

LABSS INFORMATION PAPER INFOP05 - 2018 Version 5 030419

ALTERATIONS TO EXISTING DWELLINGS

External Wall Insulation System

Applicable to Domestic Buildings

only in relation to Administration and Supporting Information.

To assist Verifiers in the assessment of Building Warrants, CCNP's and Completion Certificates

BACKGROUND

The Scottish Government recognises that the UK Government's new Energy Company Obligation (ECO) will create a legal obligation on certain energy suppliers to improve the energy efficiency of domestic households through the establishment of annual carbon emission and heat reduction targets. In order for energy companies to meet their annual targets there is a strong drive to fit external wall insulation (EWI) to existing buildings. As there is a requirement for a building warrant for such works any delays could affect the amount of EWI installed and the ability to meet targets.

The Scottish Government is addressing this by working with designers, installers and local authority verifiers to identify where delays may occur in the building warrant process and help those involved to develop procedures to minimise such delays. To help with this process the BSD hosted a workshop on 19 December 2012 at Denholm House, Livingston.

CONCLUSIONS

The following is a list of the key points from the workshop that stakeholders consider will assist the processing of building warrant applications:

1. the development of a national checklist
2. the inclusion of multiple dwellings on a single building warrant application
3. good quality application (standard details, digital photos of elevations, BBA certificate, dewpoint calculations, etc.)
4. applications should be prioritised by local authorities,
5. the time for granting of the warrant will be dependent on the quality of the submission and on the need for wider consultation on any site-specific proposal.

PROCEDURES		
ISSUE	NUMBER	COMMENTS
Application form	*	<p>* Complete form available from LA and submit with the lodging fee.</p> <p>* Alternatively, upload application via EBS portal</p>
Fee	*	<p>* Fee payable in accordance with prescribed scale of fees based on value of work.</p> <p>Based on value of works and not on cost of carrying out the work (i.e., material & installation costs)</p>
Location plan	<p>Min 2**(paper submissions only)</p> <p>** (NB: Some LAs may need 3)</p>	<p>Provide a location plan at a scale of 1:2500 (OS) or equivalent</p> <p>Provide a block plan (site plan preferably min 1:500) to identify every house within the project development area</p>
Drawings or photographs	Min 2**(paper submissions only)	<p>Sufficient drawings or digital photographs of each elevation to be provided for each house type within the project to identify the scope of the application (additional drawing or digital photo information should be provided for unique or one-off features within the development area)</p>
Specification documents	Min 2**(paper submissions only)	<p>As a minimum, it is essential that a detailed specification document is provided for the existing wall construction onto which the EWI will be installed. Please refer to 'TECHNICAL ASSESSMENTS' below for further information relating to specific requirements</p> <p>A fully detailed specification document should be provided for the EWI Product(s) to be installed</p> <p>A Standard Detail Book (fully relevant to the existing wall construction) should be provided. The Detail Book should show ALL detailing to a large scale (1:20 or equivalent) and should have regard to: -</p> <ul style="list-style-type: none"> • Windows and doors – cill / head / ingoes • Service ducting – pipes, boiler flues, overflows etc • Wall section, • DPC level detailing • Cavity barriers,

- Wall/soffit junction,
- Junctions at separating walls/floors
- Project specific detailing
- Weathering details – flashings / coping

It would be reasonable for the Local Authority to request evidence of correlation of load tests rather than solely relying on manufacturer data.

Proof load tests should be provided. The number of PLT's should be based on Annex D of ETAG 014. The ETAG standard describes the implementation of statistical techniques to establish whether a fixing strategy is appropriate. Where buildings have differing substrates PLT's should be undertaken for each substrate. In cavity wall construction, there should also be a specification covering an inspection / testing regime for the existing wall ties to determine these provide sufficient integrity.

Pull over/through tests should also be considered together with pull out information.

