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## **NSAI Agrément Approval Scheme for Installers of External Thermal Insulating Composite Systems (ETICS)**

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**1.0 Introduction**

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NSAI regards the quality of installation and workmanship to be critical to achieving the design life of an External Thermal Insulation Composite System (ETICS). NSAI has established an approved installer scheme 'NSAI Agrément Approval Scheme for Installers of External Thermal Insulating Composite Systems (ETICS)' to evaluate and monitor the ongoing performance of installers of NSAI Agrément certified ETICS systems.

Two classes of approval are available:

- Approved Installer
- Approved Installer (Multi-Storey)

If the evaluation is successful, the Approved Installer will:

- a) Be allocated an ETICS Approved Installer Number associated with the relevant certificate;
- b) Be included on the NSAI website register as an NSAI Agrément ETICS Approved Installer or NSAI Agrément ETICS Approved Installer (Multi-Storey) for the system specified in the relevant NSAI Agrément certificate;
- c) Be required to continue to meet these certification criteria. Failure to do so will result in removal of the Approved Installer from the NSAI register.

## **2.0 Scope**

This scheme provides for evaluation, approval and on-going surveillance of NSAI ETICS Approved Installers against the requirements set out in:

- a) The valid NSAI Agrément certificate.
- b) The site survey sheet, site specific project design, building details and method statement.
- c) Any other relevant information provided by the certificate holder.
- d) Any additional requirements specified in this document.

## **3.0 Definitions**

- 3.1 Approval: A favourable technical assessment of the ability of the applicant to install an ETICS in accordance with the requirements of this scheme.
- 3.2 Approved Installer: Company approved by NSAI to install the certified ETICS on buildings of up to 2.5 storeys in height. This team will:
  - Be trained and approved by a certificate holder as an approved installer.
  - Employ at least one ETICS Supervisor and ETICS Operative. The ETICS Supervisor and ETICS Operative can be the same person.
- 3.3 Approved Installer (Multi-Storey): As for Approved Installer but is approved to work on buildings of greater than 2.5 storeys in height.
- 3.4 Assessment Body: The organization carrying out the assessment of the ETICS installer. In this case, the assessment body is NSAI.

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- 3.5 Authorised Personnel: Suitably qualified personnel employed or subcontracted by the Assessment Body to carry out the approval or ongoing surveillance of the Approved Installer.
- 3.6 Certificate Holder: The owner of the relevant NSAI Agrément certificate, as defined in the NSAI Agrément Terms and Conditions.
- 3.7 ETICS Operative: An operative who:
- Has served a recognised apprenticeship in a relevant trade, e.g. plasterer.
  - Has a minimum of 5 years practical and relevant experience in the construction industry.
  - Has successfully completed the certificate holder’s training programme.
  - Has been approved by the certificate holder as an ETICS installer of their system and has been issued with an ETICS Operative ID card.
- 3.8 ETICS Supervisor: An ETICS Operative capable of, and responsible for, overseeing the work of an ETICS Team on a project. Records should be available to demonstrate the competence of an ETICS Supervisor, including:
- An ETICS Supervisor ID card.
  - Additional training by the certificate holder.
  - Sufficient demonstrable experience in the supervision of ETICS installation for the relevant building type (minimum of 5 projects with total coverage in the region of 750m<sup>2</sup>).
- 3.9 ETICS Team: Team responsible for the installation of an ETICS on a building, consisting of at least one ETICS Supervisor and ETICS Operative (can be the same person).

## **4.0 Scheme Requirements**

### **4.1 Certificate Holder**

The certificate holder shall:

- a) Prepare and implement an approval scheme for ETICS Operatives/ETICS Supervisors, including relevant documentation/records etc. Criteria should include as a minimum:
- Skill levels additional to those defined in Section 3.7 and 3.8.
  - Training requirements – training course content to be agreed with NSAI.
  - Proven knowledge of the certified system (practical and theoretical). This may be demonstrated by way of practical and theoretical examination and on-site training/monitoring.

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- b) Prepare and implement a training programme for ETICS Operatives/ETICS Supervisors, including all relevant documentation/records etc. This shall include attendance at a formal training course run by the certificate holder which covers:
- Principles; System types; System selection; Performance; Materials (including renders, adhesives, mesh, beads, sealants, insulation etc); Design (wind loading, condensation, thermal properties etc); Avoiding risks; Best practice details; Installation; Repairs; Durability and maintenance; Application (including practical work); Refurbishment; Particular certificate requirements; Certificate holder requirements; Contractor responsibilities; Health and safety; Certificate specific training (e.g. drying times, fixing, making the building watertight etc).
  - Contractual obligations.
  - Quality control/monitoring requirements.
  - Approved installer requirements.

NSAI considers at least 3 – 5 days necessary to cover, including adequate on-site training.

The NSAI Agrément assessment of the ETICS system for certification will include an assessment of the training course content, which shall be adequate and appropriate and shall include a final examination.

- c) Confirm in writing that the installer has been approved by the certificate holder in accordance with 4.1 a) and b), and that the certificate holder supports this installer's application to become an NSAI approved installer for ETICS.
- d) Assess, approve, monitor and keep under review the Approved Installer to confirm ability to install in accordance with:
- The valid NSAI Agrément Certificate(s);
  - The certificate holder's project specific design, site survey sheet, building details, method statement and maintenance plan;
  - The certificate holder's Code of Practice/Charter for approved installers.
  - Any other relevant information provided by the certificate holder;
  - Any additional requirements specified in the NSAI Agrément ETICS Scheme document.

The certificate holder must provide close supervision of the first 5 jobs for each installer, included recorded site visits.

The certificate holder should identify any aspects of the Approved Installer procedures and performance which could affect quality of workmanship on an ETICS project, including performance of ETICS Supervisors/Operatives where necessary.

- e) Maintain current technical documentation, including installation/instruction manuals, Home Owners Manual, product literature etc.
- f) Make available to the Approved Installer the required equipment, materials etc.

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- g) Maintain technical support to the Approved Installer, including the provision of all current technical documentation and any additional training to deal with product/system development.
- h) Notify NSAI in writing when an Approved Installer is no longer approved by the certificate holder.
- i) Make available to NSAI, on request, documentation that demonstrates compliance with the above requirements.

#### **4.2 Approved Installer**

The Approved Installer shall:

- a) Comply with all statutory regulations.
- b) Install the ETICS in compliance with:
  - The valid certificate(s) including the use of approved materials;
  - The certificate holder's project specific design, site survey sheet, building details, method statement and maintenance plan;
  - The certificate holder's Code of Practice/Charter for approved installers.
  - Any other relevant information provided by the certificate holder;
  - Any additional requirements specified in the NSAI ETICS Scheme document.
- c) Ensure each installation project is carried out by at least one ETICS Team that is adequately supervised by an ETICS Supervisor who has been identifiably audited for that system by NSAI.
- d) Maintain and make available for inspection all relevant records. Records shall be maintained (10 years minimum and in accordance with any legal/contractual requirements) and shall include as a minimum:
  - Training certificates for ETICS Supervisor(s) and ETICS Operative(s);
  - Photographs of all jobs, showing key features/details/discrepancies, at the five key stages of the job (Preparation; Boarding; Base coat; Finish coat; Completion);
  - ETICS Team structure;
  - Register of all completed/current installations;
  - Project specific site survey sheet and inspection/check sheets;
  - Project specific documentation (project specific design etc);
  - Product traceability records;
  - Customer complaint records.

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- e) Provide proof at the time of their assessment that they have adequate experience in this field.
- f) Ensure that all people working on the job have adequate experience and training to enable them to carry out installation in accordance with the above requirements.
- g) Provide themselves with such equipment as required to carry out the installation. All such equipment shall be properly maintained and regularly calibrated to National Standards, where applicable. All materials and components shall be stored in accordance with the manufacturer's and certificate holder's instructions.
- h) Provide the home owner with the Home Owners Manual and any other relevant documentation.
- i) All site activities must be in compliance with the HSA (Health & Safety Authority) requirements.

### **4.3 NSAI**

NSAI shall:

- a) Ensure that the assessment/surveillance is undertaken by personnel who are adequately trained and experienced in the technology to enable them to assess compliance with the requirements of the ETICS Scheme.
- b) Address the requirements of Sections 4.1 and 4.2 of the ETICS Scheme during the assessment/surveillance of an Approved Installer.
- c) Require a separate contract to be completed for each NSAI Agrément certificate.
- d) Maintain an up-to-date web register of Approved Installers. If an Approved Installer is found not to comply with the criteria specified in the ETICS Scheme, they will be removed from the register.

## **5.0 Application and Assessment Procedure**

### **5.1 Summary**

- a) The applicant shall be audited against the scheme requirements detailed in this document (i.e. the valid NSAI Agrément certificate(s), the project specific documentation including site survey sheet and project specific design, any additional requirements specified in this NSAI Agrément ETICS Scheme document) and shall satisfy NSAI regarding the ability to comply consistently. All major non-compliances must be resolved prior to issue of an approval.

Major non-compliances include:

- Use of un-certified materials, i.e. materials not specified on the relevant certificate;

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- Unauthorised deviation from project specific design/site survey sheet;
- Failure to maintain project specific documentation, as stated in Section 4.2 d);
- Inadequate storage of materials in on-site or off-site location;

Please note that the above list is not exhaustive.

- b) After registration, NSAI will carry out regular surveillance audits (typically one per year) to confirm ongoing compliance. The number of audits will take into consideration the number of ETICS Teams and the volume of work being completed. Visits to previous completed works may be considered.
- c) NSAI reserves the right to carry out and charge for additional audits where serious discrepancies or non-compliances are identified.

Where NSAI identifies significant non-compliance due to failure to adhere to these certification criteria, NSAI will inform the installer and the certificate holder, and will require reasonable and appropriate corrective action. The installer and/or certificate holder will be expected to commit to completion of the corrective action within an agreed period. Failure to do so may result in the Approved Installer being withdrawn from the list of registered installers, or the certificate being withdrawn/suspended. **Note:** If major site issues are found on a registration or surveillance audit, the installer will be immediately removed from the register until the issues have been resolved to the auditor's satisfaction.

- d) The Approved Installer will be permitted to use the Approved Installer number, in conjunction with the NSAI Agrément logo, on product literature etc. The NSAI Agrément conditions for use of the logo shall be complied with.

## 5.2 Registration Process

### 5.2.1 Application

The application form is received with the following:

- All key information filled in:
  - Company Name
  - Trading As (if applicable)
  - Contact
  - Address
  - Phone Number
  - Email
  - ETIC System Details
  - Approval by Certificate holder
- C2 form
- Standing order form
- Signed contract

### 5.2.2 Stage 1 – Initial Meeting

A meeting will be arranged by NSAI with the applicant and their certificate holder. At this meeting, the NSAI representative will audit various documentation, such as the training certificate, Safe Pass qualification, and the record keeping system.

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The NSAI representative will also assess the experience level of the applicant. Where this does not match the requirements of the ETICS Scheme Document, the certificate holder will agree to supervising the applicant's first 5 projects and submit evidence of this to NSAI (see 5.2.4 Stage 4).

The applicant and certificate holder will also have to provide the following completed documentation based on a project quoted for or a 'dummy' project:

- Site Survey Sheet
- Project Specific Design
- Quotation to Client

The NSAI representative will then audit this completed documentation with the applicant and certificate holder.

If the audit result is satisfactory, the applicant will be placed on the NSAI register of ETICS installers for their first project with an installer number in the format PIAB/E--- and will move onto Stage 2 or Stage 3 as appropriate. **Note:** this provisional registration will last for a maximum period of 3 months, after which time the installer will be removed from the register.

If the audit result is not satisfactory, there are two options:

- Applicant must provide evidence of corrective actions within 10 working days; or
- A second Stage 1 meeting will have to be conducted.

The Stage 1 meeting can be conducted at the same time as the Stage 3 visit in the case of an already registered installer applying to change or add a system.

### **5.2.3 Stage 2 – Review of Documents Sent to NSAI**

If the project documentation reviewed in Stage 1 was for a 'dummy' project, the applicant must upon obtaining their first project, and BEFORE commencing work on that project, send the following completed documentation to NSAI for review:

- Site Survey Sheet
- Project Specific Design
- Quotation to Client

The NSAI representative will then audit this documentation, communicating with the applicant and/or certificate holder where necessary.

If the audit result is satisfactory, the applicant will be authorised to commence work on the project and will move onto Stage 3.

If the audit result is not satisfactory, there are two options:

- Applicant must provide evidence of corrective actions within 10 working days; or
- A second Stage 2 documentation review will have to be conducted.

### **5.2.4 Stage 3 – Site Visit**

The applicant MUST inform NSAI of when their first project is to commence, providing a minimum of 2 weeks notice in order for a site visit to be arranged by the NSAI representative. Failure to inform NSAI of the first project will result in the applicant being removed from the NSAI register of ETICS installers, and the application will become invalid.

Before the first project has been completed, NSAI representative will visit the site and conduct an audit of the applicant, with the certificate holder in attendance if possible. NOTE: The certificate holder must be in attendance if the applicant does not meet the experience requirements of the ETICS Scheme (see 5.2.2 Stage 1).



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If the audit result is satisfactory, the applicant will remain on the NSAI ETICS register, their registration number will be changed to IAB/E--- and they will be issued their NSAI Agrément installer logo.

If the audit result is not satisfactory, there are two options:

- Applicant must provide evidence of corrective actions normally within 8 weeks; and/or
- A second Stage 3 site audit will have to be conducted.

### **5.2.5 Stage 4 (If Required) – Review of Certificate Holder Supervision**

If the applicant does not have the required amount of ETICS experience per the NSAI ETICS Scheme, the certificate holder will agree to supervising the applicant's first 5 projects and submit evidence of this to NSAI (see 5.2.2 Stage 1). When these 5 projects have been completed, the certificate holder will send the completed inspection/check sheets for these projects to NSAI for review.

If the audit result is satisfactory, the applicant will remain on the NSAI ETICS register.

If the audit result is not satisfactory, there are two options:

- Applicant must provide evidence of corrective actions within 10 working days; and/or
- A second Stage 4 audit will have to be conducted.

### **5.3 Surveillance Process**

- a) Following successful registration, the installer will be audited by NSAI on an annual basis in order to maintain their registration. Failure to facilitate this annual audit will result in the installer being removed from the NSAI register of external insulation installers, and the installer will then have to re-apply and be re-audited in order to get back onto the register.
- b) The applicant shall be audited against the scheme requirements detailed in this document (i.e. the valid NSAI Agrément certificate(s), the project specific documentation including site survey sheet and project specific design, any additional requirements specified in this NSAI Agrément ETICS Scheme document) and shall satisfy NSAI regarding the ability to comply consistently. All major non-compliances shall be resolved prior to issue of an approval.

Major non-compliances include:

- Use of un-certified materials, i.e. materials not specified on the relevant certificate;
- Unauthorised deviation from project specific design/site survey sheet;
- Failure to maintain project specific documentation, as stated in Section 4.2 d);
- Inadequate storage of materials in on-site or off-site location;

Please note that the above list is not exhaustive.

- c) If successful, NSAI will provide written confirmation of approval, and maintain the Approved Installer on the list of registered installers on the NSAI website. Actions or improvements may be required as described in the audit report. The certificate holder is to ensure that such items are dealt with adequately. The remedies may be checked on a subsequent surveillance audit.

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- d) If unsuccessful due to minor defects, the installer will remain on the NSAI register for a period of 8 weeks pending the resolution of the audit. Actions or improvements of minor significance must be reported to NSAI in one submission within 8 weeks following issue of the report. The certificate holder and the installer are to agree and implement the necessary remedies under the supervision of the certificate holder. The installer is to provide adequate photographic and documentary evidence to NSAI in a single submission to demonstrate adequate remedies have been carried out. The certificate holder is to issue to NSAI confirmation of their satisfaction with the remedies carried out. If the submission leads to a satisfactory outcome of the audit, the installer will continue to be included in the NSAI register for another year. If there is not an adequate response within 8 weeks of the report being issued, NSAI will issue the installer with notice of their intention to withdraw the installer from the NSAI ETICS installer register.
- e) If unsuccessful due to major defects, the installer will remain on the NSAI register in order to complete the necessary remedies of site issues identified during the audit and to subsequently undertake a single further installation on which a 2<sup>nd</sup> surveillance audit will be carried out. Actions or improvements of significance must be reported to NSAI in one submission within 8 weeks (following issue of the report). The certificate holder and the installer are to agree and implement the necessary remedies under the supervision of the certificate holder. The installer is to provide adequate photographic and documentary evidence to NSAI in a single submission to demonstrate adequate remedies have been carried out. The certificate holder is to issue to NSAI confirmation of their satisfaction with the remedies carried out. If there is not an adequate response within 8 weeks of the report being issued, NSAI will issue the installer with notice of their intention to withdraw the installer from the NSAI ETICS installer register. Following resolution of the issues identified in the audit, the installer may undertake one further installation which will be subject to a 2<sup>nd</sup> audit. If this 2<sup>nd</sup> audit is not satisfactory, the installer will be removed from the register of approved installers.
- f) If unsuccessful due to major site defects, the installer will be immediately de-registered until the issues raised are resolved.
- g) NSAI reserves the right to carry out and charge for additional audits where serious discrepancies or non-compliances are identified.
- h) Where NSAI identifies significant non-compliance due to failure to adhere to these certification criteria, NSAI will inform the installer and the certificate holder and will require reasonable and appropriate corrective action. As outlined above, the installer and/or certificate holder will be expected to commit to completion of the corrective action within an agreed period. Failure to do so will result in the installer being withdrawn from the list of registered installers, and may result in the NSAI Agrément certificate being withdrawn/suspended.
- i) Where NSAI identifies significant non-compliances in finished projects, NSAI will also inform the relevant agencies (i.e. SEAI, Bord Gáis, Electric Ireland) where appropriate

#### **5.4 Validity of Approval**

- a) The approval remains valid until further notice, provided that:
- The certificate remains valid;
  - The Approved Installer continues to meet the certificate holder's approval requirements;

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- No major non-compliances are brought to the attention of NSAI, e.g. via surveillance audits, customer complaints etc;
  - No information to undermine the validity of the certificate is brought to the attention of NSAI;
  - The NSAI Agrément logo, certificate number and Approved Installer's number are used correctly;
  - The appropriate fees are paid to NSAI.
- b) NSAI may decide to withhold/withdraw the approval in accordance with NSAI procedures.
- c) The Approved Installer may appeal the decision to withhold/withdraw approval in accordance with the NSAI appeals procedure.

### **5.5 Selection and Testing of Materials**

NSAI may select and remove from store or site, samples of material/product for assessment or testing, or may request that testing or analysis be carried out on selected samples. NSAI shall not be charged for such samples, testing or analysis; such charges will be passed onto the installer/certificate holder.

### **5.6 Communication**

NSAI will contact the installers and certificate holders directly to discuss any discrepancies, variations or complaints. NSAI will keep the certificate holder advised of any significant matters which may affect the status of the Approved Installer.

Information regarding the current status of an Approved Installer/certificate may be obtained from the NSAI website. NSAI will not comment on applications in progress to a third party unless authorised to do so by the applicant.

### **5.7 Appeals**

All appeals over decisions taken by NSAI or its auditors shall be made in writing to:

Director of NSAI Agrément,  
NSAI,  
1 Swift Square,  
Northwood,  
Santry,  
Dublin 9.

It is essential that this communication states the grounds and detailed reasons for the appeal. Any documents referred to in the appeal should, where possible, be attached to the appeal. The appeal should be signed by the appellant or a properly authorised representative of the appellant.

On receipt of the appeal, the Director shall acknowledge receipt of the appeal within 20 working days, together with an indication of the likely timescale for the provision of their decision.

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The investigation of the appeal shall include a reassessment of the course of events leading up to the appeal and the verification of the facts involved in the case. The investigation may include communicating with all the parties involved including the appellant.

## **5.8 Complaint Procedure**

If an installer, certificate holder, or homeowner wishes to complain to NSAI about the workmanship of an NSAI registered installer or NSAI certified system supplier, this complaint must be submitted in writing to NSAI or one of their auditors, preferably via email. The complaint must include the following information:

- Name of the installer/system supplier the complaint is against.
- Full details of the reason for complaint. Photographs clearly showing the issue(s) must be included with the complaint.
- Site address(es) where the poor workmanship has taken place.

Upon receipt of a complaint against an installer, NSAI will contact both the installer the complaint is against and the system supplier for that installer, notifying them of the details of the complaint and requesting a response to the issues raised within 2 weeks. Upon receipt of a complaint against a system supplier, NSAI will contact that system supplier, notifying them of the details of the complaint and requesting a response to the issues raised within 2 weeks. Where possible, NSAI will visit the site(s) to confirm the complaint, and where necessary, will request remedial action be taken by the installer and/or system supplier. NSAI will also notify SEAI where appropriate of any valid complaints received for work conducted under the Better Energy Homes grant scheme.

Please note that where an installer does not wish to complain to NSAI directly, they may submit their complaint to their system supplier who can then pass on the complaint to NSAI without naming the installer making the complaint.

