Rialtas na hÉireann
Government of Ireland

SUSTAINABLE ENERGY AUTHORITY OF IRELAND | ÚDARÁS FUINNIMH INMHARTHANA NA HÉIREANN

Guidance on Providing Photographic Evidence for Desktop Audits.

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Introduction

With the unexpected arrival of COVID-19 this year, many SEAI operations were temporarily suspended, not least our field-based services such as surveys, Building energy rating assessments (BER) and site inspections.

As a result, SEAI adapted its' approach to oversight on quality assurance and in some cases, the requirement for a completed BER assessment to progress grant payments.

Where site inspections could no longer proceed, desktop audits were introduced, using key certificates, documents and photos as evidence of the completed energy upgrade works.

The desktop audit process was successful in verifying installation of works on completed homes and allowing the release of many but not all payments. In some cases, follow-up site inspections were required.

SEAI has used the learnings from earlier desktop audits to better define a list of documentary evidence to refine the desktop audit process.

The intent is that this list will support a higher degree of verification of installation works and in turn, a higher level of payments being released, without requiring an on-site inspection.

SEAI **strongly recommends** that all Contractors completing works from here on, ensure that the attached list of certificates and documents / photographs are captured for each home/measure as this will greatly enhance SEAI`s potential to pay the homes should they be selected for audit or inspection.

Where desktop audits are introduced, if photographs cannot be taken or lack the necessary detail, then payments may be withheld. Details on how to upload documents will be provided if your home/measure is selected for a desktop audit.

The checklist and details of the evidence required (certificate, document or photograph) to support a desktop audit are outlined in this document on a measure by measure basis. The checklist is aligned with SEAI's Quality Assurance and Disciplinary Procedures (QADP) for BEH and SPV.

There are a number of photos which are common to several measures. These common photos confirm the location of the home and that the works have taken place. The common photos are as follows;

1. Front of the home
2. Both Sides/Gables of the home (if applicable)
3. Back/Rear of the home
4. The ESB meter, this is to confirm the MPRN number and year of build
5. Gas Meter (if applicable).

We are grateful for all your efforts and cooperation through out this time, if you have any queries, please keep in touch with our Call Centre at 01-808 2100.

Photo Requirements

Please follow the **four steps** below before commencing with the audit questions.

STEP 1

Geo-Tagging photos

The photos in the desktop audit must be geo-tagged as this is will aid everyone to confirm the location of the installation and will create a time stamp on the photo too. A guide to geo-tagging on both Android and iOS systems is below.

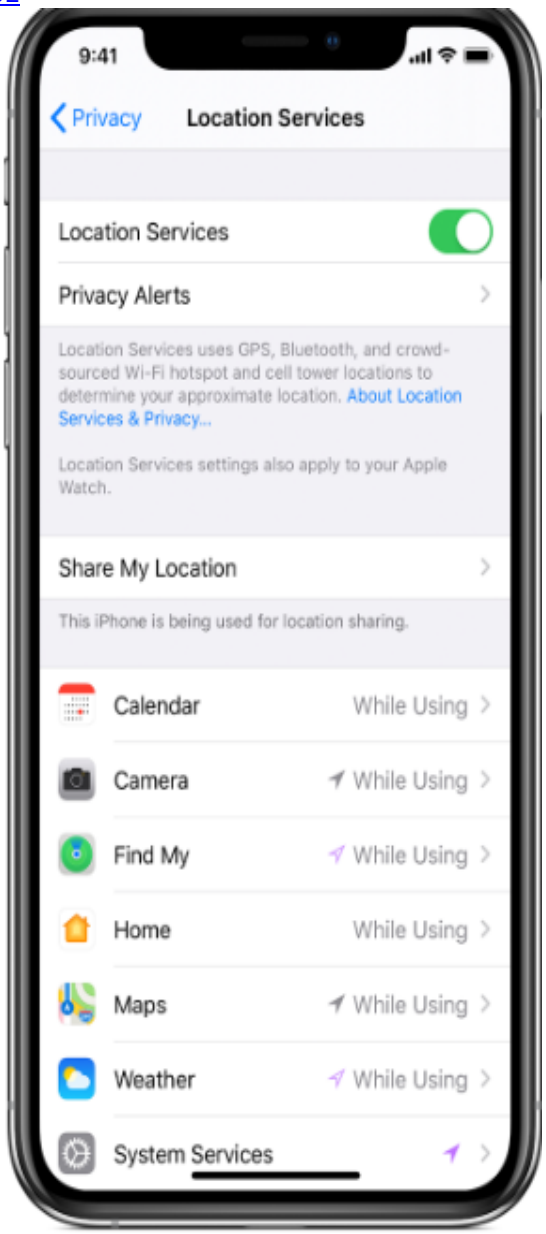
iPhone/iOS

Tap "Privacy" and then tap "Location Services" to open the Location Services screen. Toggle the virtual "Location Services" switch to the **on** position and then scroll down and toggle the "Camera" switch to the **on** position as well. You'll know the switches are turned on when they turn green. Alternatively click the link to the apple website which will give you additional guidance https://support.apple.com/en-gb/HT207092

How to turn Location Services on or off for specific apps

1. Go to Settings > Privacy > Location Services.
2. Make sure that Location Services is on.
3. Scroll down to find the app.
4. Tap the app and select an option:
   - Never: Prevents access to Location Services information.
   - Ask Next Time: This allows you to choose Always While Using App, Allow Once or Don't Allow.
   - While Using the App: Allows access to Location Services only when the app or one of its features is visible on screen. If an app is set to While Using the App, you might see your status bar turn blue with a message that an app is actively using your location.
   - Always: Allows access to your location even when the app is in the background.

From here, apps should provide an explanation of how the app will use your location information. Some apps might offer only two options. Learn more about privacy and Location Services.



Android devices

1. Go to your Android device's home screen, then press the "Menu" button. Tap "Settings" to access the settings menu.

2. Drag your finger up the screen to scroll down the phone's menu until you find the "Location" option. Tap the "Location" option to continue. Note that on some Android devices this may be labeled "Location and Security."

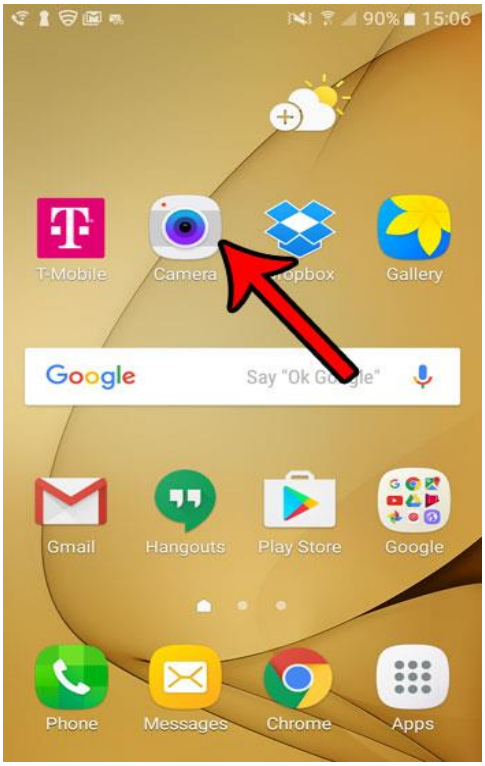
3. Tap the option labeled "Use GPS Satellites" to place a green check mark next to it. This option must be turned on for the geotagging option to work.

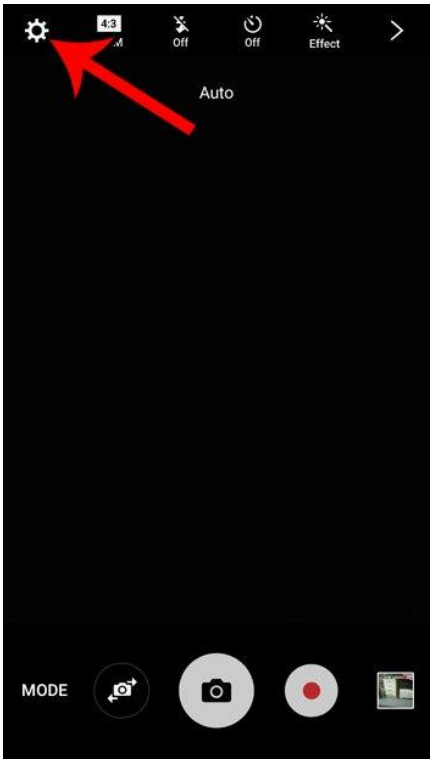
4. Press the "Home" button to go back to the main screen, then tap the camera icon to launch your Android smartphone's camera.

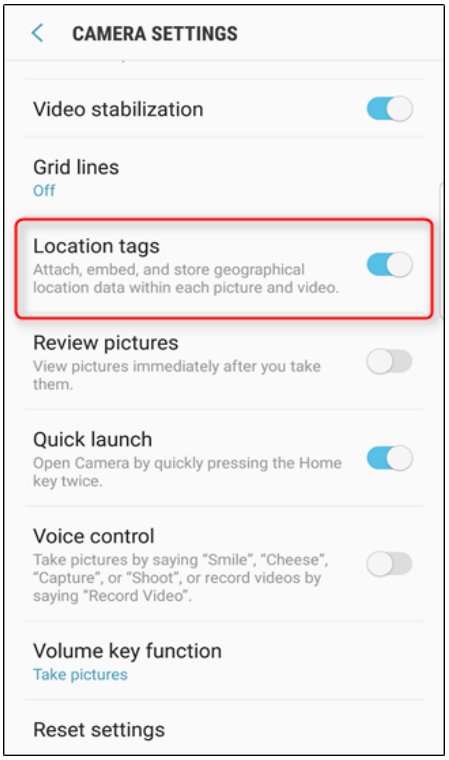
5. Tap the "Menu" button once the camera application loads, then tap the "Settings" option. On some Android cameras, this option will simply be a small cog icon.

6. Scroll down to "Store Location in Pictures," or "Geo-tag Photos," depending on your OS version, and tap that option to put a green check mark next to it. Tap "OK" when you see a message telling you that the GPS function needs to be turned on. Your photos will now be geotagged with your location if your phone can get your position from the GPS satellites.

Alternatively search online for your specific mobile handset on information on geotagging this should give you the necessary additional guidance required.







STEP 2

Common Photos are required to confirm the location of the home and the works have taken place. The common photos shall be taken in three stages:

A. Pre-install
B. Post works
C. During works - Please Note this applies only to the following measures;
    I. External wall insulation
    II. Internal wall insulation
    III. Floor Insulation

Photos Required in all installations,

1. Front of the home
2. Both Sides elevations/Gables of the home (if applicable)
3. Rear/Back of the home
4. The ESB meter, this is to confirm the MPRN number and year of build
5. Gas Meter (if applicable).

Examples of common wide angled photos which are required for all installations.

Front

Side Elevations/Gables

Rear/Back

ESB Meter

Gas Meter (If Applicable)

STEP 3

Photo Quality

The photo quality is very important for your selected desktop audit to be successful. If poor quality, scanned images or non-geotagged photos are attached this will delay your desktop audit result. In these cases, you will be asked to provide additional information, and this will have a direct influence on timescales of the grant payment. To avoid such measures been imposed above, high quality photo and accuracy are key to speed up this process, the following steps below should always be adhered to;

- In focus
- Well lit
- In color
- No filters
- High resolution i.e. least 50KB and no more than 10MB
- File formats accepted, Jpeg and Exif
- The photo name must reference the checklist code of the measure installed
- Clear wide angled and close-up photos are required
- Photos must be uploaded as part of the completion documentation

STEP 4

GDPR

Data Protection Note on collecting Supporting Evidence

Documentary evidence has the potential to contain personal data. Under the General Data protection Regulation (GDPR), personal data is data that relates to or can identify an individual, either by itself or together with other available information. Examples of personal data include a person's name, contact details, bank details, and/or other personally identifying information (such as personal or family photographs, certificates, etc.) that may be used to identify an individual.
Special category personal data (sensitive personal data) is defined in the GDPR and can include any symbols or items that can identify the racial or ethnic origin, political opinions, religious or philosophical beliefs (e.g. religious symbols or statues) and any items that can identify a person's health or sexual orientation.
When collecting documentary evidence and/or uploading supporting evidence to the SEAI database, all parties must endeavour to only collect information necessary for the completion of the photo request and avoid the collection of any un-necessary personal data or sensitive information. Eliminating the collection of any un-necessary personal or sensitive materials and should ensure that they comply with their obligations under data protection regulations and ensure any information obtained for this process is processed, maintained, used, shared and stored in a secure manner, at all times.

Collecting Photographic Evidence

All parties should avoid the collection of personal or sensitive data when collecting photographic evidence of a dwelling. Take note before taking any internal or external photographs you must ensure there is no personal data within the frame, and if so, omit it from the photograph. If this is not possible, you should redact any personal data from images before uploading to SEAI database.

GDPR continued

The Storage and Use of Supporting Evidence

You are responsible for ensuring that supporting evidence is collected, processed, stored and used in a safe and secure manner, and is only used for the purposes for which it was collected, namely, for the completion of this desktop audit. SEAI SharePoint supports the storage of photography data in accordance with data protection. The responsible person must adopt additional secure storage systems for any assessment information which may be processed or stored outside of SEAI SharePoint as these provisions will reduce the risk of a data breach occurring.

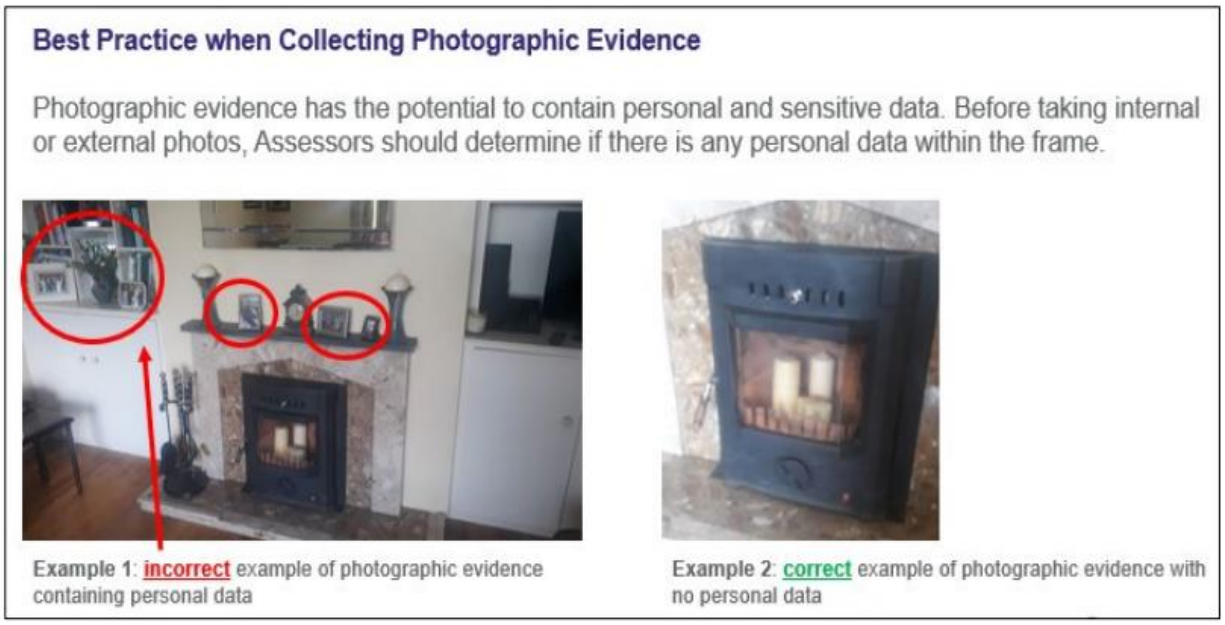


Figure 1: Best practice when collecting photographic evidence

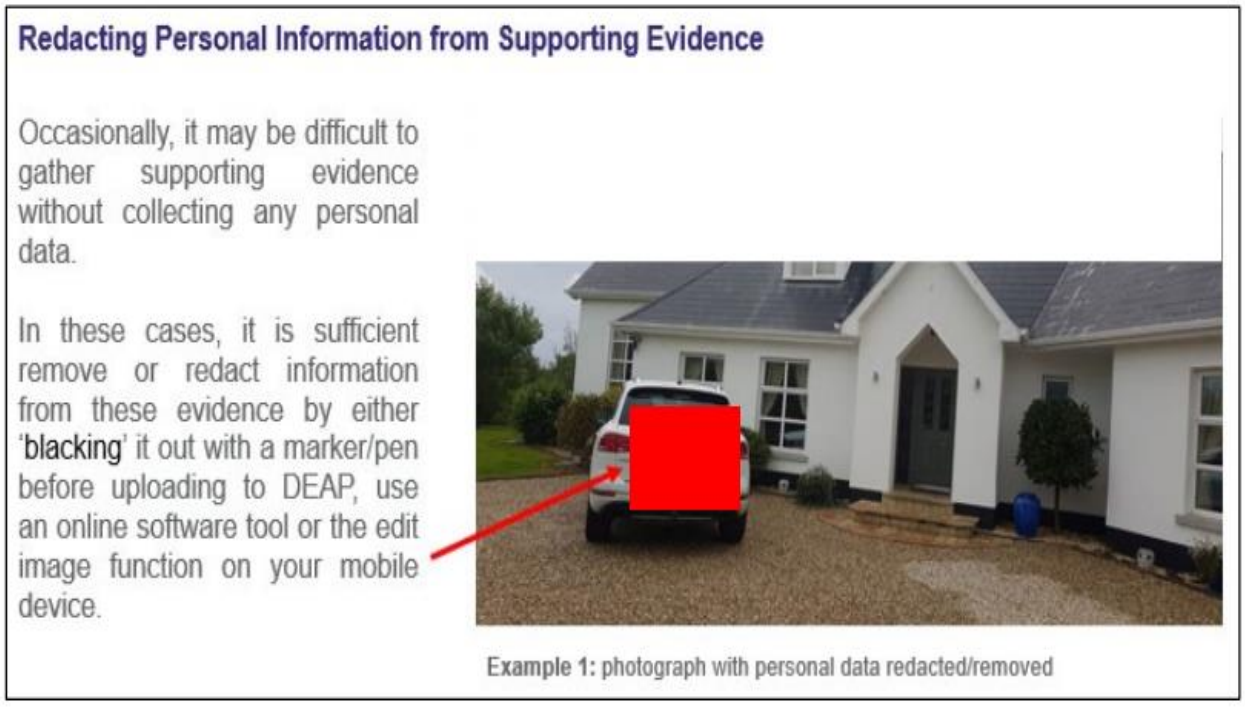


Figure 2: Redacting personal data from an image

External Insulation

The following is a guide to the suggested photos/ documents that contractors should provide for a desktop audit where External Insulation has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
Z2, L5	INSULATION AS PER SPECIFICATION	Not as per Scheme Standard and Evidence whole house solution has not been achieved.	SEV 1	Document, photo	All common photos are required for pre and post works.
P1, P2	GAS SUPPLY SERVICES (if applicable)	Evidence of gas meter box and Gas pipe covered by insulation, not in accordance with Bord Gais Job Aid Note.	SEV 1	Photo	Pre and post works photo of meter taken from the front of the meter and the side of the meter with the pipes visible from the ground to the meter.
ZA2,	GAS COMPLIANCE CERTIFICATE (if applicable)	No Gas Compliance certificate provided (if applicable).	SEV 1	Document	Document, of the relevant RGI cert for the gas boiler flue extension. Pre and Post work photos of all external elevations.
R1	FLUE INSTALLATION (if applicable)	Boiler flue compromised by works.	SEV 1	Photo	The Contractor must provide a photo of the boiler flue showing that it has not been compromised by the EWI. The Contractor will need to use a measuring tape to demonstrate that it complies with the relevant regulations.
HA2, HA3, HA4,	ESB SUPPLY CABLES	Evidence ESB cable buried under insulation, or not clipped, and meter box not extended which are all not in accordance with ESB Job Aid Note.	SEV 1	Photo	Photos of ESB cables, pre and post works and meter box close up and wide angled and external of meter pre and post works.
HD3	VENTILATION	No permanent vent visible or evidence chimney is not connected to an open flued appliance.	SEV 1	Photo	Photo of fireplace/appliance and/or corresponding vent.
HD1, HD2	VENTILATION	No evidence that any wall ventilation has been fitted.	SEV 1	Photo	All photos and documents above will be used to review these questions.
M1	ELECTRICAL WORK	Evidence not to standard.	SEV 1	Photo	

Z2 & L5
- INSULATION AS PER SPECIFICATION

Please provide evidence to demonstrate the following.

1. Pre works front elevation/front of the home. See Fig 1
2. Pre works side elevations/gables of the home if applicable. See Fig 2 & 3
3. Pre works rear/back of the home. See Fig 4

Fig 1

Fig2

Fig3

Fig 4

Z2 & L5 - INSULATION AS PER SPECIFICATION

Please provide evidence to demonstrate the following.

1. Post works Front elevation/front of the home. See Fig 5

2. Post works side elevation/gables of the home if applicable. See Fig 6

3. Post works rear/back of the home. See Fig 7

Fig 5

Fig 6

Fig 7

P1 & P2 - GAS SUPPLY SERVICES

Please provide evidence to demonstrate the following.

1. Gas Electrical meter pre works. See Fig 8

Fig 8

2. Gas Electrical meter post works where pipework has been extended. See Fig 9

Fig 9

ZA2 GAS COMPLIANCE CERTIFICATE & R1 FLUE INSTALLATION

Please provide evidence to demonstrate the following.

1. RGII Cert 3. See Fig 10
   a) Property details
   b) Relevant installer comments
   c) Flue gas analysis
   d) RGI name
   e) RGI number
   f) RGI signature

2. Wide angle photo of Flue terminal. See Fig 11 & 12

3. Flue terminal with measuring tape. See Fig 13

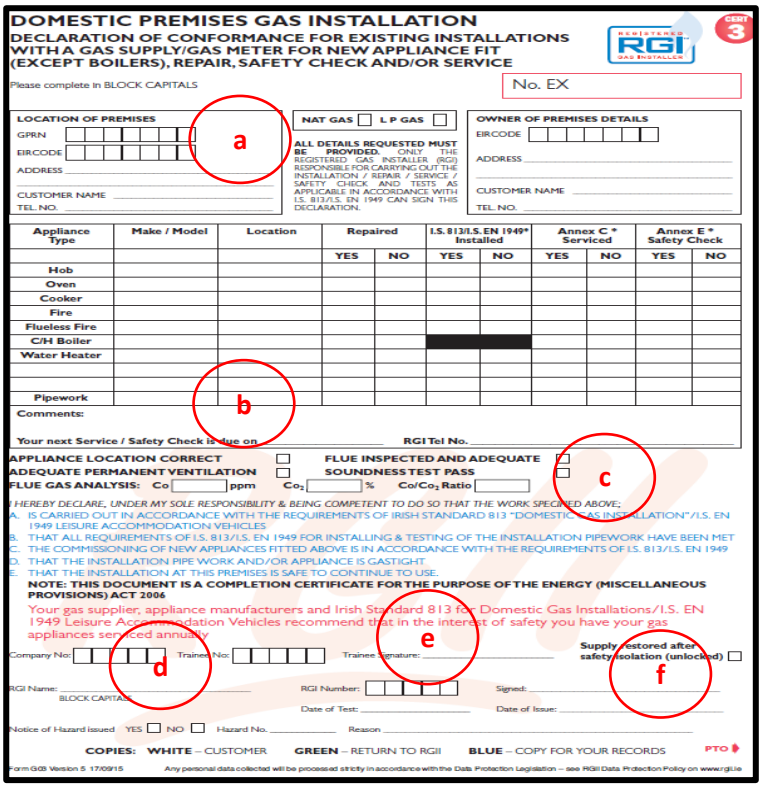


Fig 10

Fig 11

Fig 12

Fig 13

HA2, HA3 & HA4 - ESB SUPPLY CABLES

Please provide evidence to demonstrate the following.

1. Photos of ESB cables, meter box close up, external of meter pre and post works. See Fig 14 & 15

2. The ESB Meter Box cable pre works and post works. See Fig 16 & 17

3. Photo of the ESB Meter box (close up) post works. See Fig 18

Fig 14

Fig 15

Fig 16

Fig 17

Fig 18

HD3 - VENTILATION

Please provide evidence to demonstrate the following.

1. Chimney is visible from the external which suggest that there is an open flued appliance present in the property. See Fig 19

Fig 19

2. Photo of the flued appliance installed and ensure photo captures the vent installed or alternatively please provide evidence of the blocked off /decommissioned chimney. See Fig 20 vent installed.

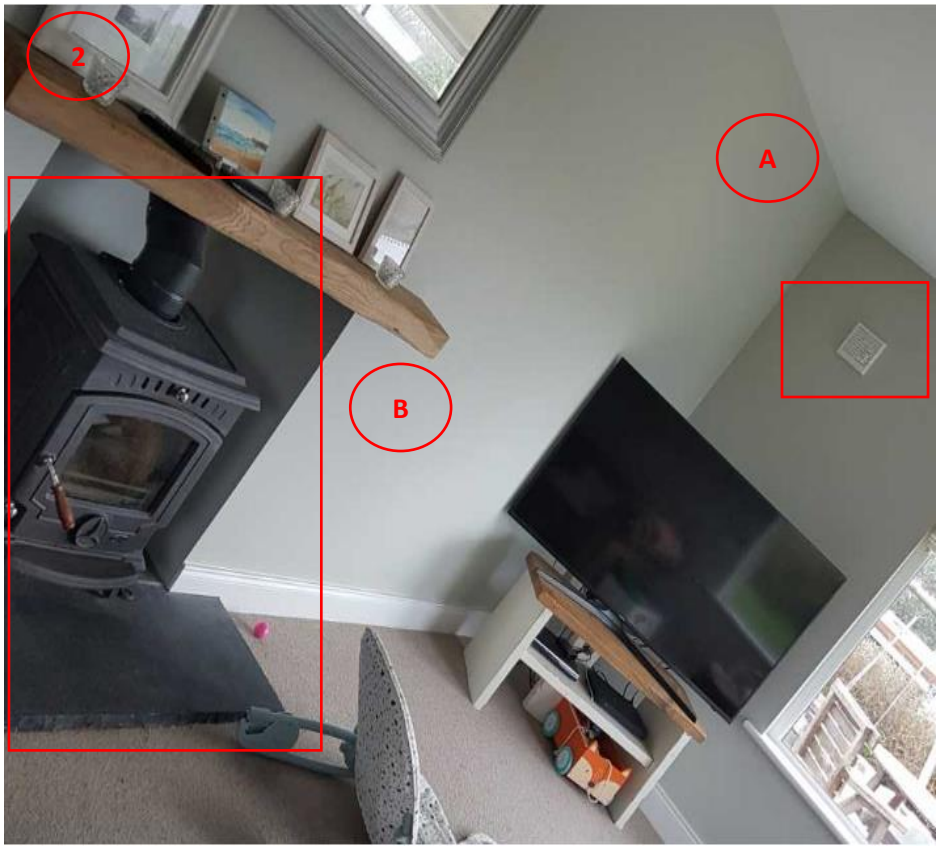


Fig 20

Cavity Wall Insulation

The following is a guide of the photos that contractors should provide where cavity wall insulation has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
HD1, HD2	VENTILATION	Evidence a whole house solution has not been achieved, Evidence that there is an issue with the wall ventilation on site	SEV 1	Photo	Photo of all elevations pre and post works.
HD3	VENTILATION	No permeant vent visible or evidence chimney is not connected to an open flued appliance	SEV 1	Photo	Photo of fireplace/appliance and/or corresponding vent.
N1, N2	BEAD SPILLAGE	ESB meter box	SEV 1	Photo	Photo of ESB and Gas and meter boxes with door open or photo of internal meter.
N3	BEAD SPILLAGE	Boiler flue compromised by works	SEV 1	Photo	Photo of flue terminal or boiler.
O1	ELECTRICAL	Works not to standard	SEV 1	Photo	All photos and documents above will be used to review these questions.
Z2	INSULATION AS PER SPECIFICATION	Not as per scheme standard	SEV 1	Document, photo	
B5	WALL AREA TO BE FILLED	Evidence a whole house solution has not been achieved	SEV 1	Photo	

HD1, HD2 & HD3 - VENTILATION

Please provide evidence to demonstrate the following.

1. A chimney is visible from the elevation photos which suggest that there is an open flued appliance present in the property. See Fig 1

2. Photo of the flued appliance installed and ensure photo captures the vent installed or alternatively please provide evidence of the blocked off /decommissioned chimney. See Fig 2

Fig1

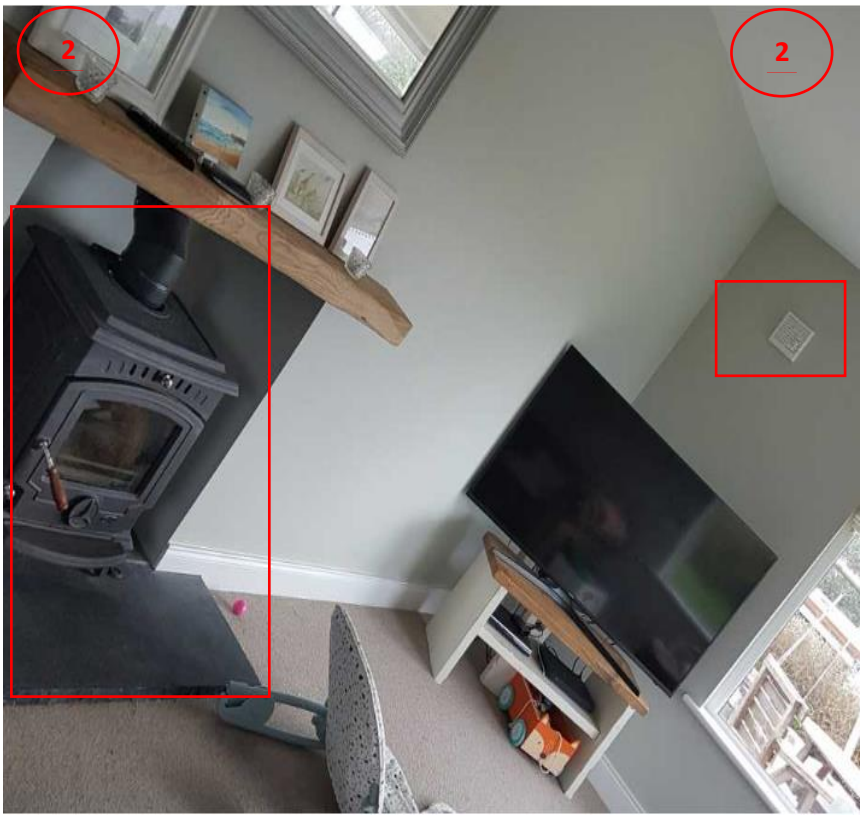


Fig2

HD1, HD2 & HD3 - VENTILATION

Please provide evidence to demonstrate the following.

1. Front elevation during works, with the drill holes visible. See Fig 3

2. Side elevation during works. When there is a room in the roof the drill holes are seen following the pitch of the roof. See Fig 4

3. Unfilled drill holes during works on rear elevation. See Fig 5

Fig 3

Fig 4

Fig 5

HD1, HD2 & HD3 - VENTILATION

Please provide evidence to demonstrate the following.

1. Front elevation post works, holes filled in and matching wall finish. See Fig 6

2. Side elevation during works, holes filled in and matching wall finish. See Fig 7

3. Rear elevation post works, holes filled in and matching wall finish. See Fig 8

Fig 6

Fig 7

Fig 8

N1 - BEAD SPILLAGE

Key points to demonstrate in these photos:

1. Photo of the external ESB meter box with the door open (where applicable) demonstrating that the meter box has not been filled with bead. See Fig 9

Fig 9

2. Photo of the ESB meter internally (where applicable) with the year of the meter clearly visible. See Fig 10

Fig 10

N2 - BEAD SPILLAGE

Key points to demonstrate in these photos:

1. Photo of the gas meter box with door open where applicable. See Fig 11

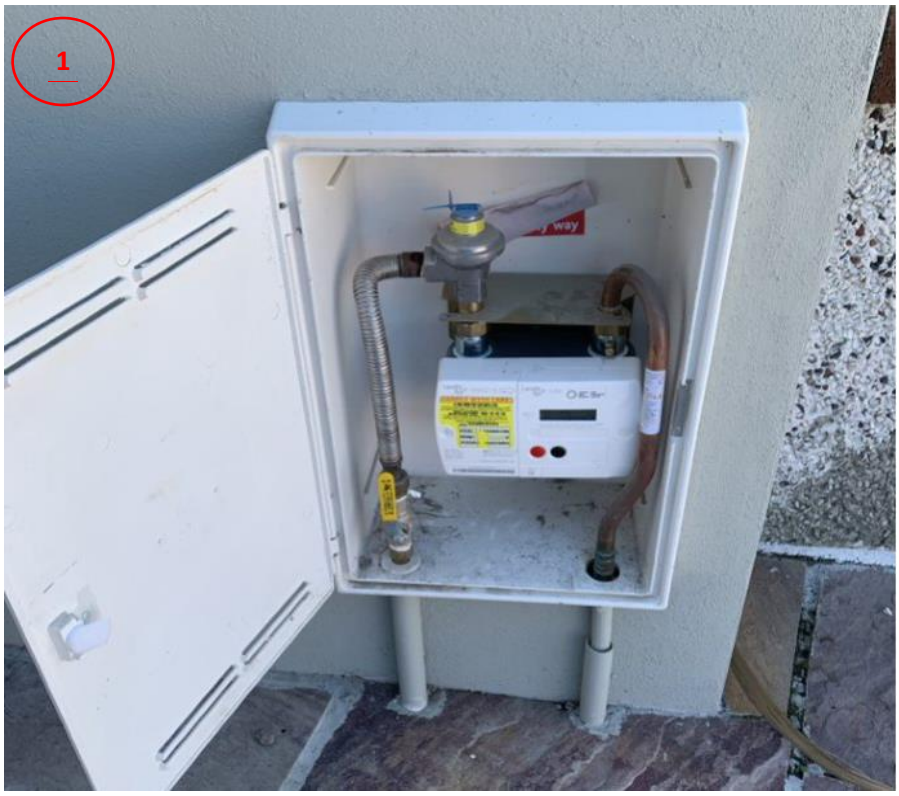


Fig 11

2. Photo of internal gas meter where applicable. See Fig 12

Fig 12

N3 - BEAD SPILLAGE

Key points to demonstrate in these photos:

1. Photo of oil or gas boiler flue where applicable. See Fig 13

Fig 13

2. Photo of boiler flue terminal where applicable. See Fig 14

Fig 14

Internal Wall Insulation/Drylining

The following is a guide of the photos that contractors should provide where Internal wall insulation/drylining has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
E5	ELECTRICAL FIXTURES	Evidence electrical cabling not in conduit or trunking, or electrical items installed not to standard.	SEV 1	Photo	Pre, during and post work photos of each section of internal wall insulation/dry lined walls.
HD1, HD2, HD3	VENTILATION	No evidence that any wall ventilation has been installed or evidence the chimney is not connected to an open flued appliance.	SEV 1	Photo	Photos of fireplace/appliance and/or corresponding vent and ensure photos of all elevations pre and post works.
L5,	INSULATION AREA INSTALLED	Evidence whole house solution not installed.	SEV 1	Photo	Photos of all rooms that have had insulation installed.
Z2, F1	INSULATION NOT AS PER SPECIFICATION AND VAPOUR BARRIER	Not as per Scheme Standard no vapour barrier observed.	SEV 1	Documents	Copy of the Supplier Guarantee and invoices. Photo of insulation with a measuring tape to demonstrate the thickness of the insulation. Ensure Confirmation that the product has a vapour barrier this will be evident on the supplier guarantee and invoice.
M1	GAS SUPPLY SERVICES (If applicable)	If applicable evidence Gas pipe covered by insulation.	SEV 1	Photo	Photo of gas meter taken from the front to establish what type of gas meter is in the house if applicable.
EW1	ELECTRICAL WORK	Evidence not to standard	SEV 1	Photo	All photos and documents above will be used to review these questions.

E5 – ELECTICAL FIXTURES

Please provide evidence to demonstrate the following.

1. Photo of electrical works in conduit. See Fig 1, 2 & 3

Fig 1

Fig 2

Fig 3

HD1 & HD2 - VENTILATION

Please provide evidence to demonstrate the following.

1. Photos of front elevation pre works. See Fig 4

2. Photos of front elevation post works with the new vent installed. See Fig 5

Fig 4

Fig 5

HD3 - VENTILATION

Please provide evidence to demonstrate the following.

1. A chimney is visible from the elevation photos which suggest that there is an open flued appliance present in the property. See fig 6

2. Photo of the flued appliance installed and ensure photo captures the vent installed or alternatively please provide evidence of the blocked off /decommissioned chimney. See Fig 2

Fig 6

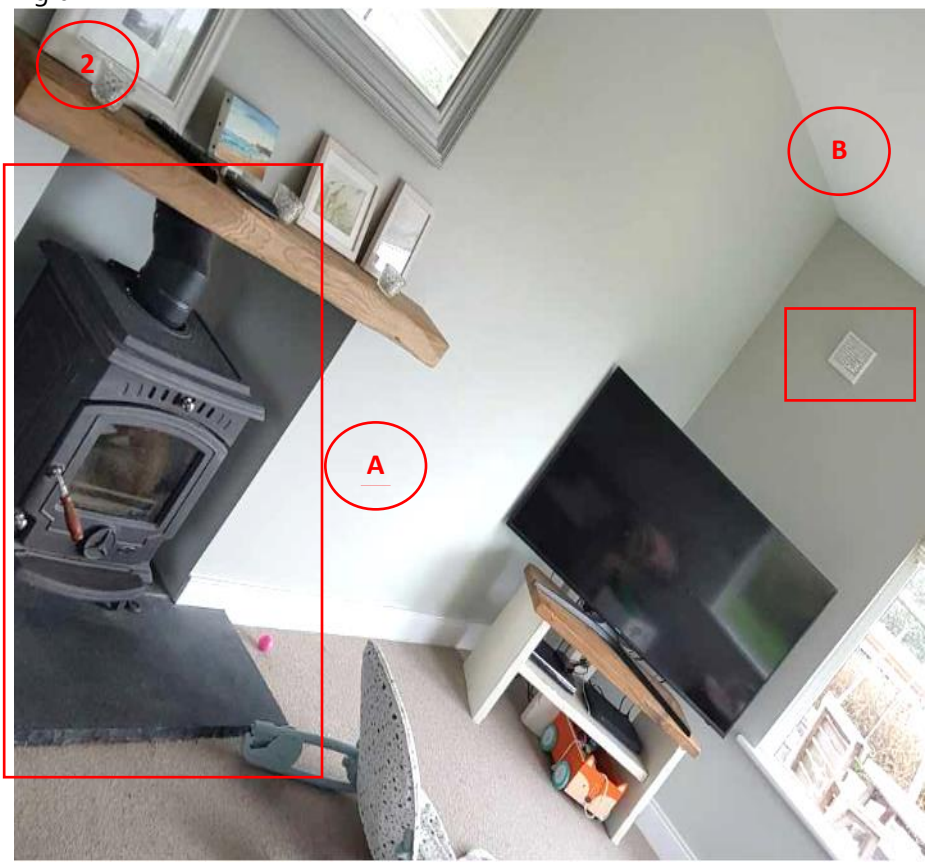


Fig 7

L5 - INSULATION AREA INSTALLED

Please provide evidence to demonstrate the following.

1. During work photos of dry lining insulation. See Fig 8

Fig 8

2. Post work photos of dry lining insulation. See Fig 9

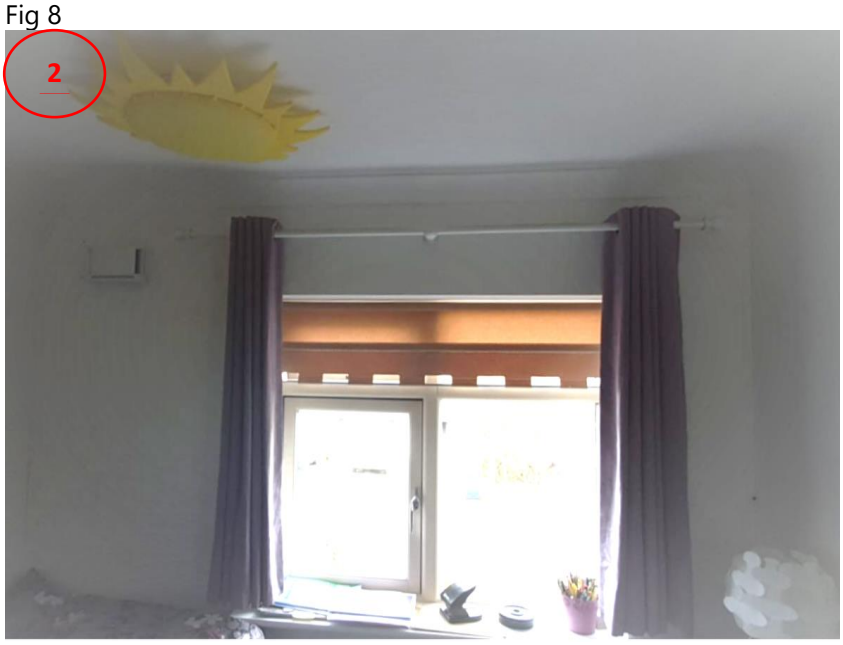


Fig 9

Z2 - INSULATION AS PER SPECIFICATION

Please provide evidence to demonstrate the following.

1. PDF of the Supplier Guarantee and invoices. See Fig 10 & 11

2. Photo of insulation with a measuring tape to demonstrate the thickness of the insulation. See Fig 12

Fig 10

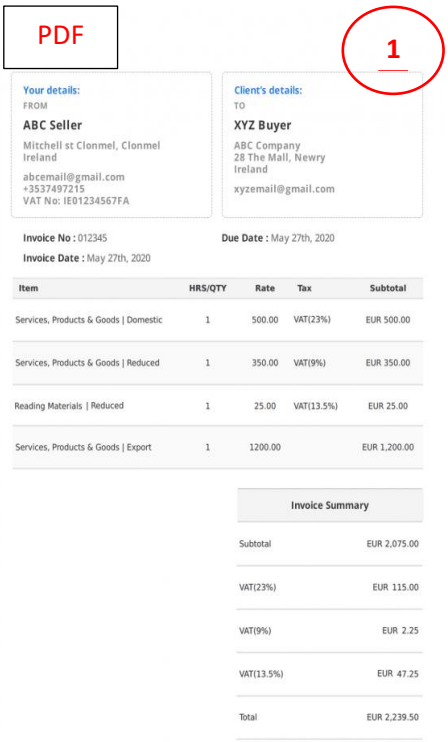


Fig 11

Fig 12

M1 - GAS SUPPLY SERVICES

Please provide evidence to demonstrate the following.

1. Photo of gas meter taken from the front to establish what type of gas meter is in the house (if applicable). See Fig 13

Fig 13

2. Photo of the gas meter internally (if applicable). See Fig 14

Fig 14

Attic insulation

The following is a guide of the photos that contractors should provide where roof insulation has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
B5	INSULATION AREA INSTALLED	Evidence a whole house solution has not been achieved	SEV 1	Photo	Photos taken internally of the roof spaces, 4 well-lit photos per attic, taken from centre in each direction (these photos must show a consistency of depth across all the attic space). Photo of the external elevations of the home with front, side(s) and rear where applicable.
C3, C4	INSULATION DEPTH INSTALLED PER SPECIFICATION	Less than 100mm and101mm to 299mm	SEV 1	Document, Photo	Photo taken from hatch showing depth of attic insulation against measuring tape (1 photo per attic if there is more than 1 roof space) Overall photo of attic(s). Ensure Photo or PDF of insulation guarantee with depth and area details is clearly visible.
HA2, L1	WATER TANK AND PIPE INSULATION	No insulation	SEV 1	Photo	Photo capturing all pipework and water tanks above the insulation. In this ensure any storage tank(s), any appliances e.g. gas boiler/ Hot water cylinder located in the attic are also captured if applicable.
J1	WALKBOARDS	Not fitted (but required)	SEV 1	Photo	Photo showing a walk board run from the hatch to the serviceable items e.g. tanks, boiler in the attic space.
Z1	INSULATION AS PER SPECIFICATION	No NSAI Certificate or equivalent for spray foam insulation	SEV 1	Document, photo	The NSAI certificate for the materials used.
N8	VENTILATION	Evidence if an issue with the roof ventilation on site	SEV 1	Photo	All photos and documents above will be used to review these questions.
O5	ELECTRICAL	Evidence Work not to standard	SEV 1	Photo	
Z2	INSULATION AS PER SPECIFICATION	Not as per scheme standard	SEV 1	Photo	

B5 - INSULATION AREA INSTALLED

Please provide evidence to demonstrate the following.

