

LABSS INFORMATION PAPER INFOP05 - 2018 Version 10 051120

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

		<ul style="list-style-type: none"> • Cavity barriers, Wall/soffit junction, • Junctions at separating walls/floors • Project specific detailing • Weathering details – flashings / coping <p>It would be reasonable for the Local Authority to request evidence of correlation of load tests rather than solely relying on manufacturer data.</p> <p><u>Proof load</u> tests should be provided. The number of</p> <p>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.</p> <p>Pull over/through tests should also be considered together with pull out information. "Pull out test results should be provided"</p>
<p>Certification documents</p>	<p>Min 2**(paper submissions only)</p>	<p>SER Certification</p> <p>Confirmation of BBA Certificates or other UKAS</p> <p>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</p>

TECHNICAL ASSESSMENTS		
ISSUE	TECHNICAL HANDBOOK	COMMENT
<p>Structure Mandatory Standard 1.1</p>	<p>For ALL “high rise” (over 18m); and</p> <p>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; <p>NOTE: Many BBA Certificates will not make reference to the latest references within the 2019 Technical Handbooks. This may require contact with BBA to confirm scope and relevance to new references</p> <ul style="list-style-type: none"> • 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 <u>is recommended</u>. 2. 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. 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. The competency criteria for the designers and installers should meet the requirements of BSI document PAS 2030:2019 when read with PAS 2035:2019 3. For further information please refer to: http://www.gov.scot/Topics/Built-Environment/Building/Building-standards/ProceduralLegislation/letterstoverifiers/llavclad 4. 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. 5. Pull out test must be relevant for the planned usage and substrate. 6. 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).
<p>Structure Mandatory Standard 1.1</p>	<p>For walls under 18m</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; <p>NOTE: Many BBA Certificates will not make</p>	<ol style="list-style-type: none"> 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. 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

	<p>reference to the latest references within the 2019 Technical Handbooks. This may require contact with BBA to confirm scope and relevance to new references</p> <ul style="list-style-type: none"> • Pull out test results (each wall type); • Detail types of fixings; • Detail expansion joints • EWI and building attachments (eg, satellite dishes, rainwater goods, etc). 	<p>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.</p> <ol style="list-style-type: none"> 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	<p>The application of external cladding MUST NOT negate the fire resisting separation required between houses and flats at junctions with separating floors and walls</p>	<p>Where a separating wall or floor abuts a structure containing a cavity, a fire barrier should be installed in the cavity so as to extend the line, and maintain the fire resistance, of the wall or floor.</p> <p>Where an external wall cladding system has achieved 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: 2015+A1: 2017 or BS 8414: Part 2: 2015+A1: 2017, the junction detail is considered to meet the intent of Standard 2.2. BS 9414: 2019 (Draft 2019) provides additional information on the application of results from BS 8414 tests.</p>
Mandatory Standard 2.4 Clauses 2.4.1, 2.4.2 and 2.4.7	<p>Define European Classification of EWI Indicate position and type of cavity barrier (including fixings) to meet 2.4.1, 2.4.2 & 2.4.7</p>	<p>BBA Certification or test report</p> <p>BBA Certification and Manufacturers information.</p> <p>NOTE: Many BBA Certificates will not make reference to the latest references within the 2019 Technical Handbooks. This may require contact with BBA to confirm scope and relevance to new references</p> <p>For timber cladded 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.</p>
Clause 2.4.4 Cavities in external walls of domestic buildings with a storey more that 11m above ground level.		<p>In order to satisfy Standard 2.4, thermal insulation material situated or exposed within an external wall cavity, or in a cavity formed by external wall cladding, should be constructed of products which achieve European Classification A1 or A2” (see Technical Standards Annexe 2.B).</p> <p>Alternative guidance - BR 135, ‘Fire Performance of external thermal insulation for walls of multi-storey buildings’ and BS 8414: Part 1: 2015+A1: 2017 or BS 8414: Part 2: 2015+A1: 2017 provides guidance on fire spread on external wall cladding</p>