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## 6 Marking and Labelling

In accordance with NSAI procedures, an Approved Installer will be permitted to use their unique NSAI Agrément logo, which includes:

- a) The NSAI Agrément logo.
- b) The classification "ETICS Approved Installer" or "ETICS Approved Installer (Multi-Storey)".
- c) The name(s) of the NSAI Agrément approved ETICS the installer is approved for.
- d) The Approved Installer's name.
- e) The Approved Installer's number.

## 7 Fees

Please refer to our fee document D-IAB-009.

## Appendix A Guidance Notes

These notes have been prepared by NSAI as a supplementary checklist/guidance to the specific requirements of the ETICS scheme and the SEAI Better Energy Homes Scheme, and are not a substitute or alternative to the requirements of the schemes.

### Training

#### Certificates

Training certificates are to be issued by the certificate holder to ETICS Supervisors and Operatives who have succeeded in their training course.

Training certificates should contain at least the following information:

- Name of certificate holder issuing the training certificate.
- NSAI Agrément certificate number of the system.
- Name of trainee.
- Date.
- Grade of trainee - Operative or Supervisor.
- Category of training – Approved Installer or Approved Installer (Multi-Storey).

### ID

ID cards are to be issued by the certificate holder to ETICS Supervisors and Operatives who have succeeded in their training course. ID Cards should contain at least the following information:

- Name of certificate holder issuing the card.
- NSAI Agrément certificate number of the system.
- Photo of card holder.
- Name of card holder.
- Supervisor or Operative grade.
- Approved Installer or Approved Installer (Multi-Storey).
- Expiry date of card (to be up to maximum of 3 years from date of issue).

### NSAI Agrément Certificates

Installers are required to have a copy of the NSAI Agrément Certificate(s) for the system(s) which they install.

### NSAI Agrément Approval

Installers are required to have a copy of the latest NSAI Agrément Approval Scheme – Installers of External Thermal Insulating Composite

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**Scheme (ETICS)** Systems (ETICS). Installers should be familiar with the contents of the document and particularly Section 4.2.

**Installation / Design Manual** Installers are required to have a copy of the technical literature and instruction manuals issued by the certificate holder(s) of the system(s) they are installing, which should contain sufficient information to cover all the typical details of system selection, materials, best practice design and application, repairs and maintenance.

**IS EN 13914-1** Installers are recommended to keep a copy for reference of IS EN 13914-1: 2005; *Design, Preparation and Application of External Rendering and Internal Plastering*. The certificate holder can source the document from NSAI.

**Register of Installations** Installers are required to maintain a register of all current and completed installations to include at least the following information:

- Client name.
- Client contact details – address and phone number.
- Address of installation (if different).
- ETICS Supervisor.
- System name & certificate number.
- Date of commencement and completion.

**Complaints** Installers should have a method statement for dealing with complaints. This statement should note at least the following information:

- All complaints to be reported/referred to a nominated complaints manager.
- Complaints and outcomes to be recorded on a complaints record form.
- Where the complaint relates to a technical or performance issue, the certificate holder is to be informed of the complaint by the installer. In that case the certificate holder will be involved in resolution of the complaint.
- The complaints manager will visit the site and discuss the issue with the complainant.
- The complaints manager, installer and certificate holder will use their best efforts to resolve the complaint.

The complaints record form should include at least the following information:

- Date complaint received.
- Name of complaints manager responsible for dealing with complaint.
- Name of complainant.
- Contact details of complainant – address and phone number.
- Address of site of complaint.
- Details of complaint.
- Photos as appropriate.
- Details of certified system being installed.
- Materials records/batches as appropriate.
- The action required to resolve complaint and the person or company who is responsible for that action.
- Action required preventing recurrence of the problem.
- Record of complaint manager's letter of closure to complainant.
- Authorised signature of closure and date.

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**Team Structure** Installers are required to keep a record of their team structure which should contain at least the following information:

- The name of the company
- The name of the individual responsible for the overall ETICS scheme.
- The personnel trained as supervisors, showing which system each is trained for.
- The personnel trained as operatives showing which system each is trained for.

**Health & Safety Statement** Installers are required to comply with the requirements of HSA and Health, Safety & Welfare at Work legislation. Installers are required to have a current Health & Safety Statement.

Installers will also find it useful to have a brief H&S risk assessment method statement addressing the typical issues in domestic ETICS installations, modified as appropriate for particular hazards/risks in individual sites, for the protection of staff, occupants, neighbours, public.

**Job Records** Installers should maintain a file for each job which will include at least the following information:

- Site Package, to include:
  - Site Survey Sheets.
  - Project Specific Design.
  - Standard documentation (can be used repeatedly on other sites)
    - NSAI Agrément certificate
    - Standard specifications
    - Product data sheets
- Quotations/Invoices.
- Product traceability records.
- Photos of before, during and completion of installation.
- Check sheets/Inspection Records.
- Home Owners Manual (job specific data only).

Details of the contents of those documents are described in this document.