1. Common Photos are required of the external elevations of the home. Ensure front, side(s) and rear where applicable to determine the number of attics at the property.

2. Photos taken internally of the roof spaces, 4 well-lit photos per attic, taken from centre in each direction (these photos must show a consistency of depth across all the attic space). See Fig 1, 2, 3 & 4

Fig 1

Fig 2

Fig 3

Fig 4

C3 -C4 INSULATION DEPTH AND INSTALLED AS SPEC

Please provide evidence to demonstrate the following.

1. Photo taken from hatch clearly showing the depth of attic insulation against a measuring tape. Please note 1 photo per attic if there is more than 1 attic space. See fig 5

2. Photo or PDF document of insulation guarantee with depth and area details. The details on this document must be clearly visible in the photo or pdf. See fig 6

3. Overall photo of attic(s). See fig 7

Fig 5

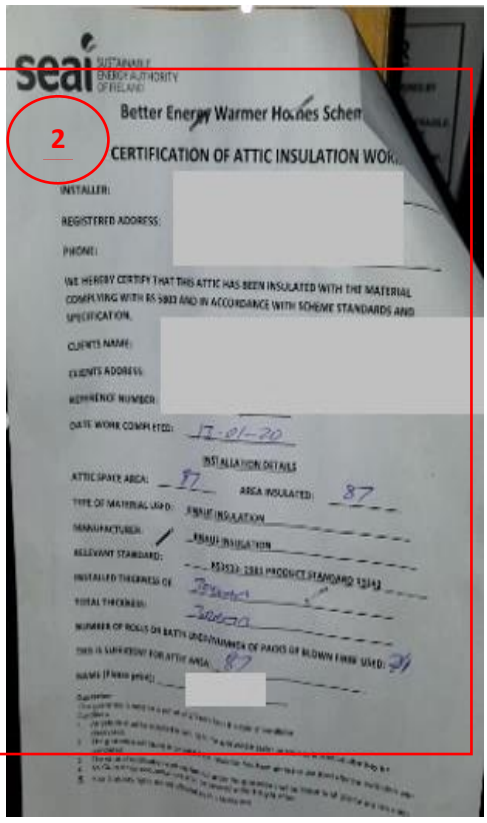


Fig 6

Fig 7

HA2 -LA1 PIPE AND WATER STORAGE TANK INSULATION

Please provide evidence to demonstrate the following.

1. Photo capturing all pipework above the insulation in the area of the storage tank(s). See fig 8
2. Any appliances located in the attic if applicable e.g. gas boiler/ Hot water cylinder. See fig 9
3. The tank lid, the insulation and the tape can be seen in these images. See fig 10
4. The insulation on the underside of tank can be seen on the elevated tank and is visible in the photo. See fig 11
5. The insulation quilt "skirted" up around underside of tank can be seen in the photo. See fig 12

Fig 1

Fig 2

Fig 10

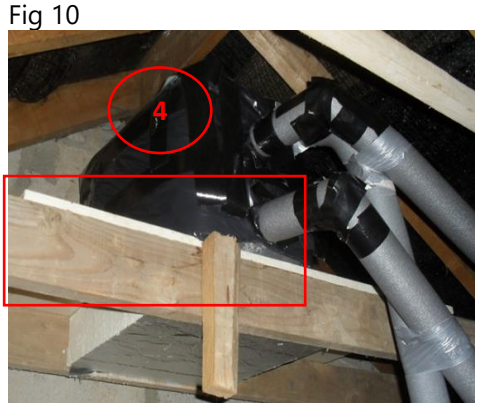


Fig 11

Fig 12

J1 - WALKBOARDS

Please provide evidence to demonstrate the following.

1. Photo of walkboard running to serviceable item e.g. water tank. See Fig 13

Fig 13

2. Photo of the walkboard taken from the point of entry to the attic. See fig 14

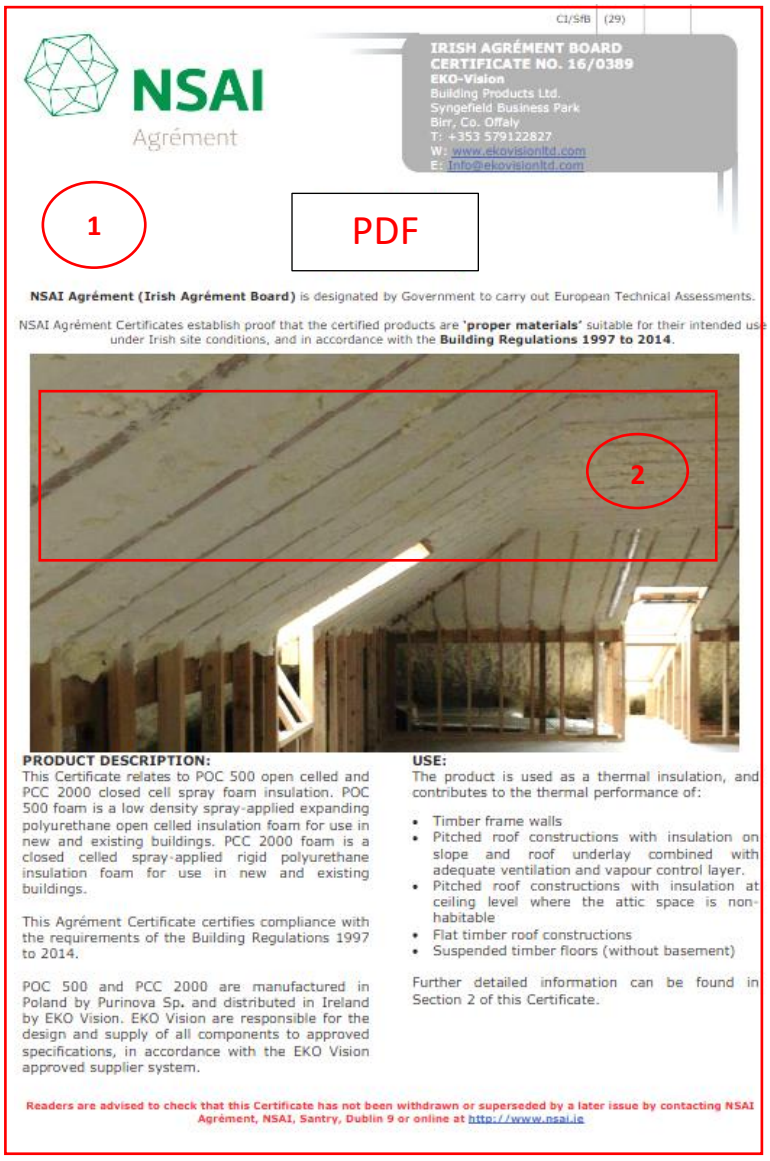
Fig14

Z1 - SPRAY FOAM INSULATIONAS PER SPECIFICATION

Please provide evidence to demonstrate the following.

1. The NSAI certificate for the materials used. See Fig 15

2. Photographic evidence of spray foam insulation installation. See Fig 16


C1/SfB (29)

NSAI Agrément

IRISH AGRÉMENT BOARD
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Syngefield Business Park
Birr, Co. Offaly
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1

PDF

NSAI Agrément (Irish Agrément Board) is designated by Government to carry out European Technical Assessments.

NSAI Agrément Certificates establish proof that the certified products are **'proper materials'** suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2014**.

2

PRODUCT DESCRIPTION:
This Certificate relates to POC 500 open celled and PCC 2000 closed cell spray foam insulation. POC 500 foam is a low density spray-applied expanding polyurethane open celled insulation foam for use in new and existing buildings. PCC 2000 foam is a closed celled spray-applied rigid polyurethane insulation foam for use in new and existing buildings.

This Agrément Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2014.

POC 500 and PCC 2000 are manufactured in Poland by Purinova Sp. and distributed in Ireland by EKO Vision. EKO Vision are responsible for the design and supply of all components to approved specifications, in accordance with the EKO Vision approved supplier system.

USE:
The product is used as a thermal insulation, and contributes to the thermal performance of:

- Timber frame walls
- Pitched roof constructions with insulation on slope and roof underlay combined with adequate ventilation and vapour control layer.
- Pitched roof constructions with insulation at ceiling level where the attic space is non-habitable
- Flat timber roof constructions
- Suspended timber floors (without basement)

Further detailed information can be found in Section 2 of this Certificate.

Readers are advised to check that this Certificate has not been withdrawn or superseded by a later issue by contacting NSAI Agrément, NSAI, Santry, Dublin 9 or online at http://www.nsai.ie

Fig 15

Fig 16

Heating Controls

The following is a guide of the photos that contractors should provide where heating controls has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
V11, V7	ELECTRICAL WORK	Evidence Earth Bonding isn't present on gas and water pipework. ETCI rules must be present at boiler, gas meter and hot press.	SEV 1	Photo	Photos of the following, boiler, cylinder, all surrounding pipework and heating controls fittings. Where pipework exits the area e.g. pipework leaving the hot press through the timber floor in copper. If applicable photo of the gas meter and gas pipe underneath the gas boiler.
A3	HEATING STANDARD	Evidence no pressure relief valve, no facility for expansion on a heating system (proposed change)	SEV1	Document, photo	A photo of the expansion vessel, F and E tank & safety valve OR a photo of the system boiler label and data sheet proving that these items are included in the boiler package.
V6	ELECTRICAL WORK	No fused spur switch visible/ Evidence poorly located (addition of evidence, proposed change)	SEV 1	Photo	Photo of the fused spur switch.
N2, L1	CYLINDER STAT/ AUTO BYPASS	Not fitted	SEV 1	Photo	Photo of the hot water cylinder with stat visible. Photo of auto by-pass valve or boiler data sheet where applicable.
R4	7 DAY (2/3 CHANNEL) PROGRAMMER	Not fitted	SEV 1	Photo	Photo of the programmer that was fitted.
T5	ROOM STAT	Not fitted	SEV 1	Photo	Photo of room thermostat(s).
U1	IMMERSION HEATER TIMER	Not fitted but required	SEV 1	Photo	Photo of the immersion timer, cylinder and immersion switch.
ZB3, V13	CONTROLS NOT AS PER SPECIFICATION	Evidence electrical works not as per Scheme Standard	SEV 1	Photo	All photos and documents above will be used to review these questions.
M1	ELECTRICAL WORK	Evidence not to standard	SEV 1	Photo	
V12	ELECTRICAL WORK	Homeowner not issued with 'Electrical Safety notice to homeowner' if required	SEV 1	Document	

V11 & V7 -V6 ELECTRICAL WORK

Key points to demonstrate in these photos:

1. Photo of boiler and surrounding pipework. See fig 1 & 2
2. Photo of the gas meter and gas pipe underneath the gas meter. See fig 3 & 4
3. Photo of the spur switch. See fig 5
4. Photo of the SEAI electrical safety notice where applicable. See fig 6

Fig 1

Fig 2

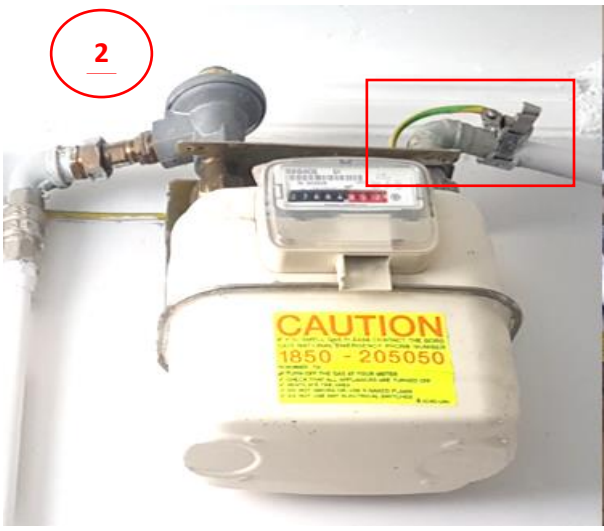


Fig 3

Fig 4

Fig 5

Fig 6

A3 - HEATING STANDARD

Please provide evidence to demonstrate the following.