		<p>systems. The guidance provided in these publications may be used as an alternative to European Classification A1 or A2 external wall cladding and for European Classification A1 and A2 products exposed in a cavity. BS 9414: 2019 (Draft June 2019) provides additional information on the application of results from BS 8414 tests.</p> <p>Where a separating wall or floor abuts a structure containing a cavity, a fire barrier should be installed in the cavity so as to extend the line, and maintain the fire resistance, of the wall or floor.</p>
Mandatory Standard 2.6	Reference should be made to the 2019 Domestic Technical Handbook when considering constructions close to boundaries, in buildings with a storey height above 11m, limitations on combustibility, and the assessment of unprotected areas.	<p>External wall cladding to a house need not achieve European Classification A1 or A2 where the external wall has the appropriate fire resistance and the cladding achieves European Classification B. In such cases the cladding may be excluded from the unprotected area calculation regardless of openings.</p> <p>For flats (incl. Colony/Cottage/Maisonette types) unprotected area calculations should be forwarded</p>
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)	<p>External wall cladding not more than 1m from a boundary should achieve European Classification A1 or A2 except cladding to a house where:</p> <ul style="list-style-type: none"> the cladding achieves a European Classification B, and the wall behind the cladding has the appropriate fire resistance duration from both sides. <p>Storey height more than 11m – Where the building has a storey at a height of more than 11m above the ground the external wall cladding system should be constructed of products achieving European Classification A1 or A2.</p> <p>Alternative guidance - Where an external wall cladding system has achieved 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: 2015+A1: 2017 or BS 8414: Part 2: 2015+A1: 2017, the junction detail is considered to meet the intent of Standard 2.2. BS 9414: 2019 (Draft 2019) provides additional information on the application of results from BS 8414 tests.</p>
Mandatory Standard 2.9 Clause 2.9.4 Escape within dwellings – escape windows	Confirm escape windows are unaffected	Ability for escape should not be worsened

<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</p> <p>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.</p> <p>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>
<p>Mandatory Standard 3.15</p>	<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 roof void. Any existing roof void ventilation should be indicated on details within the standard details pack.</p>
<p>Mandatory Standard 3.19</p>	<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>
<p>Mandatory Standard 3.21</p>	<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>
<p>Safety: Mandatory Standard 4.1/4.3</p>	<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. 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> <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 2019 Domestic Technical Handbook which came into force with effect from 1 October 2019.</p>
<p>Validity of tests and certification</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>
<p>Pre- application discussion</p>	<p>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).</p> <p>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.</p>
<p>Geographical / Street Identification</p>	<p>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.</p> <p>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.</p> <p>There are variations to this so SPEAK TO YOUR LOCAL AUTHORITY prior to submission.</p>
<p>Building Warrants</p>	<p>In these BW submissions the applicant is invariably not the owner. The contractor could in many cases be the applicant and also the agent. Where the owner is not the applicant, all the owners of the individual units/plots being altered require to be formally notified when the BW is granted. A list of owners of all the properties included in the project can be provided to the verifier, <u>at any point prior to granting the warrant</u>. Any additional properties added after approval would need to be included within an amendment to warrant application to embrace these additional properties. Such an approach should be discussed with the verifier for agreement.</p> <p>While the owners will have been notified of the BW having been issued it is anticipated that the BW (or a copy) may not be forwarded to the owner. This may lead in the future to many requests from the owners for copies of BW's when they come to sell the altered properties.</p>

<p>CCNP/Reasonable Inquiry</p>	<p>The 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.</p> <p>A CCNP for each housing unit/plot will be issued by the Local Authority verifier at the time of issue of the BW in accordance with the "Verification During Construction Handbook". Consideration should be given to the level of the inspection regime to be undertaken for the site.</p> <p>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.</p>
<p>Submission of and Acceptance of Completion Certificates</p>	<p>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 Notification of Acceptance (NACC).</p> <p>It is understood that a NACC requires to be issued by the Local Authority verifier for every unit/plot that forms part of the BW consents. The NACC will be issued in the majority of cases to the Relevant Person/Agent who in many cases will be the contractor/scheme provider.</p> <p>As with the BW, the owner requires to be notified if they are not the Relevant Person, when the NACC has been issued.</p> <p>While the owners will have been notified of the NACC it is anticipated that this certificate <u>may not be forwarded</u> to the owner. This may lead in the future to many requests from the owners for copies of CAC's when they come to sell the properties altered. Contractors therefore are advised to make available a copy of the NACC to the owners as soon after receipt as possible.</p> <p>IMPORTANT NOTES:</p> <p>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.</p> <p>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).</p> <p>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</p> <p>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)</p>

USER NOTES: