17	
2	Know the procedures to follow when problems with information exist	<ul style="list-style-type: none"> <li>• Know limits of own responsibility to rectify problems</li> <li>• Know procedures when problems exceed limits of own authority to rectify</li> </ul>	COSVR450 P1 K1, K2, K3	
3	Know the requirements of and be able to comply with the requirements of legislation and official guidance in relation to safe working practices when undertaking cavity wall insulation work	Legislation and official guidance relating to the operatives own responsibilities: <ul style="list-style-type: none"> <li>• Accident prevention</li> <li>• Emergency procedures in relation to               <ul style="list-style-type: none"> <li>– fires</li> <li>– spillages</li> <li>– injuries</li> <li>– occupational activities</li> </ul> </li> <li>• Working below ground level</li> <li>• Working in confined spaces</li> <li>• Working at height</li> <li>• Use of tools and equipment</li> <li>• Use of materials and substances</li> <li>• Movement of materials               <ul style="list-style-type: none"> <li>– Manual handling</li> <li>– Mechanical lifting</li> </ul> </li> <li>• Storage or materials</li> </ul>	COSVR450 P2 K4, K5, K6, K7, K8 COSVR641 P1 K1,K2,K3,K4 COSVR643 P3 K12 P1 K4	
4	Know the characteristics, quality, uses, sustainability, limitations, defects and hazards associated with resources used in cavity wall insulation work	Materials <ul style="list-style-type: none"> <li>• protective sheeting</li> <li>• warning signs</li> <li>• temporary barriers</li> <li>• airway sleeves</li> <li>• cavity barriers</li> <li>• cement</li> <li>• insulation</li> </ul> Tools and equipment <ul style="list-style-type: none"> <li>• hand tools and equipment</li> <li>• powered tools and equipment</li> </ul>	COSVR450 P3 K9, K10, K12	



Area of Competence		Installation of Cavity Wall Insulation		Annex CWI 2
Competence requirement The installer must:		Context/Scope	NOS Ref.	Further Guidance
5	Know how to and be able to minimise the risk of damage to the work and the surrounding area	Protection of work against damage from: <ul style="list-style-type: none"> <li>• general workplace activities</li> <li>• other occupations</li> <li>• adverse weather conditions</li> </ul> Disposal of waste in accordance with legislation and required procedures <ul style="list-style-type: none"> <li>• statutory regulations and official guidance</li> <li>• environmental legislation and procedures</li> <li>• manufacturer's guidance and procedures</li> <li>• organisational procedures</li> </ul>	COSVR450 P4 K13, K14	
6	Know the requirements of and be able to carry out pre-installation checks	Pre-installation checks relating to: <ul style="list-style-type: none"> <li>• integrity and suitability of the structure               <ul style="list-style-type: none"> <li>– condition of outer leaf of cavity</li> </ul> </li> <li>• position and purpose of vents               <ul style="list-style-type: none"> <li>– room vents</li> <li>– cavity vents</li> <li>– under floor vents</li> </ul> </li> </ul>	COSVR450 P5 K15	
7	Know the actions to take when pre-installation checks identify an actual or potential problem.	Actions relating to: <ul style="list-style-type: none"> <li>• progressing with the work</li> <li>• informing others</li> </ul>	COSVR450 P5 K15	
8	Know how to and be able to prepare for the installation of cavity wall insulation systems	Selection of the required quantity and quality of materials: <ul style="list-style-type: none"> <li>• protective sheeting</li> <li>• warning signs</li> <li>• temporary barriers</li> <li>• airway sleeves</li> <li>• cavity barriers</li> <li>• fine aggregates</li> <li>• cement</li> <li>• insulation</li> </ul> Selection of the required tools and equipment <ul style="list-style-type: none"> <li>• hand tools and equipment</li> <li>• powered tools and equipment</li> </ul>	COSVR450 P3 K11 P5 K15, K16	

Area of Competence		Installation of Cavity Wall Insulation		Annex CWI 2
Competence requirement The installer must:		Context/Scope	NOS Ref.	Further Guidance
9	Know how to and be able to install cavity wall insulation systems	<ul style="list-style-type: none"> <li>• assembly, operation, cleaning and disassembly of insulation processing equipment</li> <li>• measure and calibrate equipment</li> <li>• use protective sheeting, warning signs and temporary barriers as appropriate</li> <li>• airway sleeves</li> <li>• drill holes to specified patterns               <ul style="list-style-type: none"> <li>– through internal leaf</li> <li>– through external leaf</li> </ul> </li> <li>• fit cavity barriers</li> <li>• install insulation using specified process</li> <li>• fill holes with matching and suitable materials</li> </ul>	COSVR450 P3 K11 P5 K15, K16	
10	Know the requirements of and be able to carry out post-installation checks	Post-installation checks relating to: <ul style="list-style-type: none"> <li>• compliance with the installation specification               <ul style="list-style-type: none"> <li>– job specific requirements</li> <li>– manufacturer's instructions</li> </ul> </li> <li>• vents               <ul style="list-style-type: none"> <li>– condition, clearance and functionality of existing vents</li> <li>– provision of, condition, clearance and functionality of new vents</li> </ul> </li> <li>• existing services (gas, electric, water, telephone etc.)               <ul style="list-style-type: none"> <li>– the installation work has not damaged or affected the safe and effective performance of existing services</li> <li>– integrity of cavity barriers and fire stops</li> </ul> </li> </ul>	COSVR450 P5-K15 P6-K17	

### 10.4.3 Assessment and Surveillance Scheme for Approved Installers of Cavity Wall Insulation



## ASSESSMENT AND SURVEILLANCE SCHEME FOR APPROVED INSTALLERS OF CAVITY WALL INSULATION

(15-01-01)

British Board of Agrément  
Bucknalls Lane  
Watford  
Hertfordshire WD25 9BA

Note: This document may be revised from time to time, for example to take account of improvements and amendments to test and assessment methods and material innovations. Readers are advised to contact the British Board of Agrément to check the latest edition.

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## Revision History (in reverse chronological order)

Issue	Date	Nature And Location Of Change
7	26/10/2017	Clarification of inspection frequency; addition of partial fill photograph requirement
6	18/07/2017	Inclusion of appendix 4, BBA survey form
5	9/6/2017	Revision in line with PAS2030 and PAS2031 2017. Addition of identification of combustion burning appliances. References to CIGA approved alternative schemes removed.
4	31/03/2017	Revision in line with CASS™ (JH).
3	27/07/2015	Document completely revised and reformatted.
2	02/03/2015	Document reformatted and assigned document number. Authoriser and revision history table added.
1	21/05/2012	First issue

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## 1.0 TERMS AND CONDITIONS OF USE

Intellectual Property Rights, including Copyright, in the BBA Assessment and Surveillance Scheme for BBA Approved Installers of Cavity wall Insulation (hereinafter referred to as the Scheme), this Scheme Document and any other related documentation belong to the BBA.

This Scheme Document has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective.

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The BBA makes no warranties, representations or undertakings in respect of this Scheme Document.

In no event will the BBA be liable for any direct or consequential loss or damage arising from its use or use of, or reliance on its content.

### ***The British Board of Agrément (BBA)***

BBA offers a range of services that provide reassurance to UK users, specifiers, insurers and regulators of construction products and encourages the adoption of innovative construction solutions.

More specifically it:

- Tests and assesses construction products against UK requirements or other relevant recognised documents, issuing Agrément Certificates for those products it considers are fit for purpose
- Inspects and certifies manufacturers to confirm consistency of production; and
- Inspects the installation of products through independent or government schemes.

### ***BBA Agrément Certificates***

BBA Agrément Certificates provide BBA's independent opinion of the fitness for purpose of a product or system having assessed all relevant performance factors including as appropriate safety, installation, durability and other essential requirements.

## 2.0 INTRODUCTION

The Scheme encompasses the installation by Approved Installers of cavity wall insulation which is the subject of a BBA Agrément Certificate, in buildings not exceeding 12 metres in height. See note below. The BBA approves installers as competent to install defined products or systems that have a valid Agrément Certificate where the installation has a significant part in their performance. Installers must be assessed by the BBA as meeting the requirements of the scheme before approval and surveillance is carried out by the BBA, where installers are so approved. These tasks are undertaken by BBA's Inspectors, trained and experienced in the technology, which ensure that the installers are competent to install the related product or system in accordance with the relevant Agrément Certificate.

Note: Where buildings are above 12 metres high, installation may take place if the relevant Certificate holder has assessed the building as suitable and this is provided for in the relevant Agrément Certificate. In such cases, the Certificate holder must carry out an assessment and maintain a documented record that they have given approval for the installation to take place.

The BBA Scheme for the assessment and surveillance of installers of cavity wall insulation is based on a three party arrangement:

- the BBA,
- the Agrément Certificate holder and
- the Approved Installer, approved by BBA as competent to install products under the related Certificate.

The responsibilities of each are set out in this Scheme.

Information about the BBA, Agrément Certificates and Approved Installers is available on the BBA website at [www.bbacerts.co.uk](http://www.bbacerts.co.uk) from which documents can be downloaded and printed.

### **Statutory requirements**

The Installer shall comply with the statutory requirements applicable to the building to be insulated, for example relevant Building Regulations.

## **3.0 SCOPE**

This Scheme Document is valid only within the UK, Isle of Man and Channel Isles.

## **4.0 REFERENCE DOCUMENTS**

### **Standards**

ISO 17065:2012 Conformity assessment — Requirements for bodies certifying products, processes and services

BS EN ISO/IEC 17020:2012 Conformity assessment - Requirements for the operation of various types of bodies performing inspection

PAS 2030:2017 Specification for the installation of energy efficiency measures in existing buildings

PAS 2031:2017 Certification of energy efficiency measure (EEM) installation in existing buildings

### **Other relevant documents**

BBA Brand Guidelines (19-05-01)

Cavity Assessment Surveillance Scheme Document

Common Minimum Technical Competences

DCLG Building Regulations: Third Party Certification Schemes – Conditions of Authorisation

ECO 2 Guidance: Delivery

GD CAP01 Accepted approach to installer surveillance evaluation

GD CAP03 Inspection and surveillance of External, Hybrid and Internal wall insulation

Green Deal Code of Practice + Annex C: Green Deal Installers + Annex D: Green Deal Products and Systems Annex E: Certification Bodies

Green Deal Oversight and Registration Body: Overview of monitoring strategy Jan 2013

Green Deal Quality Mark requirements and Guidelines 2.1

Green Deal Terminology

ORBCOMM018 Green Deal Code of Practice – compliance requirements

ORBCOMM029 Pre-installation survey requirements for telecommunication services in Solid Wall Insulation installations

Terms and Condition of Sub-Sublicense (Installer)

TrustMark Core Criteria



## 5.0 DEFINITIONS

Abbreviation or term		Explanation of abbreviation or term
1)	<b>Approved Assessor</b>	A person who has satisfactorily completed the training programme operated by the installer and system supplier and been registered by them and is approved under the BBA Approved Assessor Scheme, and so is capable of assessing buildings according to the Agrément Certificate and this Scheme Document.
2)	<b>Approved Installer</b>	The company or organisation accepted into the Scheme.
3)	<b>Buildings under Construction</b>	A building deemed under construction before the issuing of such notification described in the existing buildings section.
4)	<b>CASS™</b>	Cavity Assessment Surveillance Scheme
5)	<b>Certificate Holder</b>	The Company which holds a valid and relevant Agrément Certificate.
6)	<b>Customer</b>	The person/homeowner, company or organisation, on whose behalf the work is being undertaken.
7)	<b>Existing Buildings</b>	A building deemed existing when the Local Authority has been notified in writing on its completion, signifying compliance with the Building Regulations.
8)	<b>Green Deal Advisors</b>	A Green Deal Advisor is an individual employed or contracted by an authorised Green Deal Assessor who visits the property to undertake a Green Deal assessment and make recommendations for energy saving improvements.
9)	<b>Green Deal Assessor</b>	A Green Deal Assessor is a Green Deal Approved organisation that is certified by an accredited Green Deal Certification Body against the Assessor Specification and is authorised by the Secretary of State to act as a Green Deal Assessor.
10)	<b>Installation Manual</b>	The Installation Manual prepared by the Certificate holder and approved by the BBA.
11)	<b>Installer</b>	The company or organisation applying for assessment for the installation of cavity wall insulation. Once accepted, the installer is known as an Approved Installer.
12)	<b>Office</b>	The administrative centre from which statutory notices of intention to install insulation are issued and / or from where staff are managed or supervised.
13)	<b>Product</b>	The material used for insulating the cavity space.
14)	<b>Scheme</b>	BBA Assessment and Surveillance Scheme for BBA Approved Installers of Cavity Wall Insulation.
15)	<b>Scheme Document</b>	The BBA Scheme Document for the Assessment and Surveillance of Installers of Cavity Wall Insulation.
16)	<b>System Installed</b>	The system that comprises the insulation, machinery and method of installation as defined in the Agrément Certificate for which the Installer is approved or as agreed between the Certificate holder and BBA.
17)	<b>Team</b>	A team that comprises at least one Technician trained by the Certificate holder.
18)	<b>Technician</b>	A person who has satisfactorily completed the Certificate holder's training programme and a relevant training course in flues, chimneys and combustion air ventilators.