1. Photo of the expansion vessel used for the heating system. See Fig 7
2. Photo of the feed and expansion tank used for the heating system. See Fig 8
3. Photo of the pressure relief valve used for the heating system, i.e. the safety valve. See Fig 9
4. Photo of the system boiler data label, demonstrating that the expansion and pressure relief are integral to the boiler. See Fig 10

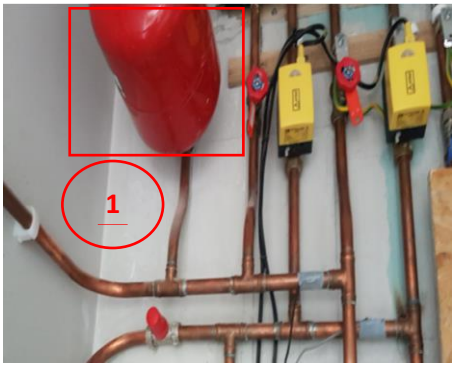


Fig 7

Fig 8

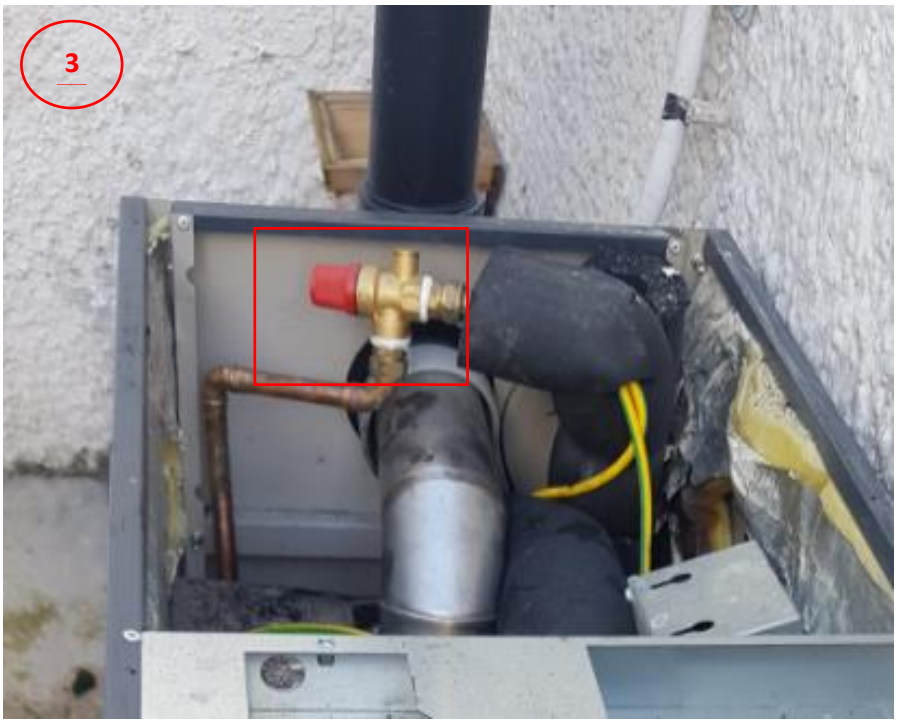


Fig 9

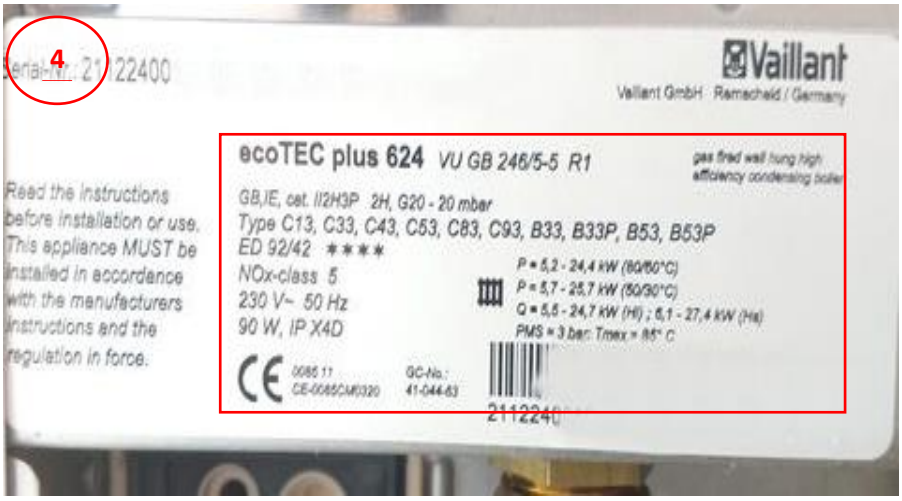


Fig 10

L1 - AUTO BYPASS

Please provide evidence to demonstrate the following.

1. Photo of auto by-pass valve fitted to the system. See Fig 11

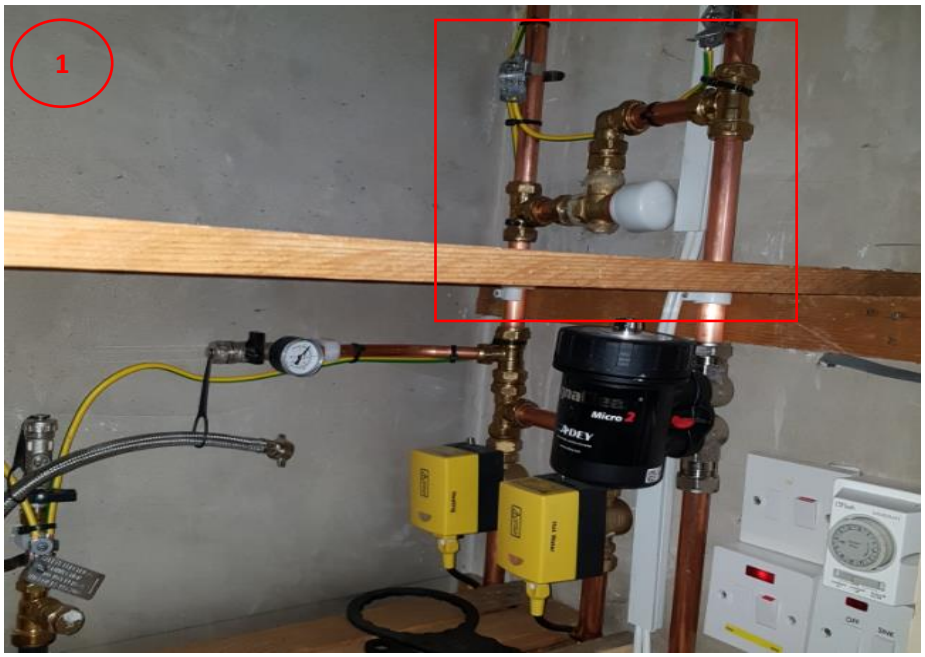


Fig 11

2. Photo of boiler data label where applicable. See Fig 12

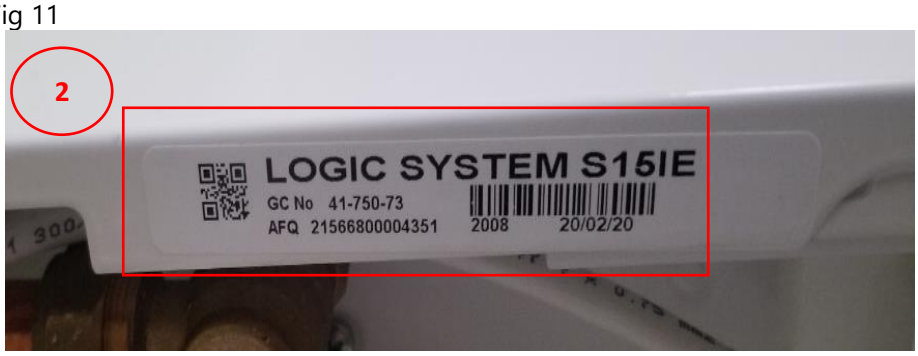
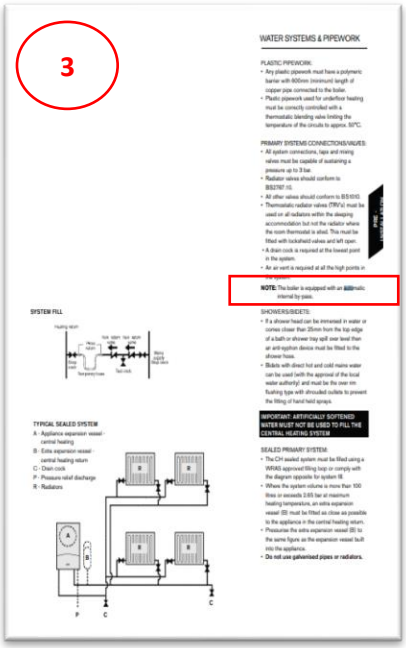


Fig 12

3. Boiler manufacturers manual, highlighting an internal auto by-pass valve. See Fig 13



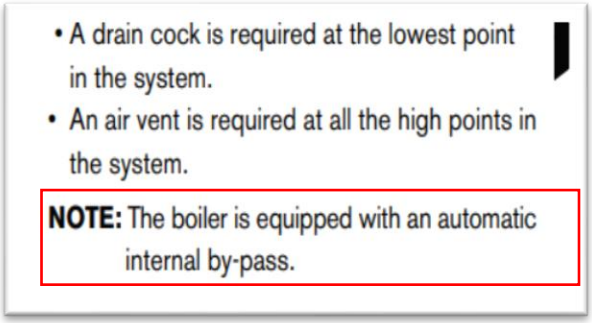


Fig 13

N2 - CYLINDER STAT

Please provide evidence to demonstrate the following.

