## P1 / NEW PERIODICALS

The aims of this new series of technical updates are summarised and the new upcoming CWI scheme document is announced.



Requirements relation to partial-fill (drilling patterns, boroscope inspections) are discussed.



Some of the highlights of the new scheme document, including sample templates and installer declarations, are outlined.



External wall insulation as described in S.R. 54:2014.

Current SEAI grant levels for ETICS and CWI

# Technical Update

A Periodical for Approved Installers of ETICS and CWI



#### A new series of Technical Updates

Welcome to the first in a series of periodical technical updates for Approved Installers of External Thermal Insulation Composite Systems and Cavity Wall Insulation. These publications are intended to provide Installers with technical and regulatory information related to ETICS and CWI systems, while also updating Installers on scheme requirements and providing guidance regarding compliance.

#### Introducing a revised CWI scheme document

This first issue focuses primarily on the forthcoming launch of a new NSAI Approved scheme document for Installers of CWI. This new document introduces a number of changes to the scheme which are designed to further enhance the overall integrity of the industry. This will be achieved through the introduction of some new measuring, testing, recording,

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<sup>56</sup> This series of periodicals is intended to provide Approved Installers with advice and guidance on ETICS and CWI technical and scheme requirements.<sup>33</sup>

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and documentary improvements.

Some of these new changes include the addition of sample survey and installation check templates, more detailed installation checks, recording of detailed boroscope inspection results, cavity width measurement, random adhesive testing, the tracking of volume of bead used per installation, and the issuing of an installer's declaration to clients. A number of these changes are expanded upon in this publication.



## Partial-fill insulation demands special consideration



Heating Flue

## **Partial-fill Insulation?** It is critically important to ensure the appropriate drilling pattern is used.

NB: Figure above is an extract, full details are in relevant Agrément Certificate

Cavity walls with existing partialfill insulation can be considered for pumping with bead insulation. However it is important that all checks of the existing wall construction (and insulation) as recommended in the relevant Agrément Certificate and in SR54 (*Code of practice for the energy efficient retrofit of dwellings*) are completed to establish its suitability. These checks include:

 inspections of background, combustion and under floor ventilation openings to ensure they are adequately sleeved or otherwise modified to prevent blockage by the insulant;

- inspections of the tops of cavity walls to ensure cavities are closed;
- Checks to ensure electrical cables are or can be suitably isolated.

The overall cavity width, the thickness of the existing insulation, and the residual cavity space to be filled must all be measured and recorded on the survey and installation records. The new scheme document sets out the method by which average cavity widths should be measured.

The condition of the cavity must also be fully checked by means of detailed boroscope investigations. See article on this page for more details of boroscope inspections.

## **BORESCOPE** INSPECTIONS

#### RECORDS OF SURVEYOR AND INSTALLER BORESCOPE SURVEYS TO BE RETAINED

Since a number of Agrément Certificates were revised to allow for the pumping of partially filled cavities, there have been requirements in place that require both installer surveyors and operatives to carry out more detailed boroscope investigations.

#### SURVEYOR

During the initial survey of the building the surveyor is required to carry out inspections on a minimum of two test holes per elevation.

#### **INSTALLER/OPERATIVE**

During installation the installer must carry out a more detailed borescope survey on **all** drill holes.

These borescope inspections are carried out to determine if the cavity is suitable for cavity fill insulation. These investigations must clearly establish the condition of the cavity throughout the extent of the external walls. Some of the issues that should be checked for include:



The continuity of the cavity;

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- The width of the remaining cavity;
- Positioning and condition of existing insulation boards, including inspecting for dislodgement which may render the cavity unsuitable;
- Blockage of the cavity by mortar, masonry, or other debris;
- Evidence of dampness in the wall or in the cavity.

It is important that a complete survey report of all borescope inspections is prepared and retained. Therefore the surveyor must record the results of the initial borescope inspections, and the installers must also record their findings on installation check sheets. These inspections provide for a more robust and critical analysis of the condition of the partially filled cavities.

>> THE NEW SCHEME DOCUMENT WILL CIRCULATED IN THE NEW YEAR AND WILL BE MADE AVAILABLE FOR DOWNLOADING AT WWW.NSAI.IE

## Templates for Surveys and Installation Records

It is vitally important that Installers have clear and accurate records of surveys carried out and of installation actions. The survey is an inspection carried out to determine the condition of the building before any works are carried out and the survey sheet record should clearly describe the relevant characteristics of the building at that time. Separate installation inspection checks must also be recorded and these should include details of the relevant actions carried out by operatives immediately prior to, during and after the installation work, such as preparation work and flow test results, borescope inspection details, combustion appliance (before and after) safety checks etc. (Remember that safety risk assessments must also be completed.)