## 6.0 THE APPROVED SYSTEM

The BBA operates a UKAS accredited product Certification Scheme under the terms of ISO17065:2012.

BBA Certificated products and systems are subject to both a rigorous initial assessment and ongoing surveillance to ensure that they are fit for their intended use.

Products with CE marking will also require independent third party validation of installation requirements and address the relevant UK design, use and Building Regulations provisions.

Annex D of the Green Deal Code of Practice sets out eligibility requirements for inclusion under the terms of the Green Deal.

In addition, as part of this Scheme, Certificate holders and or system manufacturers are required to:

- have their training processes for Approved Installers assessed and approved by the BBA
- agree with the BBA a detailed installation Method Statement, to cover all aspects of the installation process, from initial survey to hand over process and maintenance requirements. This Method Statement is unique to each system and forms the technical basis of both the training of potential Approved Installers and this Scheme.

## **7.0 THE APPROVED INSTALLER PROCESS**

As a first step to becoming approved, the installer must complete a BBA contract available on the BBA website from which it can be downloaded and printed; or by telephone request to 01923 665300; or by e-mail request to [construction@bbacerts.co.uk](mailto:construction@bbacerts.co.uk).

The holder of the Certificate relating to the cavity wall insulation that the installer wishes to install must be satisfied that the proposed installer is capable of installing it competently and in accordance with the related Agrément Certificate and the Certificate holder must provide written confirmation to the BBA in that regard.

The Installer is subject to assessment by the BBA and when accepted, and becoming an Approved Installer, be subject to regular surveillance whilst approved. Assessment and surveillance of Approved Installers shall be undertaken by the BBA to ensure that the products are being installed in accordance with the relevant Agrément Certificate and this Scheme Document.

### ***Initial Approval***

The BBA shall witness a satisfactory site installation for each system and complete an office assessment.

The BBA will carry out a pre-approval site inspection for each additional system the installer applies to be approved for.

### ***Ongoing Approval and Surveillance***

Each year after the initial approval, the Inspection Body will carry out a single office visit and a series of visits to sites, of which frequencies will be based on those required in the particular clauses of PAS 2031 (if applicable) and as a % of the total number of installations by that installer, with a minimum of one. This number may be increased, at the BBA's discretion, should the results of the inspections indicate that the Approved Installer is failing to meet the Technical Requirements. These extra visits will be charged separately to the Approved Installer.

The Approved Installer will be issued with a variation report by the BBA after each visit if any non-compliances are raised.

The BBA reserves the right to carry out extra visits when serious discrepancies or concerns are encountered. These extra visits will be charged to the Approved Installer.

Where the Approved Installer operates from more than one office, each office shall be treated as a separate Approved Installer for the purposes of inspections and invoicing.

Invoicing for these inspections will be made in advance and payment must be received prior to the inspections taking place.

BBA will receive fees directly from the Installer and any non-payment as required by BBA will result in the withdrawal of BBA approval.

The BBA will invoice all Approved Installers for surveillance visits annually in advance. Invoicing for remedial inspection visits will be made after the visit has taken place and payment must be received within 30 days of the date of the invoice.

The installer shall advise the BBA of the contact names, addresses and telephone numbers for all offices.

The Approved Installer shall provide BBA with details of all planned or completed installations on a weekly basis.

The BBA will require all remedial work to be completed within 14 days of the notification of a non-compliance and all identified non-compliant works, at the discretion of the BBA, may be re-inspected. Where an inspection reveals that any work completed could be safety critical, such as those with possible implications for the safe operation of combustion appliances, the BBA inspector will notify the installer by telephone. The Approved Installer must rectify the non-compliance within 24 hours of being notified. In such circumstances, the Approved Installer must liaise closely with the BBA until the remedial works are satisfactorily completed, notifying the BBA on the day of completion. All such non-compliances will require re-inspection by the BBA.

An annual report will be collated by the BBA in respect of the Scheme for review/comment by the Certificate holders and Approved Installers. Individual Approved Installer performance details will be shared with the Certificate holders to whom the Approved Installer is contracted.

### ***License***

While the Approval is valid, the BBA grants to the Installer a non-exclusive license to:

- a) use the BBA Logo strictly in accordance with the current or later versions of the "BBA Brand Guidelines" document (a copy of which is on the BBA's website); and
- b) disclose, publish and make known to any third parties that it is a BBA Approved Installer.

This license can be suspended or revoked at any time by the BBA including and without prejudice to the generality of the foregoing upon the suspension or revocation or expiry of the Approval.

Installers who are also registered for the Green Deal will be granted a non-exclusive sub-sublicense to use the Green Deal logo.

## **8.0 CONDITIONS OF APPROVAL**

The singular includes the plural, and vice versa.

**The BBA shall be entitled to suspend or revoke its approval of an Installer at any time by notice in writing to the Installer, copy to the relevant BBA Agrément Certificate holder, and without prejudice to the generality of the foregoing may suspend or revoke the approval by notice if:**

- a) there is non-compliance by the Installer with the content of the BBA Agrément Certificate under which the Installer is approved by the BBA;

- b) there is non-compliance by the Installer with the relevant BBA Scheme Document, as may be changed from time to time by the BBA;
- c) any information becomes available which was not at the disposal of the BBA prior to its approval of the Installer being approved;
- d) if the BBA Agrément Certificate under which the Installer operates is suspended or withdrawn;
- e) the installer fails to pay to the BBA any Fees within the time limits determined by the BBA; or;
- f) the installer goes into liquidation or has a receiver or administrator appointed over any part of its business, property or assets;
- g) the installer fails to inform the BBA of the weekly work schedule.

**The BBA's entitlement to suspend or revoke an approval described above also applies to the following. BBA approved Installers must co-operate with the BBA and provide any information it requests related to the Scheme and without prejudice to the generality of the foregoing must:**

- (a) provide the BBA with any information requested that demonstrates compliance with the Scheme, the BBA Agrément Certificate under which the Installer operates and Building Regulations;
- (b) have, maintain and make available to the BBA clear, easy to understand literature and documentation, in particular for work that is outside the scope of their BBA Approval;
- (c) reference the BBA and use the relevant BBA logo only in accordance with the BBA Guidelines relating thereto; and
- (d) allow the BBA to carry out surveillance as determined by the BBA

**The BBA's entitlement to suspend or revoke an approval described above also applies to the following. BBA approved Installers must not contravene any Scheme requirements and without prejudice to the generality of the foregoing must not:**

- a) in the opinion of the BBA bring its name into disrepute;
- b) misrepresent their BBA approval; or
- c) promote themselves as, or state or imply in any way that they are BBA approved if promoting, seeking, carrying out or giving notification of work outside the scope of their BBA approval;

## **9.0 RESPONSIBILITIES**

### ***The BBA Certificate Holder and/or System Manufacturer***

The BBA Certificate holder and / or the system manufacturer are responsible for agreeing with the BBA a detailed installation Method Statement giving full details of the installation process.

The Agrément Certificate holder is responsible for:

- Assessing an Installer before an application for approval under this Scheme is made to BBA.
- Training and approving the Installer's Assessors and Technicians such that the Certificate holder considers them to be competent to consistently assess and install the cavity wall insulation in accordance with the related Certificate.
- Inspecting each card carrying technician twice each calendar year, the inspection must consist of an on-site work in progress installation. A copy of the report must be left with the technician/installer.
- Checking, at least annually, the Approved Installer is maintaining a register of Approved Assessors and Technicians.
- Maintaining the BBA quality plan.
- Maintaining their Certificates and related installation manuals and other documentation

- Applying durable plates to installation machinery to identify the Agrément Certificate for which the machinery can be used.

Where the Certificate holder has more than one Certificate, the Certificate holder is responsible for verifying the Installer has been trained and is equipped to operate according to each of those Certificates.

The Installer will contract with the BBA as an Approved Installer; separate contracts are required for each Certificate under which the Installer operates.

Where BBA advise the Agrément Certificate holder and their Installers of discrepancies, variations and complaints, a response is required within 30 days. These may result in BBA changing the required inspection frequency.

BBA keep Agrément Certificate holders advised of matters concerning Approved Installers operating under their Certificate(s).

The Certificate holder may withdraw their agreement to a contract between BBA and an Installer at any time by notice in writing to BBA. In such circumstances, the contract between BBA and the Installer becomes void.

### ***The Approved Installer's Responsibilities***

The Approved Installer has responsibility for:

- maintaining a register of Approved Assessors and Technicians,
- assessing the ability of Assessors and Technicians to meet the requirements of this Scheme Document.

The Approved Installer is responsible for training and auditing its appointed Assessors and Operatives to ensure that the requirements of this Scheme are met.

The Assessors and Technicians must be able to demonstrate that they are fully conversant with the contents and requirements detailed in the Scheme Document and all other factors that could affect the success of an installation including but not restricted to:

- the Agrément Certificate and Installation Manual for which the installer is approved
- storage and handling of materials
- suitability and preparation of the site
- installation techniques
- repair and maintenance
- finishing work
- equipment specification
- equipment assembly instructions
- equipment maintenance schedules
- health and safety
- adhering to all statutory requirements applicable to the building to be insulated, for example the Building Regulations
- maintaining robust documentation identifying all work in progress and completed installations
- supplying to the BBA weekly information on ongoing and completed works
- acting on any actions raised during an inspection and completing the required remedial works within a specific timescale as defined above
- maintaining records of all Assessors and Technicians, including dates of individual approval

- monitoring and inspecting the Technicians to ensure they continually comply with the requirements of the Scheme Document. A minimum of two work in progress site visits per month shall be made to each Technician; and reports made and retained. All such reports shall be made available to the BBA to demonstrate that inspections have taken place
- maintaining technical support to the Assessors and Technicians.

Quality audit procedures to cover:

- Assessment reports for each Assessor
- Installation procedures for each Technician
- maintenance of installation equipment
- remedial action
- verification of material usage.

### **Assessment of suitability of the property**

A written or electronically recorded assessment report completed by an Approved Assessor shall document whether or not the building is suitable for the proposed installation and must identify problems that may adversely affect the proper functioning of the building after completion of the installation, together with suitable corrective actions.

The assessment report form shall be acceptable to the BBA but may be unique to the Approved Installer.

The Assessor shall be an Assessor registered on the CASS™ Platform (or another Scheme approved and accepted by BBA).

The report shall include, as a minimum:

- The names of the Approved Installer, the Assessor and Technician (if different from Assessor)
- The name and address of the customer and the location of the building
- A signed declaration that the building has been assessed according to the requirements of the relevant Agrément Certificate and this document
- Areas where an internal examination of the cavity has been performed (minimum of one per elevation or 3 per elevation for non - standard and partial fill cavities) and the results of each examination
- **A clear photograph of the inside of the cavity must be provided for all assessments.**
- **Where existing partial fill cavities are being assessed, the assessor should also confirm the type of existing insulation that is present in the cavity.**
- Confirmation that all internal rooms and external elevations have been checked and that no areas of existing damp are present (other than those caused solely by condensation)
- The specification of any remedial action that will be required before the installation of the insulation. The responsibility for rectification shall be identified and agreed with the customer in writing at the time of noting such actions
- Areas of building(s) to remain un-insulated shall be shown with the reasons why the installation could not take place. It must include a signature from the customer agreeing these exclusions
- Any special requirements/factors for a particular installation, such as restricted access, etc
- Identification of essential ventilation openings that require sleeving or safeguarding before installation,
- An assessment of the current level of background ventilation in habitable rooms, and intermittent extract ventilation in all 'wet rooms'. Instruction should be provided as to how an appropriate level of ventilation is to be maintained or provided, as per clause A.5 of PAS 2030:2017.



- The identification of all combustion burning appliances within the dwelling to be insulated, the kW input rating of the appliance (For gas appliances) or the kW output of the appliance (for solid fuel appliances). Their location(s) should be clearly marked or recorded on the assessment form.
- The position of all flues whether or not they are in service and measures that must be taken to safeguard their proper functioning
- Where the installation will take place through the internal leaf
- A space for the assessment to be countersigned by the Technician prior to filling, as final acceptance that the property is suitable for installation in accordance with the relevant Agrément Certificate and this document.

Before installation of the product, the customer shall be supplied with a copy of the completed assessment report.

Where the building is deemed to be unsuitable for insulation, the Approved Installer shall provide written notice to the customer.

The information within the property assessment for each proposed installation shall be validated via CASS™ (or another Scheme approved by CIGA and accepted by BBA) and given a Unique Assessment Reference (UAR) prior to installation commencing.

A copy of the Agrément Certificate under which the installer is operating shall be made available on request to the customer.

### **Installation**

The Approved Installer will establish that a CASS™ UAR, (or another Scheme providing a UAR or equivalent approved by CIGA and accepted by BBA) has been issued for that property.