**Site Survey Sheets** Site survey sheets should record conditions found on site prior to commencement and identify and record an appropriate solution. The site survey sheet should be referred to throughout the job with confirmation that measures have been implemented recorded on check sheets / inspections. The site survey notes should identify and record at least the following information:

- Date of survey.
- Surveyor's name.
- Clients name and contact details.
- Site address.
- Consideration of proposed external wall insulation relative to Planning Permission status:
  - Is the proposed work exempted development (from the requirement to seek planning permission) as defined *"development consisting of the carrying out of works for the maintenance, improvement or other alteration of any*

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*structure, being works which affect only the interior of the structure or which do not materially affect the external appearance of the structure so as to render the appearance inconsistent with the character of the structure or of neighbouring structures” (reference clause 4 (1) (h) Planning and Development Act, 2000 – SI 30 of 2000 )?*

- Is the building a protected or proposed protected structure or is it located in an area of architectural conservation? If there is a possibility of this being so, seek expert advice or contact the Local Authority.
- Health & Safety issues including access to complete works.
- Details of building form and dimensions, including sketches of each external wall.
- Photos as appropriate.
- Party/separating walls and floors requiring fire barriers.
- Fire separation requirements at boundary
- Exposure to impact (parking, ballgames, vandalism etc.) and establish impact resistance category required.
- Exposure to heat (barbeque, bonfires etc).
- Close or abutting elements that could induce moisture or require special consideration, including garden walls.
- Details of wall construction including an inspection of the tops of cavity or hollow block walls (at wall plate and sloping gables) to ensure walls are sealed.
- Confirm details of existing cavity/dry lining insulation (e.g. boroscope).
- Details at roof/wall junction.
- Detail at floor/DPC level.
- Evidence of dampness in walls.
- Exceptional moisture on wall such as significant roof rain water runoff.
- Plant growth and residues requiring sterilising/cleaning off.
- Structural condition (pull test if appropriate).
- Surface/render/paint condition.
- Decorative bonded slips or facings material.
- Cracks and movement joints.
- Details of openings and reveals; doors and windows.
- Window sill and door threshold conditions.
- Adequacy of roof overhangs
- Details of abutting roofs.
- Architectural features.
- Building ventilators for roof and subfloor.
- Room ventilators and extractors.
- Details of services at external walls;
  - Flues and chimneys.
  - Rain water pipes and outlets.
  - Foul and waste pipes and outlets.
  - Gas pipes, brackets and meter housing.
  - ESB cables, brackets, meter housing and earth rods/boxes.
  - Outside lights and sockets.
  - NTL/telecoms cables and fittings.
  - Satellite dishes and cables.
  - Alarm boxes and cables.



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- Affected gulleys, AJs, manholes and other covers or ground features.
- Other.
- Structural fixings such as awnings, clothes lines, hose-reels, gates or hanging baskets etc.
- Issues raised by client.
- Other exceptional conditions.

### **Project Specific Design**

Certificate holders must develop a project specific design for each installation. The following information should be considered for inclusion:

- Client name and contact details.
- Site address.
- Response to specific issues identified in site survey.
- Specific identification of all materials to be used:
  - Adhesives.
  - Fixings.
  - Insulation statement with description of each insulation type, thickness and thermal resistance, including a U-value calculation (completed by a competent person) for the particular complete wall construction.
  - Description of insulation at thermal bridges.
  - Basecoats.
  - Mesh.
  - Primers and finish coats.
  - Sills.
  - Accessories.
- Method statement for the installation of the materials.
- Specification/detail drawings in response to all special features of the building as identified in the site survey and particularly:
  - Fire barriers/fire resistance of walls close to boundaries.
  - Impact resistance
  - Treatment of openings at top of cavity or hollow block walls.
  - Details at eaves and DPC level.
  - Moisture, dampness, weepholes
  - Surface preparation.
  - Movement joints.
  - Window sills and door thresholds.
  - Reveals at openings.
  - Detailing at abutments.
  - Surface features.
  - Building ventilation – roof and sub-floor.
  - Room ventilation.
  - Building services – as identified from survey.
  - Ground, gulleys and covers.
  - Fixtures and fittings.
  - Exceptional items
- Description of areas not receiving external wall insulation, outlining the reason for the omission and alternative insulation measures to be applied.
- Description of special provisions for maintenance

### **Quotation**

Clear information in a quotation will benefit both the client and installer. It is recommended that quotations should contain sufficient detail to summarise a proposal to client, including at least the following

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information:

- Installers name and contact details
- Date
- Client name
- Site address
- System description and NSAI Agrément number
- Materials outline description
- General and local U-values achieved
- Reveal insulation standard
- Sill treatment
- Insulation to continue above (preferred) eaves or stop below
- Insulation to continue below (preferred) DPC or stop at DPC
- Areas omitted (note that the installer should inform the client about SEAI requirements)
- Installers attendances included or required to be provided by client.
- Terms of Warranty
- Price: Net, VAT and gross total.

### **Invoices**

Clear information in an invoice will benefit both the client and installer. It is recommended that invoices must be on installer's letterhead and should contain at least the following information:

- Client name
- Site address
- Reference to the quotation
- Statement of stage reached
- Reference to any variation or amount to be retained/withheld
- Invoice amount: Net, VAT and gross total.

### **Product Traceability Records**

Installers are required to retain sufficient delivery dockets/labels/batch numbers to be able to allow identification of the correct source of all materials and the batches of materials used (for reference in the event of a defect). In practice, unless delivery dockets record batch numbers and date of manufacture, installers will have to record the information as material is delivered.