Certification documents

Min 2** (paper submissions only)

SER Certification

Confirmation of BBA Certificates or other UKAS Accredited Test House certification (product/installation) and BBA Certification of fixings appropriate to the wall type. For clarity, a detailed fixings schedule should accompany any submission together with a site-specific pullout load/testing regime specified with or without SER Certification. Please refer to 'TECHNICAL ASSESSMENTS' below for further information relating to specific requirements

TECHNICAL ASSESSMENTS

ISSUE	TECHNICAL HANDBOOK:	COMMENTS
<p>Structure Mandatory Standard 1.1</p>	<p>For ALL “high rise” (over 18m); and For no- fines concrete/timber clad/hard to treat walls (of any height)</p> <p>A detailed fixings schedule should accompany any submission and a pullout load/testing regime should be specified irrespective of SER Certification to confirm:</p> <ul style="list-style-type: none"> • BBA Certificate compliance; • Pull out test results (each wall type); • Detail types of fixings; • Detail expansion joints • EWI and building attachments (eg, satellite dishes, rainwater goods, etc). • Pull through tests (each wall type) 	<ol style="list-style-type: none"> 1. SER Certification supported by a fully detailed engineering specification as detailed under the specification and certification documents above is <u>recommended</u>. <p>Alternatively, Structural drawings and calculations prepared and checked by Chartered Structural/Civil Engineers with the relevant experience of the types of structure specified may be provided.</p> <p>When considering the structural design of a building not certified by approved certifiers of design, comprehensive large-scale details of all aspects of construction and associated elements require to be provided.</p> <p>The competency criteria for the designers and installers should meet the requirements of BSI document PAS 2030:2017. Annex A Measure-specific Annex Selection and Co-installation requirements – Annex B4 Measures BFM 4.1 Site rendered external wall systems and BFM 4.2 Pre-finished external wall insulation systems</p> <p>For further information please refer to: http://www.gov.scot/Topics/Built-Environment/Building/Building-standards/ProceduralLegislation/letterstoverifiers/llavclad</p> <ol style="list-style-type: none"> 2. An engineered approach is required for these installations, including wind load calculations. In addition, there is need for a Chartered Structural/Civil Engineer or other appropriately qualified person to carry out a structural assessment of the building. 3. Pull out test must be relevant for the planned usage and substrate. 4. Results must not be at the expense of other failure mechanisms such as ‘pull through’ or bond failure. Calculations should present and demonstrate all failure cases are complied with (must be relevant for the planned usage and substrate).

**Structure
Mandatory
Standard 1.1**

**For walls under
18m**

A detailed fixings schedule should accompany any submission and a pullout load/testing regime should be specified irrespective of SER Certification to confirm:

- BBA Certificate compliance;
- Pull out test results (each wall type);
- Detail types of fixings;
- Detail expansion joints
- EWI and building attachments (eg, satellite dishes, rainwater goods, etc).

1. It is not expected that an SER Certification should be necessary for low rise (under 18m) buildings provided the competency criteria for the designers and installers should meet the requirements of BSI document PAS 2030:2017. Annex A Measure-specific Annex Selection and Co-installation requirements – Annex B4 Measures BFM 4.1 Site rendered external wall systems and BFM 4.2 Pre-finished external wall insulation systems
2. An engineered approach is required for these installations also, including wind load calculations. In addition, there is need for an appropriately qualified person to carry out a structural assessment of the building. Structural drawings and calculations prepared and checked by Chartered Structural/Civil Engineers with the relevant experience of the types of structure specified may be provided. When considering the structural design of a building not certified by approved certifiers of design, comprehensive large-scale details of all aspects of construction and associated elements require to be provided.
3. For further information please refer to: <http://www.gov.scot/Topics/Built-Environment/Building/Building-standards/ProceduralLegislation/letterstoverifiers/llavclad>
4. Pull out test must be relevant for the planned usage and substrate. Results must not be at the expense of other failure mechanisms such as 'pull through' or bond failure. Calculations should present and demonstrate all failure cases are complied with (must be relevant for the planned usage and substrate).

**Fire
Mandatory
Standard 2.2**

The application of external cladding MUST NOT negate the fire resisting separation required between houses and flats at junctions with separating floors and walls

Where the cladding crosses a junction between the external wall and a separating wall or floor, that junction must be fire stopped to prevent the unseen spread of smoke, fire and toxic gases. Such fire stopping requires a fire resistance equal to that of the separating floor or wall.

Mandatory Standard 2.4

Clauses 2.4.1, 2.4.2 and 2.4.7

Define “combustibility” classification of EWI
Indicate position and type of cavity barrier (including fixings) to meet 2.4.1, 2.4.2 & 2.4.7

BBA Certification or test report
BBA Certification and Manufacturers information.

For timber clad properties provide details of cavity barriers / fire stops, and requirement to ventilate cavity. The LABSS Information Paper **INFOP09/2016 Version 4** should be referred to in these regards.