The Approved Installer must ensure that the building in which it is intended to install cavity wall insulation meets the requirements of this Scheme Document and the Agrément Certificate with respect to the following:

- a) Height of Wall — the cavity shall not exceed 12 metres in height measured from the lowest ground level.
- b) Existing Buildings — all buildings that show, or have shown evidence of water penetration, to the internal leaf that has not been corrected shall be classified as unsuitable for installation.
- c) Condition of cavity walls — the cavity walls to be filled shall be structurally sound and shall comply with the requirements of the relevant BBA Certificate in terms of location and minimum cavity width. The outer leaf shall be reasonably free from cracking, defective mortar, damaged rendering, spalled bricks or discharge of water from building features. Gutters, downpipes, overflows, etc. shall be in good functional order. The inner leaf shall be free of dampness, other than that directly attributed to condensation.
- d) Protection of cavities — where the fill will come up to underside of a feature, e.g. sill, floor slab or roof, it is essential that this feature should not permit water to penetrate the cavity at that level, since otherwise the top surface of the insulation could act as a bridge for water to cross the cavity.
- e) Recent construction — should have been designed and built following the recommendations of the appropriate British Standards Codes of Practice or British Standards. Where less than one year has elapsed since first occupancy the building still needs to meet the recommendations of (a) to (d) above. This is particularly relevant for new construction, where there may not have been sufficient time for any defects to have become apparent prior to installation.
- f) Building under construction — the Installer shall, where practical, before commencement of construction, assess the drawings and advise the designer in relation to the suitability for cavity wall insulation as described by the Agrément Certificate and this Scheme. After construction has commenced and the cavity walls are substantially complete, visit the site to assess the

building(s) with the drawings according to the above. Any visible defects that could result in water penetration or rising damp shall be identified on the survey report. If defects are found, the Installer shall notify the client in writing that appropriate remedial action must be undertaken before installation of the insulation. The building shall be deemed unsuitable until the defects are rectified.

Where required, a Technician shall supervise or carry out the pre-installation test(s) required by the Agrément Certificate and Installation Manual.

If installing a fibre insulation, the Technician shall verify the operation of the machinery by undertaking a pre-installation density test. The method of test shall be approved by BBA. Refer to Appendix 1. The Technician shall record results of material quality testing and the date and time that the tests were conducted. On completion of the installation of the product, the quantity of material used along with average cavity width is calculated by the Technician with a density figure record for each property. See Appendix 2.

When using a bonded bead system the Technician shall check, prior to installation the relevant flow rates and document them daily for each installation.

Before installation, a Technician shall check the property is suitable for the installation of the product, and that it accords with the Assessor's Report. If the technician has reason to doubt that the building is suitable for insulation, then they shall seek advice from a suitably qualified representative of the Installer before proceeding with the installation. This information shall be entered on the work instructions.

The installation shall be carried out according to the Assessor's Report, Agrément Certificate and Installation Manual for which the work has been contracted.

Where the installation requires the insertion of a cavity barrier, the cavity barrier shall be retained in the cavity at the completion of the installation. The cavity barrier shall be of a type approved by the BBA, such as a 75 mm, 100 mm or 150 mm diameter polypropylene brush with a stainless steel wire core.

Upon completion of the installation and at the end of each working day, if the installation takes longer than one day, the Technician shall investigate and confirm the proper functioning of all ventilation openings and flues in accordance with the Cavity Insulation Guarantee Agency Technician's Guide to Best Practice. The Technician shall complete a safety checklist for each installation — see Appendix 3.

A Technician shall be present and in charge of each installation of cavity wall insulation.

### **Work instructions to technicians**

The Approved Installer shall ensure that the following is documented and made available to the Technician on site. The Technician must check the Assessor's Report meets the requirements of the Agrément Certificate and the Scheme before installation.. Alterations to the report must be countersigned by the Technician and agreed with the property owner before commencing the installation:

- the Assessment Report, including the position of flues and how they should be dealt with
- special instructions to the Technician relating to time, access and services needed by the Technician
- the completed risk assessment and any instructions/actions that need to be followed.

If it is deemed access to certain areas of the property is restricted, and will compromise the complete installation, the decision on whether or not an area is accessible should be recorded including, reasons

for omitting these areas, together with photographs, and confirmation that omitting the areas in question will not compromise the effectiveness of the installation as a whole.

Where the building is deemed to be unsuitable for insulation, the Installer shall provide written notice to the client. The notice shall identify the reasons for unsuitability and should be signed by the property owner.

### **The System of insulation**

The system to be installed shall be the subject of a valid Agrément Certificate for which the Installer has been approved by BBA and the Certificate holder.

### **Material storage**

Materials shall be stored to prevent deterioration and a Technician shall supervise collection of materials from store and discharge into the delivery system.

### **Independent testing**

BBA reserves the right to select and remove from store or site samples of material for testing. BBA shall not be charged for such samples.

### **BBA Responsibilities**

The BBA has responsibility for assessing, appointing and maintaining the membership of the Scheme on the basis set out in this document.

Details of the membership will be made available on the BBA website.

The Scheme will involve assessing the ability of an Installer to meet the requirements of this Scheme Document prior to the application to the BBA to become an Approved Installer. The Installer must be able to demonstrate that they are fully conversant with the Technical Requirements and for Green Deal installations, of PAS 2030 and the Green Deal Code of Practice.

The BBA is responsible for checking that the products are being installed according to the Technical Requirements of this Scheme. The assessment, surveillance and re-assessment as appropriate of Approved Installers is undertaken by the Inspection Body's own Inspectors who are trained and experienced in the technology and installation techniques. Further details can be found within the main text of this document.

## **10.0 RECORDS**

The Approved Installer shall make available to the BBA records of all work carried out.

As a minimum, the following information shall be provided:

- the customer's details
- a brief specification for the works, including the quantity of material used/required
- a written form of contract agreement
- the site address
- the commencement date of install
- instructions to the Technicians
- the Assessors building Assessment Reports and risk assessments
- records of training, the required qualifications and experience of all Technicians, including details of the manner in which the Technician has obtained practical experience

- a register of all complaints received concerning work carried out under the approval issued by the BBA. The register shall identify the address, the work/job number, brief description of complaint, action taken and resolution dates.

Records shall be retained for a minimum of 6 years.

## **11.0 HEALTH AND SAFETY**

The Approved Installer must ensure Approved Surveyors and Operatives work in a safe and responsible manner and be able to demonstrate their ability to manage the types of risk involved with the work. The Approved Installer must demonstrate that they have a process in operation, but the adequacy of the process is the responsibility of the Approved Installer and does not form a part of this Scheme.

## **12.0 APPENDICES**

## APPENDIX 1 – BBA QUALITY CONTROL SPECIFICATION

### **Introduction**

- 1.1 The BBA requires that all products considered for approval be installed in an environment which delivers performance to a pre-defined standard and at a consistent level. Frequently this will require a management system based upon the International Standard ISO 9001.
- 1.2 we require conformity with a set of criteria, defined in this Appendix which focus on the key elements that we believe are essential for assuring quality.
- 1.3 You may choose to include all your business activities within the scope of your Quality Management System. The Inspection Body assessment will only deal with the elements of the Quality Management System relating to the installation of the products which are the subject of the assessment and/or certification process.

### **Criteria**

- 2.1 Competence – your Company shall maintain a register of persons competent to undertake defined tasks.
- 2.2 Complaints – your Company shall record all customer complaints (commercial, technical, those received in writing and verbal statements of dissatisfaction from customers and enquirers), and take appropriate corrective and preventative actions to address, and retain records, of such.
- 2.3 Purchasing – your Company shall only purchase goods as per your approved status.
- 2.4 Installation controls – your Company shall formulate and issue suitable instructions and training to staff to ensure that products installed meet a consistent and defined standard. Documentation shall also detail the levels of process control as per the agreed installation method statement.
- 2.5 Identification and traceability – your Company shall identify the product by name and batch number. The finished product shall be traceable to the date, or batch, of production and unique number.
- 2.6 Testing and inspection – your Company shall carry out testing in accordance with the agreed method statement for the approved product.
- 2.7 Calibration – measuring and test equipment shall be of sufficient accuracy and clearly identified, calibrated and traceable to national standards.
- 2.8 Internal auditing – periodically your management shall assess the appropriateness of your procedures to ensure that they are being followed and achieving their objectives
- 2.9 Records – the Company shall hold records of:
  - competence and training
  - complaints and resulting action(s)
  - installation
  - test and inspection (including non-compliance where applicable)
  - calibration
  - internal audits.

---

### ***Additional considerations***

- 3.1 Many companies achieve great value by extending their management system to achieve compliance with ISO 9001; we recommend that you consider these important elements.
- 3.2 Management review – your management should carry out a regular critical review of the processes and procedures of the company, including analysis of customer complaints, internal audits, non-conformities, and take action for the future.
- 3.3 Corrective action – Your management should investigate each problem as it arises and adjust processes and training as appropriate to prevent recurrence.



## APPENDIX 2 - DENSITY TESTS FOR FIBRE CWI SYSTEMS

The requirement of the BBA surveillance scheme shall be deemed to be satisfied, if the Technician undertakes a test as follows:

### **Option 1 General**

Injection of fibre insulation, by the proposed installation equipment, into a box measuring 500 mm by 500 mm by 70 mm internally. The box must be provided with nine ventilation holes to each of three narrow sides. The ventilation holes must be fitted with suitable gauze.

Injection of the insulation shall take place through the 500 mm by 500 mm face at a point centre 150 mm below the top of the box.

### **Option 2 Specific Rockwool Ltd Approved Installers only:**

Injection of Rockwool, by the proposed installation machinery, into a box measuring 500 mm by 500 mm by 60 mm internally. The box must be provided with 14 ventilation holes of 26 mm diameter. The ventilation holes shall be located as five holes on each of the two narrow vertical sides and four holes on the top narrow side. The ventilation holes shall be fitted internally with suitable gauze.

Injection of the Rockwool shall take place through the 500 mm by 500 mm face via a 26 mm diameter hole at a point centred 110 mm below the top of the box.

### **General**

The box shall be constructed of substantial materials, capable of resisting the forces encountered during injection, without significant deformation. Suitable construction may be 20 mm thick block board.

After achieving the normal shutdown indicator, for the equipment in use, the contents of the box shall be weighed on suitable scales. The weight of material or calculated density shall be compared against the documented specification for the equipment and system in use.

The time taken to fill the box must be compared against documented values.

All results must be documented.

Results falling outside documented ranges shall be recorded and the appropriate remedial action taken, along with re-test values.

Note: Where adjustment of the machinery is possible, the delivery lines shall be purged, before a re-test is undertaken.

### APPENDIX 3 - TECHNICIAN'S SAFETY CHECK SHEET

Flues, chimneys and combustion air ventilators

Installing firm's name address and contact details (or letterhead)

Important:

- It is the installing firm's responsibility to ensure that the Technician is trained to be able to discharge these responsibilities
- Failure to carry out these safety checks could lead to the death of an occupant and prosecution of the Technician.

This check sheet specifies the minimum checks and actions that must be carried out during installation of CWI to buildings containing fuel-burning appliances.

Assessment, Identify and record

- fuel type(s) Gas – Oil – Coal - Wood
- appliance type(s) Boiler – Gas Fire – Open Fire – Balance Flue
- flue/chimney locations(s) Internal wall – External wall, front, side, rear
- location of combustion air ventilator(s) Front elevation – Side elevation – rear elevation

Pre-installation

Comments

- |  |     |
|--|-----|
| • appliance identified, flue/chimney routes, internal and external | Y/N |
| • appliance run  | Y/N |
| • view and note flame colour                                       | Y/N |
| • combustion gases checked externally                              | Y/N |
| • appliance checked (smoke test/spillage test)                     | Y/N |
| • smoke / spillage test satisfactory                               | Y/N |
| • combustion air supply adequate.                                  | Y/N |

Installation — Visually Check

- |   |     |
|---|-----|
| • flue, chimney routes to avoid drilling into them  | Y/N |
| • flue, chimney routes to avoid ingress of material | Y/N |
| • combustion air ventilator(s) unobstructed.        | Y/N |

Post installation

- |   |     |
|---|-----|
| • appliance(s) run at maximum for a minimum of five minutes   | Y/N |
| • visual check that flame compares with pre-installation      | Y/N |
| • smoke test/spillage test satisfactory                       | Y/N |
| • if results were unclear, re-test after a further 10 minutes | Y/N |
| • re-test satisfactory.                                       | Y/N |

If there is any doubt or any question answered 'N' then —

1. Switch OFF appliance and
2. Issue WARNING NOTICE and
3. ADVISE occupants and owner, and
4. CALL OUT a competent body or person such as fuel supplier or maintenance contractor (e.g. GAS SAFE for gas).

Installation address:

.....

Name of Technician:.....Signature:..... Date: ...../20.....

#### APPENDIX 4

BBA Approved Cavity Assessment Surveyor Scheme report form.

The BBA have designed a property assessment template that is compliant with PAS2030:2017 and the assessment and surveillance scheme for approved installers of cavity wall insulation. This may be used by the installer to assist them in the pre install assessment of the property to be installed with cavity wall insulation.



## BBA CWI Approved Cavity Assessment Surveyor Scheme Report.

### General Assessment Details:

Customer name:		Date:	
Address:		Assessor Name:	
		Assessor ID:	
		Installer Name: (if known)	
		Installer Number: (if known)	
Landlord details (if different from above)		Property type:	
		Age of property:	
		Client contact telephone no.	