### **Check sheets / Inspection Records / Photos**

Regular site inspections should be recorded at the five key stages (Preparation; Boarding; Basecoat; Finish; Completion). Installers should refer to the Site Survey Sheet during this process. Items covered should include at a minimum:

- Photos (hard or soft copy) of overall works and special features taken prior to commencement and at the five key stages of the job.
  - Plinth
  - Walls
  - Window sill
  - Reveals
  - Flashings
  - Abutments
  - Beads and sealants
  - Impact resistance – mesh layer(s), stress patches at all corners
  - Fire resistance – boundaries, fire barriers, chimneys, flues
  - Ventilation – roof/wall/floor/heat producing appliances
  - Electricity/gas meter boxes/cables

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- Surface fixtures
- Drains, wastes, gulleys, gutters
- A form recording:
  - Date of inspection.
  - Site address.
  - Name of supervisor doing inspection.
  - Stage reached – Preparation/Boarding/Base Coat/Finish/Complete.
  - Visits by certificate holder’s representative during that stage.
  - Conditions:
    - Weather at time and since last inspection, including high/low temperature extremes.
    - Health & Safety – signage, PPE, scaffold, tidiness of site.
    - Edge protection on flat roofs/balconies/platforms.
    - Access on adjoining property - prevented or permitted.
  - Standard Materials and Workmanship
    - Compliance with specification (standard installer’s checklist).
    - Adequate storage conditions.
  - Special features of the works as identified in the site survey and project specific design
    - Fire barriers/fire resistance of walls close to boundaries.
    - Impact resistance
    - Treatment of openings at top of cavity or hollow block walls.
    - Details at eaves and DPC level.
    - Moisture, dampness, weepholes
    - Surface preparation.
    - Movement joints.
    - Window sills and door thresholds.
    - Reveals at openings.
    - Detailing at abutments.
    - Surface features.
    - Building ventilation – roof and sub-floor.
    - Room ventilation.
    - Building services
    - Ground, gulleys and covers.
    - Fixtures and fittings.
    - Exceptional items
  - Installation as per design/different to design (authorised variations).
  - Issues raised by client.
  - Additional issues for attention.

**Home Owners Manual**

The Home Owners Manual must be specific to Irish conditions and the individual installation as appropriate. The site specific information should be provided to the home owner in hard copy, and generic information may be in digital format or hard copy – a hard copy option must be offered to all home owners. The Home Owners Manual should contain at least the following information:

- Site specific:

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- A statement highlighting that this is an important document that should be retained, and listing the contents of the manual.
- The address of the installation.
- Description of the installation, including colour references for all elements.
- Name of installer and contact details – address, phone number and email.
- Name of certificate holder and contact details – address, phone number and email.
- A BER information statement describing:
  - Insulation type(s), manufacturer, thickness(es), thermal conductivity.
  - U-value calculation for each different wall panel type. These calculations should be confirmed as issued by a named competent authority. Copies of suppliers calculations should be supplied where possible.
  - Insulation at reveals – type and manufacturer, thickness(es), thermal conductivity.
- Warranty document, dated and signed by the certificate holder/Installer as appropriate.
- Generic:
  - Copy of the NSAI Agrément certificate.
  - General information about the system installed.
  - Hazard warnings:
    - Ladders
    - Light/heavy fixings
    - Impact – vehicles, games etc.
    - Heat damage – bonfires, barbeques, hot work etc.
    - Plant growth, creepers on or behind ETICS.
  - Maintenance and repair advice:
    - Inspection
    - Cleaning
    - Decoration
    - Mould/algae
    - Window/door replacement.

Generally extraneous or irrelevant material such as specifications of other systems should not be given to the home owner.

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## Appendix B Ventilation

These notes have been prepared by NSAI as a supplementary guidance to the specific requirements of NSAI Agrément certificates and the SEAI Better Energy Homes Scheme, and are not a substitute or alternative to the requirements of these documents.

Section 5 of the Better Energy Homes Scheme Contractors Code of Practice and Standards and Specifications Guidelines (Version 5.0 August 2011) states that in undertaking the works, and on the basis of the findings of an initial assessment of the home, the contractor must:

1. Ensure that the works to be undertaken will not compromise the existing necessary ventilation provisions in the home to the detriment of the air quality and/or living environment therein.
2. Inform the homeowner where it is noted that the existing necessary ventilation provisions have already been adversely affected by actions of the homeowner or other parties.
3. Inform the homeowner of any aspects of ventilation considered to be inadequate or potentially unsafe (particularly with rooms containing fuel burning appliances).
4. Make appropriate recommendations to the homeowner in respect of 2 and 3 above. It is then the responsibility of the homeowner to rectify these issues, with or without the involvement of the contractor, **before** works pertaining to the Better Energy Homes scheme can commence. (Additional wall ventilators or other ventilation provisions may be supplied by contractors as part of the refurbishment works. Where this is agreed as part of the refurbishment contract works may proceed).

There are 3 main types of ventilation that an external insulation contractor will encounter: Sub-floor ventilation, Room ventilation, and Roof ventilation.

### Sub-floor Ventilation

Where a dwelling has sub-floor ventilation, this ventilation must be maintained through the external insulation using a sealed sleeve from the original wall through the external insulation and a suitable weathered vent panel fitted to the external face of the insulation board. Where a dwelling requires sub-floor ventilation and it has not been installed or it has been blocked, the contractor must notify the homeowner of this in writing, and it is then the homeowner's responsibility to take remedial action to address this **before** the works proceed unless the homeowner specifies that the contractor is to carry out the remedial action, in which case the works may proceed.

To calculate the number of ventilation opes required for sub-floor ventilation, multiply the total length of perimeter wall by the minimum ventilated opening required per metre run of wall (i.e. 1500mm<sup>2</sup>) and divide by the free air opening of the ventilator being used (e.g. 5400mm<sup>2</sup> for a typical purpose designed telescopic wall ventilator).