1. A photo showing the cylinder stat in the correct location. See fig 14 & 15

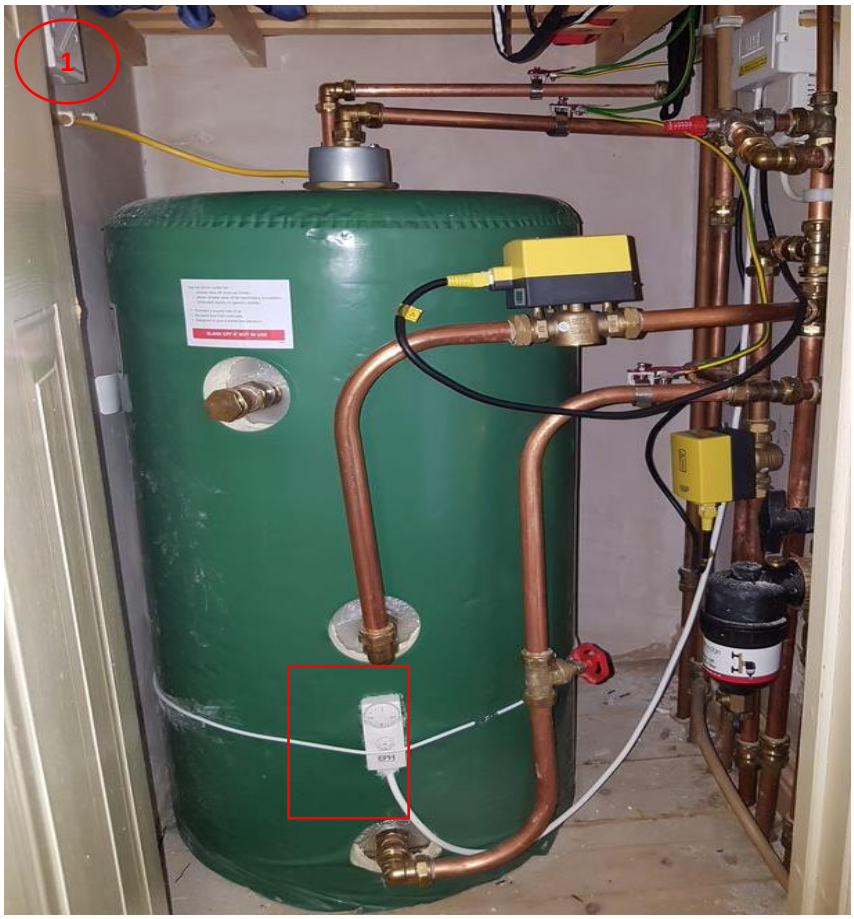


Fig 14

Fig 15

R4 -7 DAY (2/3 CHANNEL) PROGRAMMER

Please provide evidence to demonstrate the following.

1. Photo of 7-day 2 channel programmer with remote access. See Fig 16

2. Photo of 7-day 3 channel programmer. See Fig 17

3. Photo of 7-day 2 channel programmer. See Fig 18

Fig 16

Fig 17

Fig 18

T5 -ROOM STAT

Please provide evidence to demonstrate the following.

1. Photo of room thermostat(s) and radiator with a clear view of the lock shield valves. See Fig 19 & 20

Fig 19

Fig 20

U1 -IMMERSION HEATER TIMER

Please provide evidence to demonstrate the following.

1. Photo of the cylinder, immersion timer and immersion switch. See Fig 21

2. Photo of the immersion timer and immersion switch. See Fig 22

3. Typical immersion timer types. See Fig 23

Fig 21

Fig 22

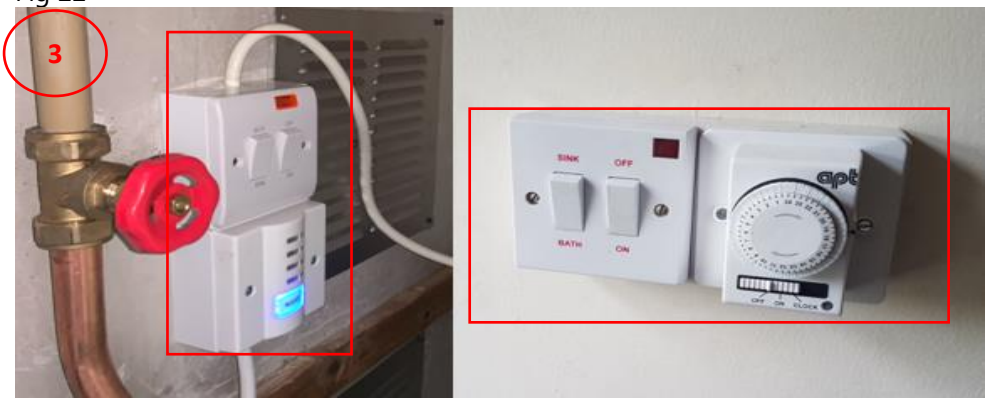


Fig 23

Gas Boiler

The following is a guide of the photos that contractors should provide where a gas boiler and heating controls have been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
A3, G9	HEATING STANDARD	Evidence no pressure relief valve, or facility for expansion on a heating system	SEV 1	Document, photo	A photo of the expansion vessel, Feed and Expansion tank & safety valve or a photo of the system boiler label and data sheet proving that these items are included in the boiler package. Photo of the safety valve and pipework terminal.
C1,D1	BOILER CONDITION/ LOCATION	Evidence of Boiler damaged and boiler Installed in an area where it's not to regulation	SEV 1	Photo	A wide-angle photo of the boiler fitted.
T5	ROOM STAT	Not fitted	SEV 1	Photo	Wide angel photo of room thermostat(s) capturing their location(s).
U1	IMMERSION HEATER TIMER	Not fitted but required	SEV 1	Photo	Photo of the immersion timer, cylinder and immersion switch
ZA2, ZA1	GAS COMPLIANCE CERTIFICATE	No Gas Compliance certificate provided or its incomplete	SEV 1	Document	PDF/Photo of the relevant RGII certificate.
V7, V11	ELECTRICAL WORK	Evidence earth Bonding present on gas or water pipework. Not to ETCI rules.	SEV 1	Photo	Photos of the following, boiler, cylinder, all surrounding pipework and heating controls fittings. Where pipework exits the area e.g. pipework leaving the hot press through the timber floor in copper. If applicable photo of the gas meter and gas pipe underneath the gas boiler.
V6	ELECTRICAL WORK	No fused spur switch visible/ Evidence poorly located.	SEV 1	Photo	Photo of the spur switch.
HA1	FLUE INSTALLATION	Evidence Not to regulation	SEV 1	Photo	Flue in its entirety including Flue terminal close up and distant Boiler.
HB1	CARBON MONOXIDE ALARM	Not installed when required	SEV 1	Photo	Photo of the CO alarm including location.
N2, L1	CYLINDER STAT AND AUTO BYPASS VALVE	Not fitted	SEV 1	Photo	Photo of the hot water cylinder with stat visible. Photo of auto by-pass valve or boiler data sheet where applicable.

R4	7 DAY (2/3 CHANNEL) PROGRAMMER	Not fitted	SEV 1	Photo	Photo of the programmer that was fitted.
HC6	VENTILATION	Evidence of inadequate ventilation to boiler	SEV 1	Document, photo	Photo of boiler Boiler manual, Boiler in Situ
WHL5	DECOMMISIONED HEATING SYSTEM	Evidence existing system has not been decommissioned to scheme standard.	SEV 1	Photo	All photos and documents above will be used to review these questions
ZB3	GAS BOILER & CONTROLS AS PER SPECIFICATION	Evidence not as per Scheme Standard	SEV 1	Photo	
V13	ELECTRICAL WORK	Evidence Not to standard	SEV 1	Photo	
V12	ELECTRICAL WORK	Homeowner not issued with 'Electrical Safety notice to homeowner' if required	SEV 1	Document	
H1,H2	GAS SUPPLY	Evidence in poor condition and evidence not adequately supported	SEV 1	Photo	

A3 & G9- HEATING STANDARD

Please provide evidence to demonstrate the following.

1. Photo of the expansion vessel used for the heating system. See Fig 1
2. Photo of the feed and expansion tank used for the heating system. See Fig 2
3. Photo of the pressure relief valve used for the heating system, i.e. the safety valve. See Fig 3
4. Photo of the system boiler data label, demonstrating that the expansion and pressure relief are integral to the boiler. See Fig 4

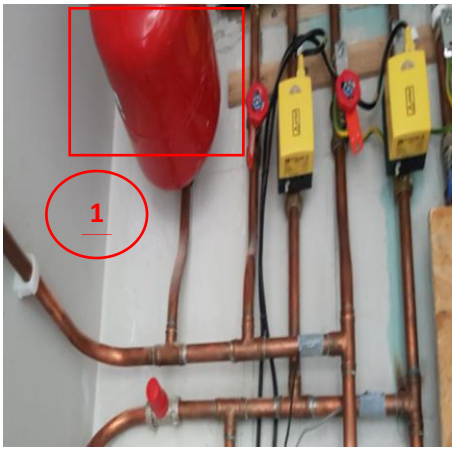


Fig 3

Fig 4

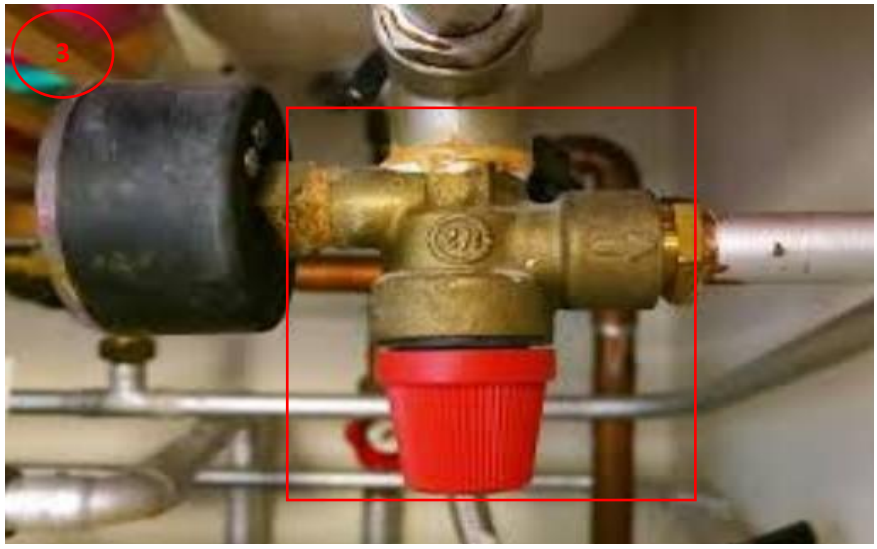


Fig 5

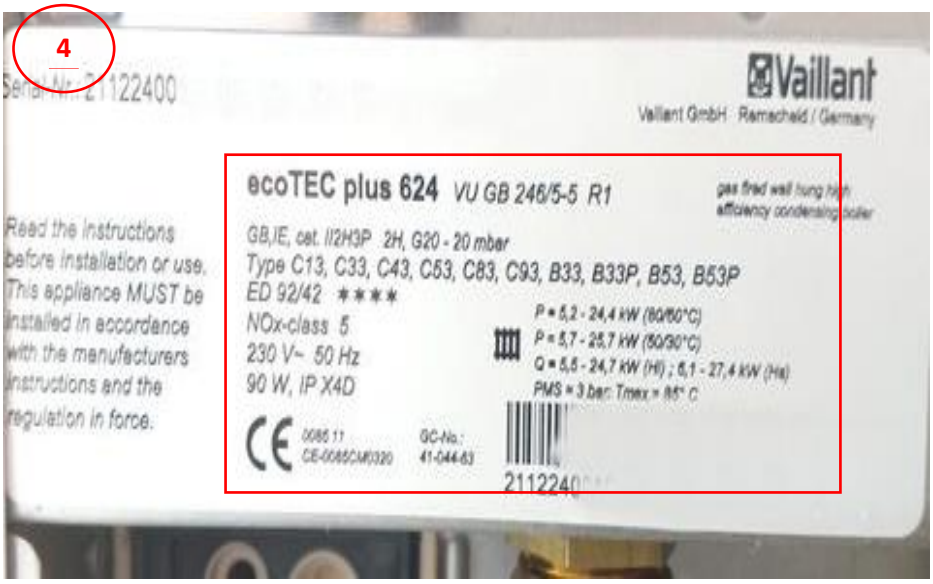


Fig 4

C1, D1 - BOILER CONDITION

Please provide evidence to demonstrate the following.