### Main House

	Please delete as appropriate			Please delete as appropriate	
Clean Cavity	Y / N		Narrow or Partial fill (please specify the type of insulation present)	Y / N	
Main house to be insulated	Y / N		Any areas to be excluded (to be shaded on the survey form)	Y / N	
Cavity width Front		Cavity width R/ H side	Cavity width L/H side		Cavity width Rear

### Extension(s)

	Please delete as appropriate			Please delete as appropriate	
Clean Cavity	Y / N		Narrow or Partial fill (please specify the type of insulation present)	Y / N	
Extension to be insulated	Y / N		Any areas to be excluded (to be shaded on the survey form)	Y / N	
Cavity width Front		Cavity width R/ H side	Cavity width L/H side		Cavity width Rear

### Construction

	Main building	Extension		Main building	Extension
Brick			Mortar colour		
Render			Render colour		
Recon stone			Tyrolean		
Natural stone			Raked mortar		

**Site specific question**

Is there any remedial action required? (if yes Please specify on the CASS remedial form).	(Please delete) Y / N	
Are there any asbestos containing materials present that could be affected by the installation of CWI? If yes please specify.	Y / N	
Are there any Safety alarms installed at the location?	Y/ N	
If yes, by enquiry with the customer, have they been tested in accordance with the alarm system design specification?	Y/ N	
Are there any protected species identified at the location that could be affected by the installation of CWI? If yes, please specify.	Y/ N	
Is there any existing damp present on internal rooms or external walls (other than those caused solely by condensation)? If yes please specify	Y / N	
Is there a suitable DPC, as per CIGA's technicians guide to best practice? If no please specify	Y / N	
Are guttering / downspouts in good repair with no signs of leaks, spills, or blockages? (Fenlock gutters should be lined). If no please specify	Y / N	
Will the installation compromise the functionality and / or safety of existing services? (Gas, electric, water telephone etc.) if yes please specify	Y / N	
Will the site layout or conditions impair the execution of the works? If yes please specify	Y / N	
Will the installation result in any non-compliance with building regulations e.g. relation to workmanship, materials structural stability, fire safety resistance to moisture; or any other requirements stated by the supplier? If yes please specify	Y / N	
Is the type, location, exposure and condition of the structure / property suitable for the cavity wall system to be installed? If no please specify	Y / N	
Have any areas to be omitted been agreed with the customer? If yes please specify on the CASS omitted areas form	Y / N	
Is neighbour access required and permission granted?	Y / N	
Any other access issues? (Site access / working at height, vehicle access /parking restrictions etc.) if yes please specify	Y / N	

**Assessor photo check list:**

	Please delete		Please delete
All external Elevations	Y / N	Guttering / downpipes	Y / N
Inner leaf walls with any issues	Y / N	Inside the cavity	Y / N
Loft space (walls and eaves)	Y / N / NA	DPC	Y / N
Fuel burning appliances and flues	Y / N / NA	Remedial sheet	Y / N / NA
Existing combustion ventilation	Y / N / NA	Omitted areas sheet	Y / N / NA

<b>Agrément certificate to be installed:</b>	
<b>Front</b>	<b>L/H side</b>
<b>R/H side</b>	<b>Rear</b>
<b>Plan</b>	<b>Additional info.</b>

### Calculations

Note: 1 scope hole per elevation or for non -standard cavities such as partial fill, 3 holes per elevation.	Cavity width (mm)			Area (m2)
Front				
Right hand side				
Left Hand side				
Rear				
Extension 1 (all elevations to be recorded)				
Extension 2 (all elevations to be recorded)				
Type of existing partial fill?	Total Area (M2)			

<b>Number of Cavity barriers required?</b>				<b>Indicate: Essential air vent (E)</b> <b>Other vents (V)</b> <b>Flues (F)</b> <b>Boroscope holes (X)</b> <b>Omitted areas to be shaded.</b>
<b>Internal drill?</b>	Y / N			
<b>Vent sizes</b>	9"x3"	9"x6"	9"x9"	
<b>Number of vents to sleeve?</b>				



**Ventilation.**

In accordance with PAS 2030:2017, Annex A.5 please check there is adequate ventilation prior to the installation taking place. Existing ventilation requirement should be recorded below.

Type of ventilation	Living room	Dining room	Study	Bed 1	Bed 2	Bed 3	Bed 4	Bed 5	Bathroom	En-suite	Other
Background											
Purge											

Additional ventilation required as per the requirements of PAS2030:2017 annex A.5?	(please delete) Y / N	
--	--------------------------	--

**Combustion appliances and Essential ventilation**

Please record details of combustion burning appliances and their ventilation requirements below

Appliance location?	Appliance make?	Appliance model?	Appliance K/W rating?	Adequate combustion ventilation?	Additional combustion ventilation required?

**Signatures**

This property has been assessed in accordance to the requirements of the assessment and surveillance scheme for approved installers of cavity wall insulation, and the relevant BBA certificate.	Assessor's Name.	
	Assessor's signature.	
	Date.	

This assessment has been explained to me, and I understand its content. I have been informed the BBA may contact me to arrange a visit to confirm the suitability of this property.	Customer's name:	
	Customer's signature:	
	Date:	

I confirm as lead technician that this property is suitable for installation in accordance with the relevant Agrément certificate, and the assessment and surveillance scheme for approved installers of cavity wall insulation.	Technician's name:	
	Technician's signature:	
	Date:	

**Quality Checks:**

Date		Technician			
Fibre:		Box Weight: (kg)	Box Time:		
Density: (k/gm3)		Batch number(s)			
Bead:	Head 1, Bead g/min	Glue ml/min	Head 2 bead g/min	Glue ml/mm	
Foam: Nozzle A	Temperature	No. of Strokes	Cream time	Density k/gm3	
Nozzle B	Temperature	No. of Strokes	Cream time	Density k/gm3	

#### 10.4.4 BBA Approved Assessor Scheme for Assessing the Suitability of Buildings for the Installation of Cavity Wall Insulation

British Board of Agrément  
Bucknalls Lane  
Watford  
Hertfordshire WD25 9BA

Tel: 01923 665300  
Fax: 01923 665301  
E-mail: [insulation@bba.star.co.uk](mailto:insulation@bba.star.co.uk)  
Website: [www.bbacerts.co.uk](http://www.bbacerts.co.uk)



## **BBA Approved Assessor Scheme for Assessing the Suitability of Buildings for the Installation of Cavity Wall Insulation**

**Issue 4: March 2015**

**Note: This document may be revised from time to time. Readers are advised to contact the British Board of Agrément to check that they have the latest edition.**

**Tel: 01923 665300 Fax: 01923 665301  
E-mail: [insulation@bba.star.co.uk](mailto:insulation@bba.star.co.uk)**

Authorised by: Brian Moore – Director of Operations

### **Terms and Conditions of Use**

Intellectual Property Rights, including Copyright, in “BBA Approved Assessors Scheme for Assessing the Suitability of Property for Cavity Wall Insulation” (hereinafter referred to as the Scheme), this Scheme Document and any other related documentation belong to the BBA.

This Scheme Document has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective.

You may view, read, print and copy this Scheme Document, for your own personal use and/or your business purposes. If a copy is passed to a third party, the BBA’s Intellectual Property Rights must be acknowledged. Use and copying of this Scheme Document is permitted only in accordance with these terms and conditions.

References in this Scheme Document to any Act of Parliament, Statutory Instrument, Directive or Regulation, British, European or International Standard, Code of Practice, manufacturers’ instructions or similar publication, are references to such publication in the form in which it was current at the date of this Scheme Document.

This Scheme Document is valid only within the UK.

The BBA makes no warranties, representations or undertakings in respect of this Scheme Document.

In no event will the BBA be liable for any direct or consequential loss or damage arising from its use or use of, or reliance on its content.

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## Definitions

For the purpose of this Scheme, the following definitions apply:

<b>Applicant</b>	A person who has applied to BBA to be assessed for Approval as a BBA Assessor.
<b>Assessment</b>	Assessment of buildings according to this Scheme Document.
<b>Assessor</b>	A person who is registered with and Approved by the BBA as being capable of assessing buildings according to this Scheme Document and is subject to surveillance
<b>BBA</b>	The British Board of Agrément.
<b>Building under Construction</b>	A building that has not been notified to the relevant Local Authority as complete.
<b>Certificate Holder</b>	A Company which holds a valid and relevant BBA Agrément Certificate.
<b>Customer</b>	A person, homeowner, company or organisation, on whose behalf the assessment is being undertaken.
<b>CWI</b>	Cavity Wall Insulation.
<b>Existing Buildings</b>	A building that has been notified in writing to the relevant Local Authority as complete. signifying compliance with the Building Regulations.
<b>Installation Manual</b>	The latest version of the Installation Manual prepared by the Certificate holder and approved by the BBA.
<b>Installer</b>	A company or organisation approved by the BBA for the installation of cavity wall insulation.
<b>Product</b>	The material used for insulating the cavity space.
<b>Report</b>	The Report prepared by the Assessor in accordance with the Scheme Document.
<b>Scheme</b>	The BBA Approved Assessor Scheme for Assessors of Buildings Suitable for the Installation of Cavity Wall Insulation.
<b>Scheme Document</b>	The BBA Scheme Document for the Assessment of Assessors of properties suitable for the installation of cavity wall insulation
<b>System</b>	A system that comprises the product, machinery and method of installation as defined in the Agrément Certificate for which there is an Installer or as agreed between the Certificate holder and BBA.

The singular includes the plural, and vice versa and the masculine includes the feminine, and vice versa.

Paragraph headings and bold are included for convenience only and do not affect interpretation of the Scheme Document.

## **Background Information**

### **BBA**

BBA offers a range of services that provide reassurance to UK users, specifiers, insurers and regulators of construction products and encourages the adoption of innovative construction solutions

More specifically BBA:

- Tests and assesses construction products against UK requirements or other relevant recognised documents, issuing Agrément Certificates for those products it considers are fit for purpose;
- Inspects and certifies manufacturers to confirm consistency of production; and inspects the installation of products through independent or government schemes.

### **BBA Agrément Certificates**

BBA Agrément Certificates provide BBA's independent opinion of the fitness for purpose of a product or system for use in the UK having assessed all relevant performance factors including as appropriate safety, installation, durability and other essential requirements.

### **Scheme Scope**

The Scheme provides for both a BBA Approved Installer to register their Assessors and third party Applicants who have demonstrated their ability to assess the suitability of buildings for the installation of CWI to become a BBA Approved Assessor.

For an Assessor to retain that status, the Assessor must successfully demonstrate ongoing compliance with the Scheme, including under surveillance.

Surveillance is carried out by BBA Inspectors, trained and experienced in the assessment of properties as described in this Scheme Document and with knowledge of CWI products and/or systems approved by the BBA

As a first step to becoming an Assessor, an Applicant must complete a BBA contract available on the BBA website from which it can be downloaded and printed; or by e-mail request to [insulation@bba.star.co.uk](mailto:insulation@bba.star.co.uk). BBA Approved Installers must advise the BBA of their Assessors by emailing their details to the same email address.

### **Statutory requirements**

The Scheme requires the Assessor to document what is required to comply with the statutory requirements applicable to the building to be insulated, for example relevant Building Regulations.

### **Responsibilities**

The responsibilities of the BBA, the Applicant and the Assessor are set out in this Document.

### **Enquiries**

Information about the BBA, the Scheme, the Scheme Document, Assessors and Agrément Certificates is available from the BBA.

### **Applicant**

The Applicant has to satisfy the BBA that they are competent to operate in accordance with the Scheme including at up to 4 site assessments carried out by the Applicant and observed by the BBA.

### **Assessor**

Ref: 15-01-02 Issue 4

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### **Responsibilities**

The Assessor is responsible for producing written assessment reports that shall document whether or not a building is suitable for the CWI to be installed and must identify and document related potential problems that may adversely affect the proper functioning of the building after completion of the installation, together with suitable corrective actions to be taken before installation.

### **Reporting**

The Report shall include, as a minimum:

- the name of the Assessor
- the name and address of the homeowner and the location of the building
- the Installer's details (if known)
- identification of essential ventilation openings that require sleeving or safeguarding before installation
- the position of all flues whether or not they are in service and measures that must be taken to safeguard their proper functioning
- where the installation will take place through the internal leaf
- reasons for omitting any areas from the installation of insulation
- the specification of any remedial action required before the installation of the insulation; responsibility for rectification shall be clearly stated
- a risk assessment, notifying the customer of any issues arising there from
- any special requirements/factors pertinent to the building in relation to the proposed installation, such as restricted access, etc.
- a statement as to whether or not the building is assessed as suitable for the installation of CWI; if not reasons shall be stated
- a signed declaration that the building has been assessed according to the requirements of the Scheme
- a signature from the homeowner that they have read and understood the contents of the report.

Before installation of the System, the homeowner shall be advised in writing of the information contained in the Report.

### **Competence**

The Assessor must demonstrate ongoing that he is fully conversant with the contents and requirements of the Scheme Document and all other factors that could affect the success of an installation, including but not restricted to:

- suitability and preparation of the site
- installation techniques
- repair and maintenance
- finishing work
- health & safety, including working at heights, PPE, risk assessments
- adherence to all statutory requirements applicable to the building to be insulated, for example the Building Regulations
- timely corrective action in relation to any issues raised by BBA
- maintaining formal records of all assessments, including dates undertaken.

The Assessor shall make available to the BBA on request records of all training and work carried out including as a minimum:

- the assessment reports completed by the Assessor
- customers' details

- the Assessor's instructions to Technicians
- records of training, the required qualifications and experience, including details of the manner in which the Assessor has obtained practical experience.

### **Scheme Requirements**

The Assessor must ensure that the building in which it is intended to install cavity wall insulation meets the requirements of this Scheme Document and the relevant BBA Agrément Certificate with respect to the following:

(a) **Height of wall** The Scheme encompasses the installation by Approved Installers of cavity wall insulation which is the subject of a BBA Agrément Certificate, in buildings not exceeding 12 metres in height. See note 1 below.

(b) **Water Penetration** All buildings that show or have shown evidence of water penetration to the internal leaf, the cause and symptoms of which have not been satisfactorily corrected shall be classified as unsuitable for installation.

(c) **Condition of cavity walls** The cavity walls to be filled shall be structurally sound and shall comply with the requirements of the relevant BBA Agrément Certificate in terms of location and minimum cavity width. The outer leaf shall be reasonably free from cracking, defective mortar, damaged rendering, spalled bricks or discharge of water from building features. Gutters, downpipes, overflows, etc. shall be in good functional order. The inner leaf shall be free of dampness, other than that directly attributed to condensation.

(d) **Protection of cavities** Where the fill will come up to underside of a feature, e.g. sill, floor slab or roof, it is essential that this feature should not permit water to penetrate the cavity at that level, since otherwise the top surface of the insulation could act as a bridge for water to cross the cavity.

(e) **Recent construction** Where less than one year has elapsed since first occupancy, not only should the building meet the recommendations of (a) to (d) above, but also it should have been designed and built following the recommendations of the appropriate British Standards Codes of Practice or British Standards.

(f) **Building under construction** The Assessor shall, where practical, before commencement of construction, assess the drawings and advise the designer in relation to the suitability for cavity wall insulation as described by the BBA Agrément Certificate and this Scheme and after construction has commenced and the cavity walls are substantially complete, visit the site to assess the building with the drawings according to the above.

(g) **Visible Defects** Any visible defects that could result in water penetration or rising damp shall be identified on the Report. If defects are found, the Assessor shall notify the customer in writing that appropriate remedial action must be undertaken before installation of the insulation. The building shall be deemed unsuitable until the defects are rectified.

(h) **Cavity Barrier** Where the BBA Agrément Certificate requires the insertion of a cavity barrier, the cavity barrier shall be retained in the cavity at the completion of the installation. The cavity barrier shall be of a type approved by the BBA, eg. 75, 100 or 150mm diameter polypropylene brush with a stainless steel wire core.

Note 1: Where buildings are above 12 metres high, installation may take place if the relevant Certificate holder has assessed the building as suitable and this is provided for in the relevant Agrément Certificate. In such cases, the Certificate holder must carry out an assessment and maintain a documented record that they have given approval for the installation to take place.

### **Surveillance**

The BBA shall witness annually during a one day assessment up to 4 satisfactory site assessments carried out by third party Approved Assessors.

The BBA will invoice for these site visits in advance and payment must be received prior to each visit taking place. Non-payment as required by BBA will result in the withdrawal of BBA approval.

BBA Approved Installer registered Assessors will be monitored as part of the BBA Approved Installers scheme surveillance requirements.

#### **Validity of BBA Approval of an Assessor**

The BBA can suspend or withdraw the approval of an Assessor if, without prejudice to the generality of the foregoing: BBA judges that the Assessor is considered unsuitable to continue as such; and annual or any additional surveillance fees are not paid by the when due.

In the event of suspension or withdrawal, the reason(s) for this decision will be given by the BBA to the Assessor in writing.

Termination or suspension of approval by the BBA under the Scheme will be notified to the Assessor in writing.

The Assessor shall not be entitled to use the BBA logo but can refer to being BBA Approved under the Scheme (the full name of which must be stated).

#### **Conditions of approval**

The singular includes the plural, and vice versa.

**The BBA shall be entitled to suspend or revoke its approval of an Assessor at any time by notice in writing to the assessor, and without prejudice to the generality of the foregoing may suspend or revoke the approval by notice if:**

- (a) there is a non-compliance by the Assessor with the content of the BBA Agrément Certificate under which the Assessor is assessing the suitability of the property;
- (b) there is non-compliance by the Assessor with the relevant BBA Scheme Document, as may be changed from time to time by the BBA;
- (c) any information becomes available which was not at the disposal of the BBA prior to its approval of the Assessor being approved;
- (d) the Assessor or Assessor company fails to pay to the BBA any Fees within the time limits determined by the BBA; or
- (e) the Assessor goes into liquidation or has a receiver or administrator appointed over any part of its business, property or assets.

**The BBA's entitlement to suspend or revoke an approval described above also applies to the following. BBA approved Assessors must co-operate with the BBA and provide any information it requests related to the Scheme and without prejudice to the generality of the foregoing must:**

- (a) provide the BBA with any information requested that demonstrates compliance with the Scheme, the BBA Agrément Certificate under which the Assessor is assessing and Building Regulations;
- (b) have, maintain and make available to the BBA clear, easy to understand literature and documentation, in particular for work that is outside the scope of their BBA Approval;
- (c) reference the BBA and use the relevant BBA logo only in accordance with the BBA Guidelines relating thereto; and
- (d) allow the BBA to carry out surveillance as determined by the BBA;

**The BBA's entitlement to suspend or revoke an approval described above also applies to the following. BBA approved Assessors must not contravene any Scheme requirements and without prejudice to the generality of the foregoing must not :**

- (a) in the opinion of the BBA bring its name into disrepute;
- (b) misrepresent their BBA approval; or

(c) promote themselves as, or state or imply in any way that they are BBA approved if promoting, seeking, carrying out or giving notification of work outside the scope of their BBA approval;

#### License

While the Approval is valid, the BBA grants to the Assessor a non-exclusive license to:

(a) use the BBA Logo strictly in accordance with the current or later versions of the "BBA Brand Guidelines" document (a copy of which is on the BBA's website); and

(b) disclose, publish and make known to any third parties that it is a BBA Approved Assessor.

This license can be suspended or revoked at any time by the BBA including and without prejudice to the generality of the foregoing upon the suspension or revocation or expiry of the Approval.

#### Further Guidance and Training

The Cavity Insulation Guarantee Agency (CIGA) produce a useful guide to undertaking assessments titled Suitability of External Walls for Filling with Cavity Wall Insulation: Part 1 Existing Buildings Assessors Guide which can be purchased from;

Cavity Insulation Guarantee Agency  
CIGA House  
3 Vimy Court  
Vimy Road  
Leighton Buzzard  
LU7 1FG  
Telephone: 01525 853300  
[www.ciga.co.uk](http://www.ciga.co.uk)

#### Revision History (in reverse chronological order)

Issue	Date	Nature and location of change
4	02/03/2015	Document reformatted and assigned document number. Authoriser and revision history table added.
3	22/04/2013	Previous issue – revisions not recorded.

10.4.5 Cavity Assessment Surveillance Scheme (CASS®)



**CAVITY ASSESSMENT  
SURVEILLANCE SCHEME (CASS®)**

(15-01-20)

**British Board of Agrément  
Bucknalls Lane  
Watford  
Hertfordshire WD25 9BA**

**Note: This document may be revised from time to time, Readers are advised to contact the British Board of Agrément to check the latest edition.**

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**website: [www.bbacerts.co.uk](http://www.bbacerts.co.uk)**

Author: Geoff Chambers  
Checked by: Claire Aizlewood  
Authorised by: Brian Moore

### Revision History (in reverse chronological order)

Issue	Date	Nature and Location of Change
6	26/10/2017	Addition of partial fill photograph requirement.
5	18/07/2017	Inclusion of BBA survey form
4	31/05/2017	Document updated with PAS2030:2017 references. Requirement to identify combustion appliances in the assessment. Update to appeals process.
3	26/04/2017	Document revisions & alignment with other scheme documents
2	09/02/2017	Document revisions, pp3-8
1	04/05/2016	Document creation

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## 1.0 TERMS AND CONDITIONS OF USE

Intellectual Property Rights, including Copyright, in the “BBA Cavity Assessment and Surveillance Scheme” (CASS®) (hereinafter referred to as the Scheme), this Scheme Document and any other related documentation, belong to the BBA.

This Scheme Document has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective.

You may view, read, print and copy this Scheme Document, for your own personal use and/or your business purposes. If a copy is passed to a third party, the BBA’s Intellectual Property Rights must be acknowledged. Use and copying of this Scheme Document is permitted only in accordance with these terms and conditions.

References in this Scheme Document to any Act of Parliament, Statutory Instrument, Directive or Regulation, British, European or International Standard, Code of Practice, manufacturers’ instructions or similar publication, are references to such publications in the form in which they were current at the date of this Scheme Document.

This Scheme Document is valid only within the UK.

The surveillance and audit process is based on the information submitted by the Assessor and whilst BBA takes reasonable steps to ensure the compliance of Assessors with the terms of the scheme BBA cannot be held responsible for submission of false or inaccurate information by Assessors.

The BBA makes no warranties, representations or undertakings in respect of this Scheme Document.

In no event, will the BBA be liable for any direct or consequential loss or damage arising from the use of this Document or use of, or reliance on, its content.

## 2.0 BACKGROUND INFORMATION

### BBA

BBA offers a range of services that provide reassurance to UK users, specifiers, insurers and regulators of construction products and encourages the adoption of innovative construction solutions

More specifically BBA:

- Tests and assesses construction products against UK requirements or other relevant recognised documents, issuing Agrément Certificates for those products it considers are fit for purpose;
- Inspects and certifies manufacturers to confirm consistency of production, and inspects the installation of products through independent or government schemes.

### BBA Agrément Certificates

BBA Agrément Certificates provide BBA’s independent opinion of the fitness for purpose of a product or system for use in the UK having assessed all relevant performance factors including as appropriate safety, installation, durability and other essential requirements.

### BBA Cavity Assessment Surveillance Scheme (CASS®)

Experience has shown that with regards to the retrofitting of cavity wall insulation, in some cases, consumer confidence is being undermined by the perception that insulation is being installed into properties which are unsuitable.



To seek improvement in this area and to increase consumer confidence, the BBA has developed a Cavity Assessment Surveillance Scheme (CASS®) covering Property Assessments. CASS® will check a proportion of Assessments at the beginning of the process in order to check the suitability of properties proposed by Property Assessors for cavity wall insulation and it will provide independent third party validation of suitability. Property Assessors can register for the Scheme via an online platform, described in this document.

### 3.0 DEFINITIONS

#### Definitions

For the purpose of this Scheme, the following definitions apply:

Abbreviation or term	Explanation of abbreviation or term
Applicant	A person who submits an application to the BBA CASS® platform in order to obtain a unique property Assessor number
Assessor	A person whose application has been successful and is deemed competent to assess buildings in compliance with the Scheme requirements
Assessment	Assessment of a building for the installation of Cavity Wall Insulation
BBA	British Board of Agrément
Certificate Holder	A Company which holds a valid and relevant BBA Agrément Certificate
Challenge	Means a challenge to the outcome of a desktop assessment or site surveillance visit
CITB	Construction Industry Training Board
Complaint	Means a complaint about the way or manner in which CASS® or the desktop Assessor or the Inspectors have operated
Customer	A person, homeowner, company or organisation, on whose behalf the assessment is being undertaken
CWI	Cavity Wall Insulation
Existing Buildings	A building that has been notified in writing to the relevant Local Authority as complete, signifying compliance with the Building Regulations
Installation Manual	The latest version of the Installation Manual prepared by the Certificate holder and approved by the BBA
Installer	A company or organisation approved by the BBA for the installation of cavity wall insulation
MTC CWI 1	Minimum Technical Competences to Determine the suitability of a building for Cavity Wall Insulation Work
Product	The material used for insulating the cavity space
Report	The property assessment prepared by the Assessor in accordance with this Scheme Document
Scheme	The BBA Cavity Assessment and Surveillance Scheme (CASS®)
Scheme Document or Document	The BBA Scheme Document for the surveillance of Assessments of properties by the Assessor
System	A system that comprises of the product, machinery and method of assessment and installation as defined in the Agrément Certificate for which there is an Installer or as agreed between the Certificate Holder and BBA
UAR	Unique Assessment Reference

The singular includes the plural, and vice versa and the masculine includes the feminine, and vice versa.

Paragraph headings and bold are included for convenience only and do not affect interpretation of the Scheme Document.

#### **4.0 REFERENCE DOCUMENTS**

CASS® 01 Omitted areas (see appendices)

CASS® 02 Remedial works (see appendices)

CASS® 04 Householder Consent Form DPA (see appendices)

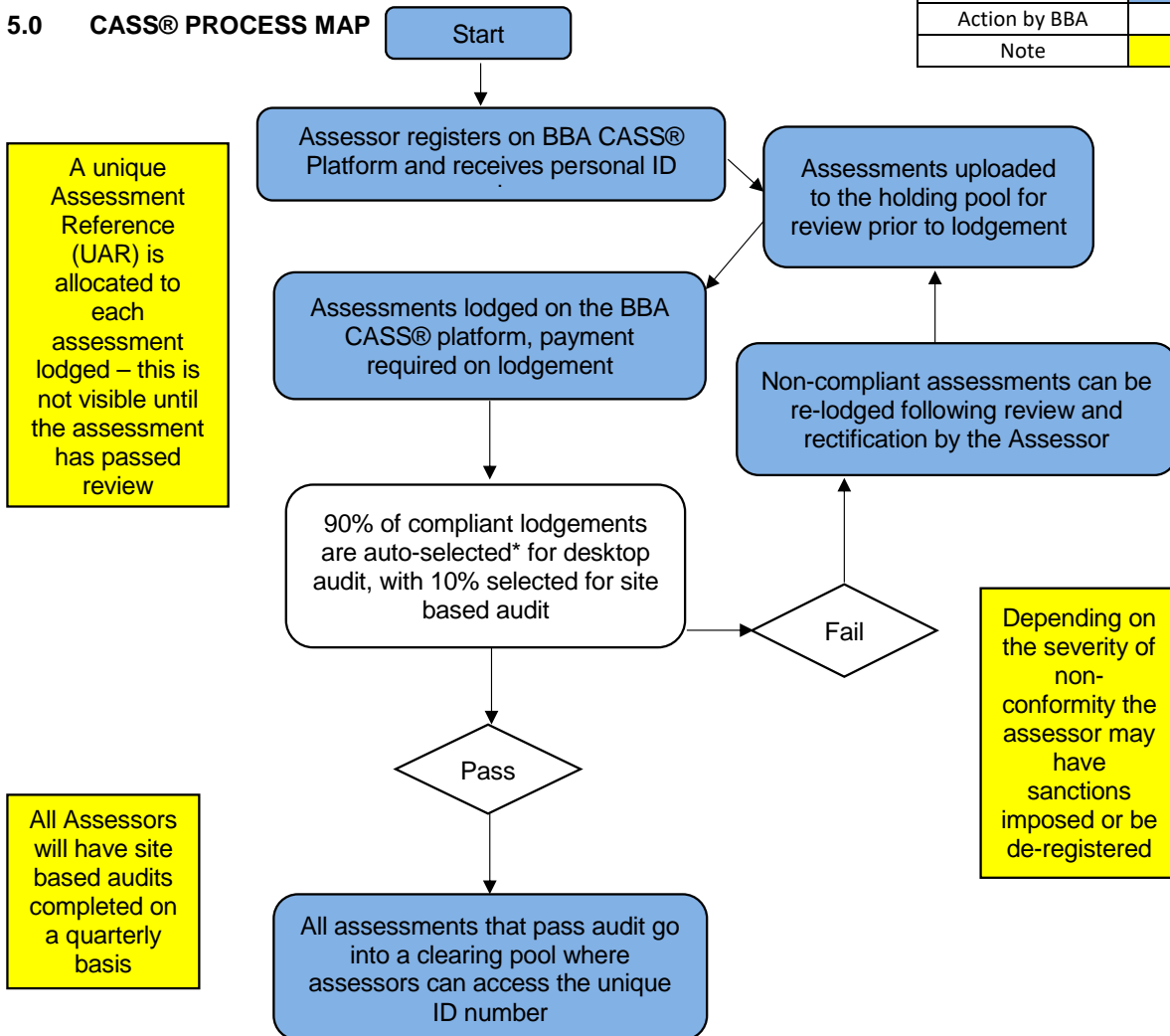
CITB: MTC – Annex - CWI 1 Minimum Technical Competences to Determine the suitability of a building for Cavity Wall Insulation Work

CIGA Guides to Best Practice

PAS2030:2017 Specification for the installation of energy efficiency measures (EEM in existing buildings)

5.0 CASS® PROCESS MAP

Action by Assessor	
Action by BBA	
Note	



\*The system automatically checks the responses to the questions, including whether required documents have been uploaded. Any irregularity in the responses, or questions answered, in a negative way about the suitability of the property is either automatically rejected at that point or drawn to the Auditor’s attention.

As a first step the applicant should log onto the BBA CASS® Platform and complete the registration section to obtain a unique BBA Property Assessor ID number. There is no charge to register as a property Assessor but for the application to be successful and to obtain the BBA ID number the applicant must provide corroborating evidence of technical competence as defined within this Scheme Document, PAS2030 and the Certificate Holder’s installation manual (as defined in section 6). Access to the BBA CASS® Platform can be found via [www.BBACASS.co.uk](http://www.BBACASS.co.uk)

Each time an assessment is lodged for review on the BBA CASS® platform payment will be required via a PayPal account or similar online payment portal.

The Scheme provides a validation process that checks if the information submitted by an Assessor on a property assessment lodged on the BBA CASS® Platform is compliant with the requirements set out in this Scheme. Where the assessment is not suitable, it will be returned to the Assessor for review with possible sanctions imposed by the BBA. Any appeal must be made within 5 working days of the initial rejection, or the assessment will have to be re-lodged.

All assessments are subject to Auto-Validation during assessment. Following lodgement 90% of all assessments will be randomly selected for an in-depth desk top audit by the Auditor. With 10% of assessments lodged, receiving an on-site visit by an appropriately qualified BBA Inspector. The site audit will be carried out by the inspection department to validate the assessment report content, Assessor competence and compliance with scheme requirements.

Site surveillance audits are carried out by BBA Inspectors, trained and experienced in the assessment of properties as described in this Scheme Document and with extensive knowledge of CWI products and/or systems approved by the BBA. All Assessors will have site based audits completed on a quarterly basis.

Where the site surveillance visit identifies non-compliance with the Scheme requirements the assessment will be returned to the Assessor via the Platform with comments for review and rectification by the Assessor along with any sanctions deemed appropriate. Any appeal must be made within 5 working days of the initial rejection, or the assessment will have to be re-lodged.

Following rectification and re-submission (where applicable) of the assessment by the Assessor the site may have a subsequent visit completed by the inspection department to ensure compliance to Scheme requirements thus allowing for the non-compliance to be closed.

Where the re-visit by the inspector finds continued non-compliance with the issues raised sanctions will be implemented.

All assessments lodged for audit go into a clearing pool on the fourth working day, where assessors can access the UAR issued for progressing to installation stage.

For an Assessor to retain registration in the BBA CASS® Scheme, the Assessor must successfully demonstrate ongoing compliance with the Scheme.

## **6.0 SCHEME REQUIREMENTS (GENERAL)**

### **Statutory requirements**

The Scheme requires the Assessor to accurately document what is required to comply with the statutory requirements applicable to the building to be insulated, for example relevant Building Regulations.

### **Responsibilities**

The responsibilities of the BBA, the Applicant and the Assessor are set out in this Document.

### **Enquiries**

Information about the BBA, the Scheme, the Scheme Document, Assessors and Agrément Certificates is available from the BBA.

### **Applicant**

The Applicant must satisfy the BBA that they are competent to operate in accordance with the Scheme. 100% of registered assessments will be subject to auto-validation on lodgement with a percentage of those deemed

valid selected for site surveillance by the BBA, to validate the assessment report content, Assessor competence and compliance with Scheme requirements.

### **Assessor Responsibilities**

The Assessor is responsible for producing and uploading assessment reports, automatically dated, and GPS photographic evidence that shall document whether or not a building is suitable for the CWI to be installed.

The Assessor is at all times responsible for ensuring the accuracy of data and evidence that it submits under the Scheme and for ensuring that each Assessment complies with all statutory requirements and the specific requirements and terms of the Scheme.

### **Assessment**

The Assessment Report shall include, as a minimum:

- the name of the Assessor;
- the Assessor registration number;
- the name and address of the homeowner and the location of the building;
- consent from the householder for BBA to process their personal data (see Appendix CASS® 04 – householder consent form DPA);
- the Installer's details (if known);
- identification of essential ventilation openings that require sleeving or safeguarding before installation including any additional combustion ventilation required and the agreed location with the customer;
- the position of all flues whether or not they are in service and measures that must be taken to safeguard their proper functioning;
- the identification of all combustion burning appliances within the dwelling to be insulated, the kW input rating of the appliance (for gas appliances) or the kW output of the appliance (for solid fuel appliances). Their location(s) should be clearly marked or recorded on the assessment for;
- confirmation that all internal rooms and external elevations have been checked and that no areas of existing damp are present (other than those caused solely by condensation);
- where the installation will take place through the internal leaf;
- areas of the building(s) to remain un-insulated shall be shown with the reasons why the installation could not take place. It must include a signature from the customer agreeing these exclusions including evidence that the customer has been informed of the possible ramification of omitting said areas, (see Appendix CASS® 01 Omitted Areas);
- areas where an internal examination of the cavity has been performed (minimum of one scope inspection per elevation for Standard Cavities and a minimum of three per elevation for Narrow and Partial Fill Cavities) and the results of each examination.
- A clear photograph of the inside of the cavity must be provided for all assessments.
- Where existing partial fill cavities are being assessed, the assessor should also confirm the type of existing insulation that is present in the cavity.
- the specification of any remedial action required before the installation of CWI. The responsibility for rectification shall be agreed with the customer in writing at the time of noting such actions, (see Appendix CASS® 02 Remedial Works);
- a risk assessment, notifying the customer of any issues arising therefrom;
- any special requirements/factors pertinent to the building in relation to the proposed installation, such as restricted access, etc;
- a statement as to whether or not the building is assessed as suitable for the installation of CWI; if not, reasons shall be stated;
- a signed declaration by the Assessor that the building has been assessed according to the requirements of the relevant Agrément Certificate and this Document;
- a space for the assessment to be countersigned later by the installing Technician prior to installation of the CWI, as final acceptance that the property is suitable for installation in accordance with the

- relevant Agrément Certificate and this Document;
- a signature from the homeowner confirming that they have read and understood the contents of the report.

Before installation of the System, the customer shall be supplied with a copy of the completed assessment report.

### **Competence**

The Assessor must demonstrate that they are fully conversant with the contents and requirements of the Scheme Document and all other factors that could affect the success of an installation.

Required areas of competence include, but are not restricted to:

- suitability and preparation of the site
- installation techniques
- repair and maintenance
- finishing work
- health & safety, including working at heights, PPE, risk assessments
- adherence to all statutory requirements applicable to the building to be insulated, for example the Building Regulations

In addition, the Assessor shall:

- satisfy the requirements of Cavity Wall Insulation – Common Minimum Technical Competency Requirements (CITB MTC CWI 1)
- provide timely corrective action in relation to any issues raised by BBA
- maintain formal records of all assessments, including dates undertaken.
- upload up-to-date corroborating evidence of the above competence onto the Platform.

### **BBA Responsibilities**

The BBA has responsibility for assessing, appointing and maintaining the membership of the Scheme on the basis set out in this document.

Details of the membership will be made available on the BBA website.

The Scheme will involve the BBA assessing the ability of an Assessor to meet the requirements of the Scheme Document. The Assessor must be able to demonstrate that they are fully compliant with the registration Criteria.

The BBA is responsible for checking that the properties are assessed according to the Technical Requirements of the Scheme. The site based surveillance audit and re-site based surveillance audit as appropriate of the BBA CASS® Registered Assessors Property Assessment is undertaken by the inspection Body's own inspectors who are trained and experienced in the assessment and installation techniques. Further details can be found within the main text of this document.

## 7.0 SCHEME REQUIREMENTS (SPECIFIC)

The Assessor must ensure that the building in which it is intended to install cavity wall insulation meets the requirements of this Scheme Document and the relevant BBA Agrément Certificate with respect to the following:

(a) **Height of wall** The Scheme encompasses the Assessment by Registered Assessors of cavity wall insulation which is the subject of a BBA Agrément Certificate, in buildings not exceeding 12 metres in height. See note 1 below.

(b) **Water Penetration** All buildings that show or have shown evidence of water penetration to the internal leaf, the cause and symptoms of which have not been satisfactorily corrected shall be classified as unsuitable for installation.

(c) **Condition of cavity walls** The cavity walls to be filled shall be structurally sound and shall comply with the requirements of the relevant BBA Agrément Certificate in terms of location and minimum cavity width. The outer leaf shall be reasonably free from cracking, defective mortar, damaged rendering, spalled bricks or discharge of water from building features. Gutters, downpipes, overflows, etc. shall be in good functional order. The inner leaf shall be free of dampness, other than that directly attributed to condensation.

(d) **Protection of cavities** Where the fill will come up to underside of a feature, e.g. sill, floor slab or roof, it is essential that this feature should not permit water to penetrate the cavity at that level, since otherwise the top surface of the insulation could act as a bridge for water to cross the cavity.

(e) **Recent construction** Where less than one year has elapsed since first occupancy, not only should the building meet the recommendations of (a) to (d) above, but also it should have been designed and built following the recommendations of the appropriate Building Regulations.

(f) **Visible Defects** Any visible defects that could result in water penetration or rising damp shall be identified on the Remediation Report. If defects are found, the Assessor shall notify the customer in writing that appropriate remedial action must be undertaken before installation of the insulation. The building shall be deemed unsuitable until the defects are rectified.

(g) **Cavity Barrier** Where the BBA Agrément Certificate requires the insertion of a cavity barrier, the Assessor should identify the location of the required barrier and record it on the assessment.

(h) **(Narrow/Partial fill)** When assessing Narrow cavities, the assessment shall be completed in compliance with the relevant BBA certificate and CIGA's Technical note Narrow Cavities May 2013 v1. Where the cavity is partially filled, the assessment shall be completed in compliance with the relevant BBA issued certificate and CIGA's Technical Note, Partially Filled Cavities Apr 2013 v1.

(i) **(Registration Criteria)** The following will be a minimum requirement for registration:

- Current BDC/CRB (Basic Disclosure Check/Criminal Records Check)
- Annex CWI 1 – Common Minimum Technical Competency Requirement – Determine the Suitability of a Building for Cavity Wall Insulation Work: With routes to competence as shown in PAS2030 B1-I3
- Narrow and/or Partial Fill Cavities, evidence to corroborate competence if applicable.

Note 1: Where buildings are above 12 metres high, installation may take place if the relevant Certificate holder has assessed the building as suitable and this is provided for in the relevant Agrément Certificate. In such cases, the Certificate holder must carry out an assessment and maintain a documented record that they have given approval for the installation to take place. This assessment is not required to be uploaded on to the BBA CASS® Platform for review.



## 8.0 VALIDITY OF BBA REGISTRATION OF AN ASSESSOR

The BBA can suspend or withdraw the approval of an Assessor if, without prejudice to the generality of the foregoing, BBA judges that the Assessor is considered unsuitable to continue as such.

Termination or suspension of Registration by the BBA under the Scheme will be notified to the Assessor by email or letter.

## 9.0 CONDITIONS OF REGISTRATION

All applicants will be subject to a pre-registration review (refer to Scheme Requirements Specific (h) & (i) above). Following a satisfactory review, the Assessor will be Registered on the Platform and issued with a BBA Assessor number.

Where the application is deemed unsatisfactory following the review, the applicant will be informed of the reasons. Re-application is permitted if unsuccessful.

The BBA shall be entitled to suspend or revoke its registration of an Assessor at any time by notice in writing to the Assessor, and without prejudice to the generality of the foregoing may suspend or revoke the registration by notice if:

- (a) Information detrimental to the successful registration becomes available which was not at the disposal of the BBA prior to its Registration of the Assessor.
- (b) Non-payment of fees.
- (c) The Assessor goes into liquidation or has a receiver or administrator appointed over any part of its business, property or assets.
- (d) Non-compliance with the Scheme requirements, as set out within this Scheme Document.
- (e) Non-compliance by the Assessor with the relevant BBA Scheme Document, as may be changed from time to time by the BBA.

BBA Registered Assessors found to be non-compliant with the Scheme requirements may at the discretion of the BBA be subject to additional surveillance visits to monitor compliance with Scheme requirements. Continuous compliance with BBA Scheme requirements may result in the number of annual assessments being reduced.

The BBA's entitlement to suspend or revoke a registered Assessor described above also applies to the following. BBA Registered Assessors must co-operate with the BBA and provide any information it requests relating to the Scheme and without prejudice to the generality of the foregoing must:

- (a) provide the BBA with any information requested that demonstrates compliance with the Scheme, the BBA Agrément Certificate under which the Assessor is assessing and Building Regulations;
- (b) have, maintain and make available to the BBA clear, easy to understand literature and documentation;
- (c) allow the BBA to carry out surveillance as determined by the BBA.

The BBA's entitlement to suspend or revoke the registration described above also applies to the following. BBA registered Assessors must not contravene any Scheme requirements and without prejudice to the generality of the foregoing must not:

- (a) in the opinion of the BBA bring its name into disrepute;
- (b) misrepresent their BBA registration; or
- (c) promote themselves as, or state or imply in any way that they are BBA registered if promoting, seeking, carrying out or giving notification of work outside the scope of their BBA registration.

### **Data Protection**

You acknowledge that, as part of any assessment, you will be required to obtain and provide to BBA personal data which may include the personal details (names, addresses and other contact details) of householders. You agree to comply with the BBA CASS® Data Protection Policy and relevant obligations under the Data Protection Act 1998 and associated codes of practice when processing personal data relating to any householder.

You shall only collect personal data of householders using the forms provided by BBA which contain a data protection notice and set out the purpose for which the data will be used. You must promptly input such personal data accurately using the platform provided by BBA and retain the original forms in a secure manner in accordance with the seventh data protection principle. You shall comply with any request from BBA to transfer or delete such personal data and shall immediately notify BBA if any personal data is lost or destroyed. If you fail to comply with any such request, BBA reserves the right to delete or alter a record.

You shall indemnify BBA against all costs, claims, damages, expenses or fines for which BBA becomes liable to the extent that these are due to any failure by you to comply with any of your obligations under these Data Protection Obligations.

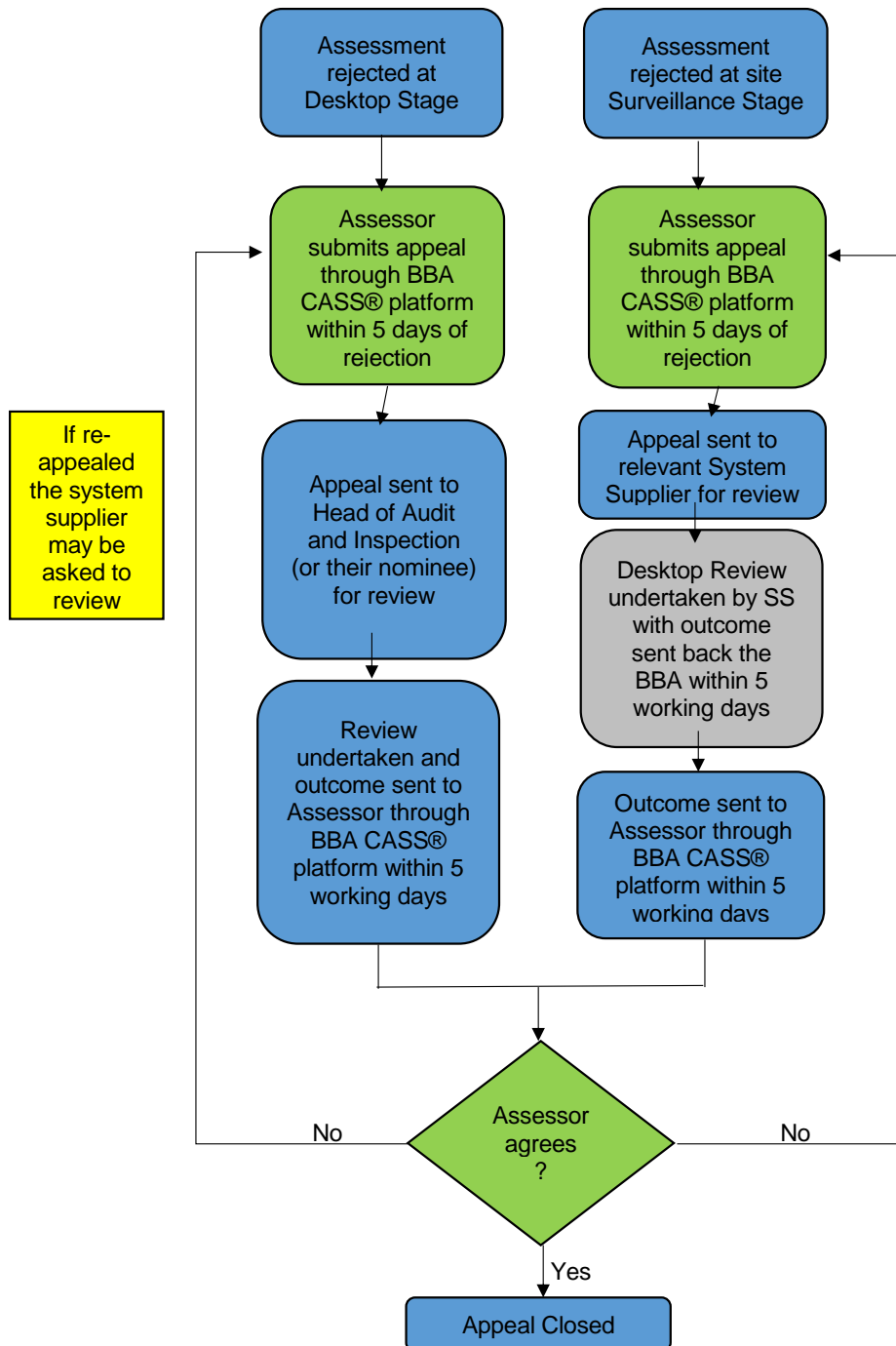
You acknowledge that all personal data relating to householders is and shall remain confidential and you undertake not to use or disclose such personal data except as set out in the BBA CASS® Scheme Document and the BBA CASS® Data Protection Policy.

You may disclose personal data relating to householders to BBA registered cavity wall insulation installers in order for such installers to contact householders with information about their services where the informed consent of the householder for that disclosure has been obtained.

You also acknowledge that you may be required to provide personal data relating to yourself to BBA in order for BBA to carry out its obligations under the BBA CASS®. You agree to provide personal data to BBA as required and consent to BBA holding and processing data relating to you for legal, personnel, administrative and management purposes. BBA may transfer such personal data to its agents and third parties as required for these purposes

10.0 BBA CASS® APPEAL PROCESS MAP

Action by BBA	
Action by SS	
Action by assessor	
Note	



### Appeals process:

- (a) An Applicant may challenge a decision for non-approval of registration to the Scheme by completing the Appeal process on the BBA CASS® Platform.
- (b) A Registered Assessor may challenge a decision by the BBA to reject an assessment of suitability for installation of CWI, either at desktop audit stage or at site surveillance stage (by completing the Appeal process on the BBA CASS® Platform).
- (c) Appeals received relating to the desk top surveillance will be reviewed by the Head of Audit & Inspection or their nominee.
- (d) Following the review and within five working days, the results will be forwarded to the Assessor.
- (e) Appeals received relating to the failure of an assessment following the site surveillance visit, will have a desktop review completed by the System Supplier's representative (see flowchart above), for the system proposed for the installation.
- (f) Following the System Suppliers desktop review and within five working days, the results will be forwarded to the Assessor.
- (g) Where the system supplier is not available, the challenge will be reviewed by an appropriately qualified BBA representative, with the results of the review forwarded to the Assessor.
- (h) A Registered Assessor may appeal a decision by the BBA to impose sanctions or to de-register the Assessor.

The appellant will be advised of the outcome following the review as soon as possible.

- (i) A single re-appeal to an appeal outcome is permitted in any of these situations, if there is new evidence to support the appeal, or if the Assessor has other reasonable grounds on which to challenge the outcome.

Complaint issues should be directed through the BBA website.

### 11.0 FURTHER GUIDANCE AND TRAINING

System Suppliers may offer Assessor training for their own systems.

The Cavity Insulation Guarantee Agency (CIGA) also offer Assessor training:

Cavity Insulation Guarantee Agency  
CIGA House  
3 Vimy Court  
Vimy Road  
Leighton Buzzard  
LU7 1FG  
Telephone: 01525 853300  
[www.ciga.co.uk](http://www.ciga.co.uk)

## 12.0 APPENDICES

CASS® 01 Omitted Areas

CASS® 02 Remedial Works

CASS® 04 Householder Consent Form DPA

CASS® Data Protection Policy

**CASS® 01 - Omitted Areas**

Dear Customer: Name: \_\_\_\_\_ Date: \_\_\_\_\_

Following the assessment of your property for the suitability to have Cavity Wall Insulation installed at:

Address: \_\_\_\_\_  
\_\_\_\_\_

The following area/s of applicable cavity wall for the installation of Cavity Wall Insulation have been identified for omitting from the installation for the following reasons.

Area) \_\_\_\_\_

Reason for Omitting) \_\_\_\_\_

Area) \_\_\_\_\_

Reason for Omitting) \_\_\_\_\_

Area) \_\_\_\_\_

Reason for Omitting) \_\_\_\_\_

Percentage of measure installed) \_\_\_\_\_

All of the issues recorded above relating to the agreed omitted areas have been explained to you by the Assessor with the possible ramifications associated with the decision to omit said applicable areas.

I affirm that I have explained to the customer the possible ramifications and implications associated with the omitting of Insulation from the applicable areas as recorded above.

Assessor's name: Print: \_\_\_\_\_ Sign: \_\_\_\_\_

I have received full explanation and understand the ramifications and implications associated with the omitting of Insulation from the applicable areas as recorded above.

Customer's signature: \_\_\_\_\_ Date: \_\_\_\_\_

**CASS® 02 - Remedial Works**

Dear Customer: Name: \_\_\_\_\_ Date: \_\_\_\_\_

Following the assessment of your property for the suitability to have Cavity Wall Insulation installed at:

Address: \_\_\_\_\_  
\_\_\_\_\_

The following remedial action need to be completed prior to the installation of cavity wall insulation, ensuring compliance with good practice, system designer and industry requirements.