Following demand from both Certificate Holders and Installers, NSAI is preparing a sample survey sheet template and a sample



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#### **Registration Certificates**

Approved Installers are being issued with certificates of registration (see example above). These certificates will be valid for 12 months from the date of issue. Before a new certificate is issued, the annual surveillance audit must be completed.



## Drafts of templates which are to be included in the forthcoming new scheme document

installation sheet template for inclusion in the new CWI scheme document. It is important to note that it will not be a requirement to use these sample documents - they are being provided for guidance, and may be used as an alternative to existing templates. For all installations, the requirements remain the same - a full survey must be carried out and recorded, installation checks must be carried out and recorded, and completion safety checks (including checks on combustion appliances) must be carried out and recorded.

#### **Tracking Bead Volume per Installation**

For improved product traceability and further assurance that the cavity is fully filled, bead quantities must also be tracked. From SR54: "On completion, the quantity of insulant used should be compared with the estimated quantity. A variation of more than 10 % may indicate missed areas, wrong filling density, or that areas of the structure other than the external cavity may have been filled." A record of the volume of bead used for each installation will need to be kept.

## Installer's Declaration

#### APPROVAL

The revised CWI scheme document places a greater emphasis on ensuring delivery of customer service and approval by placing a requirement on all Installers to provide assurance that the installation of the bead or fibre insulation has been completed in accordance with the NSAI scheme requirements and the relevant Agrément Certificate.

#### ACCESSIBILITY

This assurance is to be achieved by Installers issuing a declaration to all customers on completion of work. Such a declaration allows for greater scheme transparency and improved accessibility, thus further developing the integrity of the scheme. This is critical for ensuring the continued viability of the scheme and, by extension, the overall perception of reliability of the scheme to the general public.

#### AWARENESS

The Installer's Declaration will be required to include the system name and Agrément Certificate number, the client details, the type of product used, the quantity of the insulant in terms of mass and volume, the average cavity width, the average installed insulation density, and the thermal resistance level. This declaration will assist in raising levels of knowledge and awareness of what cavity wall insulation entails. A sample Installer's Declaration will be included in the revised scheme document.

## **ETICS** Coverage in future issues of this series

External Wall Insulation is described in S.R. 54 as follows:

"External wall insulation is an insulation system typically fixed to the external face of masonry or concrete structures. Such systems are normally proprietary. They can improve the appearance of the building and can be installed when performing other external repairs to structure, render repairs or roof replacement. The insulation is generally fixed using mechanical fixings and adhesive."

In future issues of this series, a number of factors relating to ETICS will be discussed. Advice will be provided regarding registration and surveillance audits, with guidance provided over the series highlighting issues that commonly cause problems for Installers during audits.

Technical aspects of ETICS systems will also be addressed, with future issues looking at areas



such as impact resistances, boarding patterns and fixings, thermal conductivities of materials, calculation of u-values, the range of finishes available, the different properties of some of these finishes, window sills and their development, among many others. Certificate Holders and Installers are also invited to submit topics for consideration for inclusion in future issues.

#### **SEAI Grants**

Under the Better Energy Homes scheme, grant assistance may be sought from SEAI. Currently grants from €2,250 up to €4500 for external insulation depending on house type, and up to €300 for pumping cavity wall insulation, may be availed of in certain circumstances. Installers should ensure that they are registered with NSAI to ensure that their customers can apply for these grants. The Better Energy Homes scheme will be covered in greater detail in the next issue. In the meantime, for further detailed information, check out http://www.seai.ie/Grants/ Better\_energy\_homes/



NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland D09 A0E4 T: +353 1 807 3800 | F: +353 1 807 3838 | E: info@nsai.ie

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Some of the topics that will be covered in the next issue of this series of Technical Updates will include:

- ⇒ Overview of ETICS scheme
- ⇒ Boarding fitting procedures, fixing patterns
- $\Rightarrow$  Ventilation
- ⇒ Agrément Certificate development
- ⇒ Conductivity discussed
- $\Rightarrow$  Photographic evidence

#### **IMPORTANT NOTE:**

This publication provides advice, guidance and updates of a general nature. It is not nor does it purport to be a regulatory document and should not be relied upon as such. For complete guidance on any technical issues discussed in this Newsletter the relevant official regulatory documents must be consulted. These would include Scheme Documents, Agrément Certificates, Technical Guidance Documents etc.