Clause 2.4.4 High rise domestic buildings

In order to satisfy Standards 2.4, 2.6 and 2.7, the external wall, including any associated cavity barrier or cladding system, should be designed and constructed from:

- a. products that achieve a non-combustible reaction to fire classification in accordance with annex 2.B, or
- b. achieve the performance levels in BR 135, ‘Fire Performance of external thermal insulation for walls of multi-storey buildings’ when read in conjunction with the test methodology in BS 8414: Part 1: 2002 or BS 8414: Part 2: 2005.

Mandatory Standard 2.6

Reference should be made to the 2017 Domestic Technical Handbook when considering constructions close to boundaries, any requirement for non-combustibility and the assessment of unprotected areas.

Houses – External wall cladding to a house need not have a non- combustible classification where the external wall has the appropriate fire resistance and the cladding achieves a low risk reaction to fire classification. In such a case the cladding may be excluded from the unprotected area calculation regardless of openings.

For flats (incl. Colony/Cottage/Maisonette types) unprotected area calculations should be forwarded

Mandatory Standard 2.7

Indicate position and type of cavity barrier to meet 2.4.1, 2.4.2 and 2.7.1 as appropriate (i.e. if over cladding is forming a cavity)

EWI to high-rise buildings should be non-combustible.
Provide appropriate fire test report to confirm non-combustibility.

Alternative approach follows BR 135.

EWI to low-rise buildings less than 1metre from boundaries should be non-combustible (with the exception of houses - subject to conditions in Clause 2.7.1).

Where the cladding crosses a junction between the external wall and a separating wall or floor, that junction must be fire stopped to prevent the unseen spread of smoke, fire and toxic gases. Such fire stopping requires a fire resistance equal to that of the separating floor or wall. Fire stopping must still be considered irrespective of whether or not a cavity barrier has been installed.

<p>Mandatory Standard 2.9</p> <p>Clause 2.9.4 Escape within dwellings – escape windows</p>	<p>Confirm escape windows are unaffected</p>	<p>Ability for escape should not be worsened</p>
<p>Environment: Mandatory Standard 3.4</p>	<p>Indicate existing dpc level and ensure insulation does not bridge the dpc.</p> <p>Confirm underfloor solum vents are unaffected or show remedial works to maintain ventilation</p>	
<p>Mandatory Standards 3.6 and 3.7</p>	<p>Indicate the position of any rainwater downpipes Indicate the position of any foul and waste pipes</p>	<p>Detail any alterations needed to assess the implications of re-positioning soil vent pipes, rainwater downpipes & other associated drainage (including underground drainage arrangements caused by installation of EWI)</p>
<p>Mandatory Standard 3.10</p>	<p>Confirm suitability of EWI to resist wind driven rain and precipitation</p>	<p>BBA Certification (or equivalent) and Manufacturers information. Specification documents should include weathering details as part of the information pack, eg flashing and coping details, sill details, etc to ensure no saturation of insulation through use of inappropriate detailing and minimizing icicle formation on shallow angle sills including being insulated behind and reinstated to stop cold bridging.</p>
<p>Mandatory Standard 3.14</p>	<p>Confirm impact if the installation of the EWI significantly alters the buildings air-tightness resulting in higher moisture levels within properties?</p>	<p>Is existing ventilation strategy fit for purpose?</p>

Mandatory Standard 3.15	<p>Provide condensation analysis and dew point calculations</p> <p>Check roof void ventilation</p>	<p>The guidance given in BS5250: 2016 is helpful in preventing both interstitial and surface condensation.</p> <p>Ensure installation of EWI does NOT adversely affect the eaves ventilation of the roof void. Any existing roof void ventilation should be indicated on details within the standard details pack.</p>
Mandatory Standard 3.19	<p>Indicate the position of any flues or ducts through the EWI</p>	<p>Detail any alterations needed to flues etc caused by installation of EWI</p>
Mandatory Standard 3.21	<p>Air for combustion</p>	<p>Ensure installation of EWI does not adversely affect any requirement for the supply of air to combustion appliances</p>
Safety: Mandatory Standard 4.1/4.3	<p>Detail the effect on existing stairway widths as appropriate</p> <p>Detail the effect on existing balconies, pends as appropriate</p>	<p>Detail any alterations needed to stairways, accessways, balconies, pends etc. caused by installation of EWI to ensure widths not reduced below minimum standards.</p>
<p>Energy: Mandatory Standard 6.2.</p> <p>Clause 6.2.11 Alterations to insulation envelope</p>	<p>BSD advise that the ECO policy requirement for external walls to achieve a maximum U value of 0.3 W/m²K has now been removed and refers solely to the levels prescribed within building regulations. In the absence of further guidance from DECC on the duties of those administering the scheme the level of fabric improvement proposed for a dwelling is the best they can practically achieve under the circumstances and as described in Standard 6.2. The intention behind the change is to allow greater flexibility in improving the energy performance of dwellings where achieving the level of performance of U value of 0.3 W/m²K proves to be challenging. It was considered prudent that this LABSS Information Paper no longer needs to provide advice to verifiers to refer to the U value of 0.3 W/m²K as being reasonably practicable.</p> <p>As a minimum, it is essential that a detailed specification document is provided for the existing wall construction on to which the EWI will be installed.</p>	
Validity of tests and certification	<p>The design shown, and the specifications and materials referred will be assessed and approved in accordance with the Building (Scotland) Regulations 2004 and in accordance with the supporting guidance in the 2017 Domestic Technical Handbook which came into force with effect from 1 July 2017.</p> <p>Where reference is made on a plan or specification document to any Code of Practice, British or European Standard or manufacturer's instruction it shall be construed as a reference to such publication in the form in which it is in force at the date of the submission of the building warrant application.</p>	

Pre- application discussion

In the case of “hard to treat” buildings or complexity or uniqueness, verifiers in Scotland will provide a forum for pre-application advice and information. Forum provided via the LABSS Consortia Technical Working Group (CTWG).

Applicants and/or their agents may seek similar advice and information from an Approved Certifier of Design (Structures) under the scheme operated by SER Ltd.

Geographical / Street Identification

Applicants / agents should seek information from the specific Local Authority where the development is to take place to confirm how an application or applications should be submitted.

NOTE: Many of the IT Systems used by Scotland's Local Authorities require that submissions for warrant are constrained by street addresses – e.g. if you had a development covering 3 different streets then 3 separate applications would be required.

There are variations to this so SPEAK TO YOUR LOCAL AUTHORITY prior to submission.

CCNP/Reasonable Inquiry

This CCNP is an agreement document between the local authority verifier and the developer to allow checks on construction stages and compliance to be recorded. **Construction Compliance and Notification Plans have now been embedded in the Building Standards system in Scotland. The norm is that EVERY unique house, flat, maisonette would receive its own CCNP.**

There may be variations to this depending on the nature of the development or the scope of the work so SPEAK TO YOUR LOCAL AUTHORITY prior to submission.

Submission of and Acceptance of Completion Certificates

LABSS understands that, like the provision of CCNPs, the ECO developer requires that every unique house, flat, maisonette will have its own Completion Certificate and Acceptance.

There may be variations to this depending on the nature of the development or the scope of the work so SPEAK TO YOUR LOCAL AUTHORITY prior to submission.

In any event, the developer MUST download the requisite Form 5 – Completion Certificate to suit the development from the Building Standards Division (BSD) website under the Legislation & Procedures banner.

Alternatively submit the Completion Certificate Submission via the eBuilding Standards Portal

The Local Authority will issue Acceptances in response to the Completion Certificates received.

IMPORTANT NOTES:

An amendment to the building warrant should be submitted prior to the submission of the completion certificate where there are any properties omitted from the original warrant approval.

It is likely that ALL owners/occupiers of the individual houses, flats or maisonettes will require a Completion/Acceptance document. Under this scheme it will be the developer's responsibility to pass any such documents to every householder (relevant person).

Where there are several buildings covered by a warrant (excluding new dwellings or existing dwellings in different ownership), the regulations permit the submission of a completion certificate related to either, each building or to all buildings covered by the warrant. The 2007 amendments to the Building (Procedure) (Scotland) Regulations 2004 allow a single completion certificate to be submitted in the case of work to existing dwellings in the same ownership. It is intended that this will cover such work as the upgrading of an estate consisting of social housing where it may be more convenient to all involved to have a single completion certificate and acceptance for the entire project.

For new dwellings, however, a completion certificate is required for each individual dwelling. On an estate of houses, a completion certificate must be submitted and accepted for each dwelling, provided the common services required by the building regulations for that dwelling has been completed. In other words, a completion certificate should not be accepted for a dwelling until it is connected to a suitable drainage system or until access to a suitable road is complete. (Note that matters not covered by a warrant, such as street lighting is, however, outside the scope of the certificate).