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_

All of the issues recorded above have been explained to yourself by the Assessor with the remediation actions required and must have the remediation works completed before the Cavity Wall Insulation is installed.

Item no's \_\_\_\_\_ will be completed by the occupant/owner.

Item no's \_\_\_\_\_ will be completed by another agreed entity.

I affirm that I have explained to the customer the reason for and remediation action required regarding the items recorded above to ensure the suitability of the property to have cavity wall insulation installed.

Assessors name: Print: \_\_\_\_\_ Sign: \_\_\_\_\_

I have received full explanation and understand the remediation actions I need to complete prior to the installation of cavity wall insulation.

Customers signature: \_\_\_\_\_ Date: \_\_\_\_\_



## **CASS® 04 - Householder Consent Form DPA**

British Board of Agrément (BBA), Bucknalls Lane, Watford, Herts WD25 9BA is the data controller for the purpose of the Data Protection Act 1998.

As part of the BBA's Cavity Assessment Surveillance Scheme (CASS®), a registered CASS® Assessor will visit your property to assess whether it is suitable for cavity wall insulation.

BBA will process the personal data that you provide in accordance with the CASS® Data Protection Policy, a copy of which is available from BBA on request. In particular, BBA may use information it holds about you (including your name and address) for the purpose of recording that your property has been assessed under the CASS®. BBA may disclose your details to third parties (including government and regulatory bodies) in order to administer the CASS®.

Please address any questions, comments and requests regarding BBA's data processing practices to BBA at the address stated above.

Please **tick here** to confirm that you consent to your personal data being used by BBA as stated above.

Please **tick here** if you are happy for BBA to contact you with information about other goods and services which we feel may be of interest to you.

Please **tick here** if you are happy for BBA to disclose your personal data to selected third parties so that they can provide you with information about their goods or services.

Customer's Name \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Customer's Signature \_\_\_\_\_ Date \_\_\_\_\_

## BBA CWI Approved Cavity Assessment Surveyor Scheme Report.



### General Assessment Details:

Customer name:		Date:	
Address:		Assessor Name:	
		Assessor ID:	
		Installer Name: (if known)	
		Installer Number: (if known)	
Landlord details (if different from above)		Property type:	
		Age of property:	
		Client contact telephone no.	

### Main House

	Please delete as appropriate			Please delete as appropriate	
Clean Cavity	Y / N		Narrow or Partial fill (please specify the type of insulation present)	Y / N	
Main house to be insulated	Y / N		Any areas to be excluded (to be shaded on the survey form)	Y / N	
Cavity width Front		Cavity width R/ H side		Cavity width L/H side	
				Cavity width Rear	

### Extension(s)

	Please delete as appropriate			Please delete as appropriate	
Clean Cavity	Y / N		Narrow or Partial fill (please specify the type of insulation present)	Y / N	
Extension to be insulated	Y / N		Any areas to be excluded (to be shaded on the survey form)	Y / N	
Cavity width Front		Cavity width R/ H side		Cavity width L/H side	
				Cavity width Rear	

### Construction

	Main building	Extension		Main building	Extension
Brick			Mortar colour		
Render			Render colour		
Recon stone			Tyrolean		
Natural stone			Raked mortar		

**Site specific question**

Is there any remedial action required? (if yes Please specify on the CASS remedial form).	(Please delete) Y / N	
Are there any asbestos containing materials present that could be affected by the installation of CWI? If yes please specify.	Y / N	
Are there any Safety alarms installed at the location?	Y/ N	
If yes, by enquiry with the customer, have they been tested in accordance with the alarm system design specification?	Y/ N	
Are there any protected species identified at the location that could be affected by the installation of CWI? If yes, please specify.	Y/ N	
Is there any existing damp present on internal rooms or external walls (other than those caused solely by condensation)? If yes please specify	Y / N	
Is there a suitable DPC, as per CIGA's technicians guide to best practice? If no please specify	Y / N	
Are guttering / downspouts in good repair with no signs of leaks, spills, or blockages? (Fenlock gutters should be lined). If no please specify	Y / N	
Will the installation compromise the functionality and / or safety of existing services? (Gas, electric, water telephone etc.) if yes please specify	Y / N	
Will the site layout or conditions impair the execution of the works? If yes please specify	Y / N	
Will the installation result in any non-compliance with building regulations e.g. relation to workmanship, materials structural stability, fire safety resistance to moisture; or any other requirements stated by the supplier? If yes please specify	Y / N	
Is the type, location, exposure and condition of the structure / property suitable for the cavity wall system to be installed? If no please specify	Y / N	
Have any areas to be omitted been agreed with the customer? If yes please specify on the CASS omitted areas form	Y / N	
Is neighbour access required and permission granted?	Y / N	
Any other access issues? (Site access / working at height, vehicle access /parking restrictions etc.) if yes please specify	Y / N	

**Assessor photo check list:**

	Please delete		Please delete
All external Elevations	Y / N	Guttering / downpipes	Y / N
Inner leaf walls with any issues	Y / N	Inside the cavity	Y / N
Loft space (walls and eaves)	Y / N / NA	DPC	Y / N
Fuel burning appliances and flues	Y / N / NA	Remedial sheet	Y / N / NA
Existing combustion ventilation	Y / N / NA	Omitted areas sheet	Y / N / NA

<b>Agrément certificate to be installed:</b>	
<b>Front</b>	<b>L/H side</b>
<b>R/H side</b>	<b>Rear</b>
<b>Plan</b>	<b>Additional info.</b>

### Calculations

Note: 1 scope hole per elevation or for non -standard cavities such as partial fill, 3 holes per elevation.	Cavity width (mm)			Area (m2)
Front				
Right hand side				
Left Hand side				
Rear				
Extension 1 (all elevations to be recorded)				
Extension 2 (all elevations to be recorded)				
Type of existing partial fill?	Total Area (m2)			

Number of Cavity barriers required?				Indicate: Essential air vent (E) Other vents (V) Flues (F) Boroscope holes (X) Omitted areas to be shaded.
Internal drill?	Y / N			
Vent sizes	9"x3"	9"x6"	9"x9"	
Number of vents to sleeve?				

## Ventilation.

In accordance with PAS 2030:2017, Annex A.5 please check there is adequate ventilation prior to the installation taking place. Existing ventilation requirement should be recorded below.

Type of ventilation	Living room	Dining room	Study	Bed 1	Bed 2	Bed 3	Bed 4	Bed 5	Bathroom	En-suite	Other
Background											
Purge											

Additional ventilation required as per the requirements of PAS2030:2017 annex A.5?	(please delete) Y / N	
--	--------------------------	--

## Combustion appliances and Essential ventilation

Please record details of combustion burning appliances and their ventilation requirements below

Appliance location?	Appliance make?	Appliance model?	Appliance K/W rating?	Adequate combustion ventilation?	Additional combustion ventilation required?

## Signatures

This property has been assessed in according to the requirements of the assessment and surveillance scheme for approved installers of cavity wall insulation, and the relevant BBA certificate.	Assessor's Name.	
	Assessor's signature.	
	Date.	

This assessment has been explained to me, and I understand its content. I have been informed the BBA may contact me to arrange a visit to confirm the suitability of this property.	Customer's name:	
	Customer's signature:	
	Date:	

I confirm as lead technician that this property is suitable for installation in accordance with the relevant Agrément certificate, and the assessment and surveillance scheme for approved installers of cavity wall insulation.	Technician's name:	
	Technician's signature:	
	Date:	

## Quality Checks:

Date	Technician	
Fibre:	Box Weight: (kg)	Box Time:
Density: (k/gm3)		Batch number(s)
Bead:	Head 1, Bead g/min	Glue ml/min
Foam: Nozzle A	Temperature	No. of Strokes
Nozzle B	Temperature	No. of Strokes
		Head 2 bead g/min
		Cream time
		Cream time
		Glue ml/mm
		Density k/gm3
		Density k/gm3

## **CASS® Data Protection Policy**

British Board of Agrément (**BBA**), Bucknalls Lane, Watford, Hertfordshire WD25 9BA

### **1. About this document**

During the course of BBA's activities in administering the Cavity Assessment Surveillance Scheme (**CASS®**), BBA may process personal data (which may be held on paper, electronically, or otherwise) about householders, installers and assessors. BBA recognises the need to treat personal data in an appropriate and lawful manner, in accordance with the Data Protection Act 1998 (**DPA**). The purpose of this policy is to make data subjects aware of how BBA, its data users and any third parties who process data on behalf of BBA will handle personal data.

"**Personal data**" means information BBA holds about a data subject from which that person can be identified. Personal data may include names, addresses, contact details and photographs of properties. "**Processing**" means doing anything with the data, such as obtaining, recording or holding the data and also organising, amending, using, disclosing or destroying the data.

### **2. Data protection principles**

BBA and any third parties who process data on BBA's behalf will comply with the eight data protection principles in the DPA, which state that personal data must be:

- a) processed fairly and lawfully;
- b) processed for limited purposes and in an appropriate way;
- c) adequate, relevant and not excessive for the purpose;
- d) accurate;
- e) not kept longer than necessary for the purpose.
- f) processed in line with individuals' rights;
- g) secure;
- h) not transferred to people or organisations situated in countries without adequate protection.

### **3. Fair and lawful processing**

For personal data to be processed lawfully, data must be processed on the basis of one of the legal grounds set out in the DPA. These include if the data subject has consented to the processing or that the processing is necessary for the performance of a contract with the data subject. BBA may also process data in order to comply with a legal obligation.

### **4. How BBA is likely to use personal data**

- 4.1 BBA will collect and process personal data about householders, installers and assessors for legal, personnel, administrative and management purposes and to enable BBA to meet its legal obligations as CASS® administrator. This may include data BBA receives from a data subject (for example, by completing forms or by corresponding with BBA by mail, phone, email or otherwise).
- 4.2 BBA and any third parties who collect data on BBA's behalf will inform data subjects about:
  - a) the purpose or purposes for which BBA intends to process those personal data;
  - b) the types of third parties, if any, with which BBA will share or to which BBA will disclose those personal data.
- 4.3 BBA will only process personal data for the specific purpose or purposes notified to data subjects or for other purposes specifically permitted by the DPA.
- 4.4 Personal data will only be processed to the extent that it is necessary for the specific purpose notified to the data subject or for other purposes specifically permitted by the DPA.
- 4.5 BBA will only use personal data for marketing purposes or disclose personal data to a third party for marketing purposes if it has obtained the data subject's prior consent. Consent is provided by the data subject ticking certain boxes on the forms used to collect data.

## 5. Accurate data

BBA and any third parties who process data on BBA's behalf will take reasonable steps to keep the personal data they store accurate and up to date. BBA will take reasonable steps to destroy or amend data that it becomes aware are inaccurate or out of date.

## 6. Data retention

BBA and any third parties who process data on BBA's behalf will not keep personal data for longer than is necessary for the purpose for which they were collected. BBA will take reasonable steps to destroy data or erase data from its systems when they are no longer required.

## 7. Processing in line with data subject's rights

Data subjects have the right to:

- a) request access to any personal data BBA holds about them;
- b) prevent the processing of their data for direct-marketing purposes;
- c) ask to have inaccurate data held about them amended;
- d) prevent processing that is likely to cause unwarranted substantial damage or distress to them or anyone else.

## 8. Data security

8.1 BBA and any third parties who process data on BBA's behalf will ensure that appropriate measures are taken against unlawful or unauthorised processing of personal data, and against the accidental loss of, or damage to, personal data.

8.2 BBA has in place procedures and technologies to maintain the security of all personal data from the point of collection to the point of destruction. BBA will only transfer personal data to a third party if that third party agrees to comply with those procedures and policies, or if the third party puts in place adequate measures itself.

8.3 BBA will maintain data security by protecting the confidentiality, integrity and availability of the personal data, defined as follows:

- a) **Confidentiality** means that only people who are authorised to use the data can access them;
- b) **Integrity** means that personal data should be accurate and suitable for the purpose for which they are processed;
- c) **Availability** means that authorised users should be able to access the data if they need them for authorised purposes. Personal data should therefore be stored on the CASS® software platform instead of individual devices.

8.4 Security procedures include:

- a) **Secure lockable desks and cupboards.** Desks and cupboards should be kept locked if they hold confidential information of any kind. (Personal information is always considered confidential.)
- b) **Methods of disposal.** Paper documents should be shredded. Digital storage devices should be physically destroyed when they are no longer required.
- c) **Equipment.** Data users must ensure that individual monitors do not show confidential information to passers-by and that they log off from the CASS® software platform when their devices are left unattended.

## 9. Providing information to third parties

BBA will not disclose personal data to a third party without the data subject's consent unless it is satisfied that the third party is legally entitled to the data. Where BBA does disclose personal data to a third party, BBA will have regard to the eight data protection principles.



**10. Subject access requests**

Data subjects may make a formal request for information BBA hold about them. This must be made in writing. Any such request may be subject to a fee of £10 towards BBA's costs in providing the data subject with details of the information BBA holds about them. All such written requests should be forwarded to BBA at the address shown at the start of this policy.



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