### Room Ventilation

Where a dwelling has adequate room ventilation, as defined by Technical Guidance Document to Part F 2002 or 2009 as appropriate of the Building Regulations, this ventilation must be

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maintained by the contractor using a sealed sleeve from the original wall through the external insulation and a suitable weathered vent panel fitted to the external face of the insulation board in the case of wall vents.

Where a dwelling has inadequate or no room ventilation, the contractor must notify the homeowner of this in writing, and it is then the homeowner's responsibility to take remedial action to address this **before** the works proceed unless the homeowner specifies that the contractor is to carry out the remedial action, in which case the works may proceed. This remedial action can take the form of installing wall vents, a ventilation system such as a mechanical heat recovery unit, or installing trickle vents in the windows. The remedial action must comply with the following basic requirements:

- A habitable room other than a utility room, a kitchen or bathroom, requires a ventilation opening suitable for background ventilation having a total area not less than 6500mm<sup>2</sup>, and a ventilation opening suitable for rapid ventilation having a total area of at least 1/20<sup>th</sup> of the floor area of the room.
- Any room or space containing a solid fuel burning open appliance should have a ventilation opening (or openings) with a total free area of at least 50% of the appliance throat area (of which at least 6500mm<sup>2</sup> is permanent ventilation).
- Any room or space containing any other solid fuel burning appliance should have a permanent air entry or opening with a total free area of at least 550mm<sup>2</sup> per kW of rated output above 5kW, but in no case less than 6500mm<sup>2</sup>. Where a flue draught stabiliser is used the total free area should be increased by 300mm<sup>2</sup> for each kW of rated output.
- Any room or space containing a gas burning open-flued appliance should have a permanent ventilation opening of at least 450mm<sup>2</sup> for each kW of appliance input rating, but in no case less than 6500mm<sup>2</sup>. For decorative fuel effect fires, a minimum ventilation opening of 10000mm<sup>2</sup> is required. For fixed space heaters, a minimum permanent ventilation opening of 12000mm<sup>2</sup> is required. Further guidance should be sought from I.S. 813 *Domestic gas installations*.
- Any room or space containing an oil burning appliance (other than a balanced-flued appliance) should have a permanent ventilation opening of free area at least 550mm<sup>2</sup> for each kW of rated output above 5kW, but in no case less than 6500mm<sup>2</sup>.

It is a requirement of the Regulations that wet rooms such as kitchens and bathrooms also require mechanical extract ventilation in addition to the rapid ventilation opening having a total area of at least 1/20<sup>th</sup> of the floor area of the room. Where this mechanical extract ventilation is not in place, the contractor must notify the homeowner of this in writing, outlining the potential consequences of inadequate ventilation in these rooms. These include the risk of condensation occurring as a result of increased temperature and humidity within the dwelling following implementation of energy conservation measures. The contractor may then proceed with the installation of external wall insulation.

### **Roof Ventilation**

Where a dwelling has roof ventilation at the eaves, this ventilation must be maintained or replaced by the contractor if blocked or partially blocked by the insulation.

Adequate ventilation at the eaves is defined as continuous ventilation running the full length of the eaves and 10mm wide.

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For standard pitched roofs with pitch of 15° or more, this equates to:

- Linear strip vent 10mm wide along the entire length of the eaves;
- 100mm diameter vents placed at 470mm centres;
- 75mm diameter vents placed at 265mm centres.

For standard pitched roofs with pitch of less than 15°, including flat roofs, this equates to:

- Linear strip vent 25mm wide along the entire length of the eaves;
- 100mm diameter vents placed at 185mm centres;
- 75mm diameter vents placed at 100mm centres.

Please note that any vents placed on the fascia boards must be weathered vents.

Where a dwelling has inadequate or no roof ventilation at the eaves, the contractor must notify the homeowner of this in writing, outlining the potential consequences of inadequate ventilation of the roof space. These include the risk of condensation occurring as a result of increased temperature and humidity within the dwelling following implementation of energy conservation measures. The contractor may then proceed with the installation of external wall insulation.

### **Appendix C Insulating Cavity Walls**

As stated in S.R. 54:2014 *Code of practice for the energy efficient retrofit of dwellings*, external insulation should not be used with unfilled cavities due to the possibility of thermal bypass and thermal looping within the cavity, which reduces the thermal performance of the wall and leads to a poorer U-value. The cavity should be fully filled either as part of the original construction or as part of the retrofit measures where external insulation is used. For dwellings where the cavity may have been previously filled during original construction or an earlier energy retrofit, this may be established by a boroscope or infrared survey.

While pumping the cavity will result in an additional cost to the homeowner, it is likely that the thickness of external insulation board required to achieve the desired U-value will reduce as a result of the cavity being filled, which may help reduce the impact of this additional cost. A list of NSAI registered cavity wall insulation installers can be found on the NSAI website at [www.nsai.ie](http://www.nsai.ie)

Auditors will be requesting evidence on registration and annual surveillance audits that cavity walls have been fully filled before the installation of external insulation, and also evidence that an NSAI registered cavity wall insulation installer carried out the work.

Please note that while the NSAI Agrément certificates for cavity wall insulation state that a clear minimum cavity width of 40mm must exist if the wall is to be considered suitable for filling, this restriction does not apply in cases where the walls are to receive external insulation.