1. A wide-angle photo of the boiler to demonstrate the location of the boiler fitted. See Fig 5 & 6

Fig 5

Fig 6

T5 -ROOM STAT

Please provide evidence to demonstrate the following.

1. Photo of room thermostat(s) and radiator with a clear view of the lock shield valves. See Fig 7 & 8

Fig 7

Fig 8

U1 -IMMERSION HEATER TIMER

Please provide evidence to demonstrate the following.

4. Photo of the cylinder, immersion timer and immersion switch. See Fig 9

5. Photo of the immersion timer and immersion switch. See Fig 10

6. Typical immersion timer types. See Fig 11

Fig 9

Fig 10

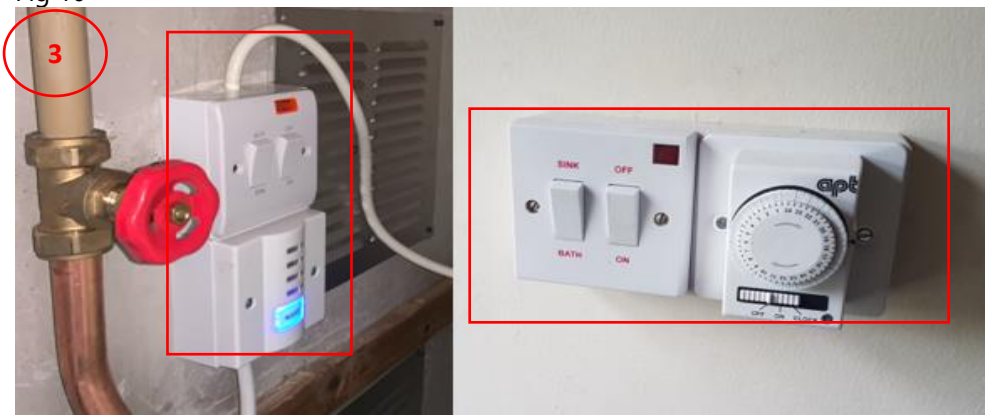


Fig 11

ZA1 & ZA2 -GAS COMPLIANCE CERTIFICATE

Please provide evidence to demonstrate the following.

1. PDF/Photo of the relevant RGII Cert No. 1. See Fig 12

2. PDF/Photo of the relevant RGII Cert No. 2. See Fig 13

DOMESTIC PREMISES GAS INSTALLATION
DECLARATION OF CONFORMANCE FOR NEW INSTALLATIONS OR EXISTING INSTALLATIONS REQUIRING A SUPPLY OF GAS AND/OR NEW METER FIT

PART I — No. SN 1234567

PART II — COMMISSIONING DECLARATION

HOUSEHOLDER IMPORTANT SAFETY INFORMATION PLEASE READ CAREFULLY

SAMPLE

Fig 9

DOMESTIC PREMISES GAS INSTALLATION
DECLARATION OF CONFORMANCE FOR BOILER REPLACEMENT WHERE A METER/GAS IS ALREADY SUPPLIED

HOUSEHOLDER IMPORTANT SAFETY INFORMATION PLEASE READ CAREFULLY

SAMPLE

Fig 13

V6- V7-V11 & V12 - ELECTRICAL WORK

Please provide evidence to demonstrate the following.

1. Photo of the fused spur switch. See Fig 14
2. Photo of boiler and surrounding pipework. See Fig 15
3. Photo of cylinder, surrounding pipework and where pipework exits the area e.g. pipework leaving the hot press through the timber floor in copper. See Fig 16
4. Photo of the gas meter and gas pipe underneath the gas boiler. See Fig 17
5. Safety notice if applicable. See Fig 18

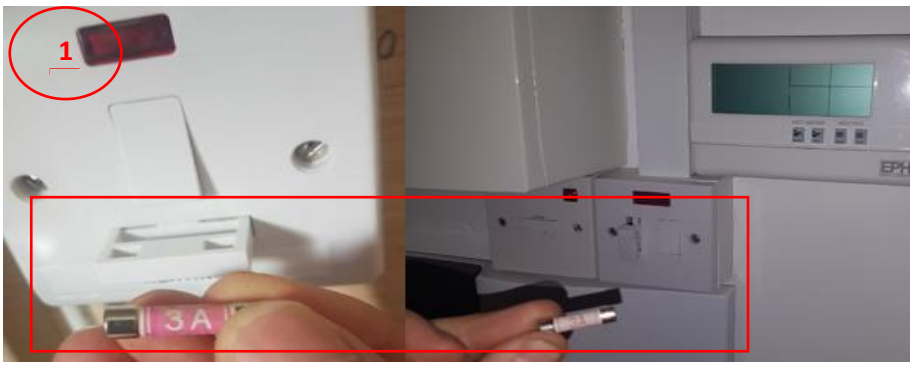


Fig 14

Fig 15

Fig 16

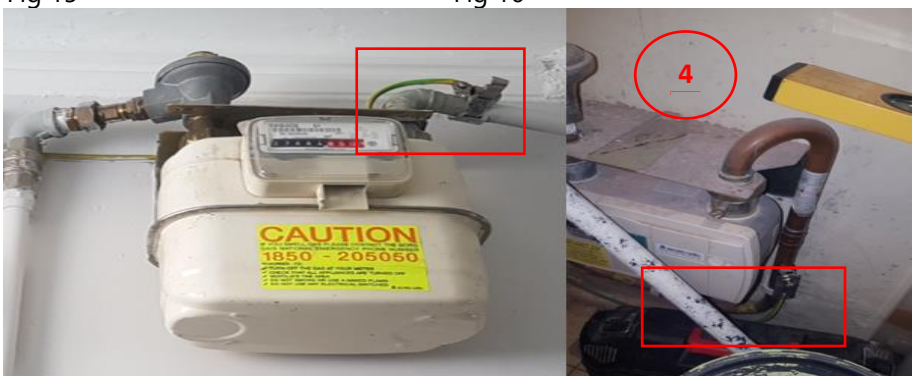


Fig 17

Fig 18

HA1 -FLUE INSTALLATION

Please provide evidence to demonstrate the following.

1. Photo of the Flue terminal close up. See Fig 19

2. Photo of the Flue sections internally. See Fig 20

3. Wide angle Photo of the Flue terminal externally. See Fig 21

Fig 19

Fig 20

Fig 21

HB1 -CARBON MONOXIDE ALARM

Please provide evidence to demonstrate the following.

1. Photo of the carbon monoxide alarm including location. See fig 22

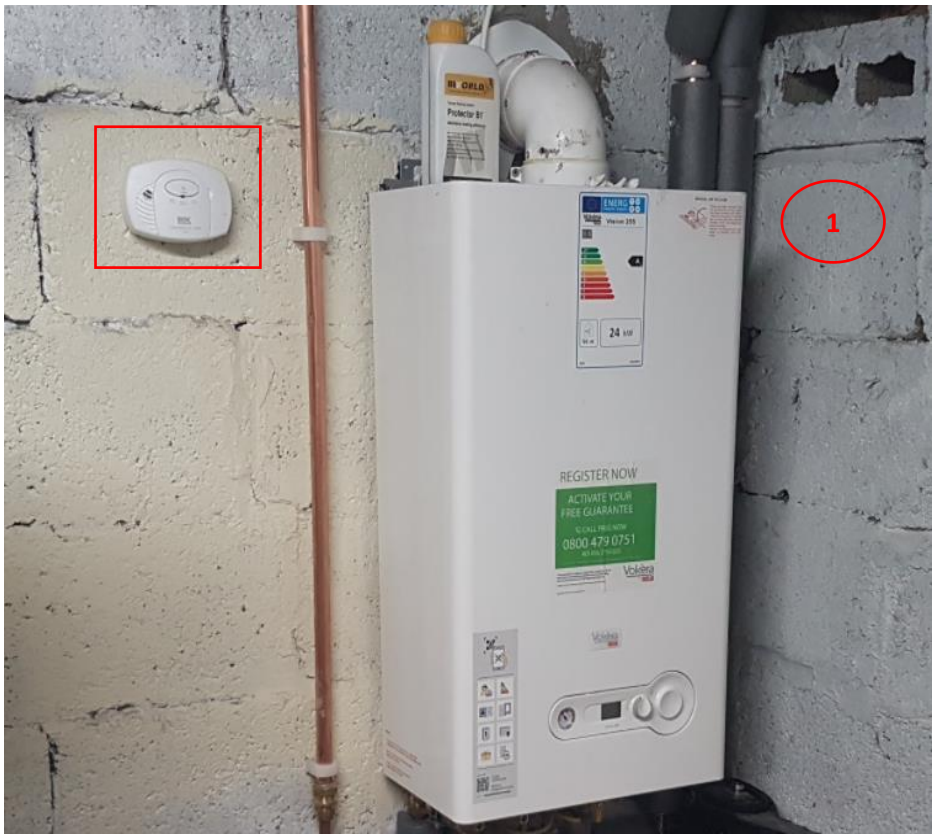


Fig 22

2. Photo of the carbon monoxide alarm including location. See fig 23

Fig 23

L1 - AUTO BYPASS & N2 - CYLINDER STAT

Please provide evidence to demonstrate the following.

1. Photo of auto by-pass valve fitted to the system. See Fig 24 & 25

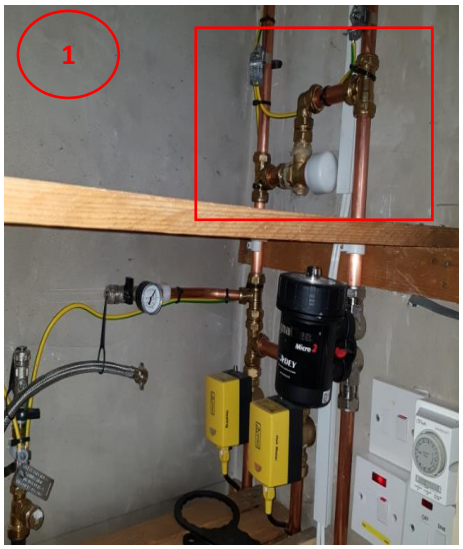


Fig 24

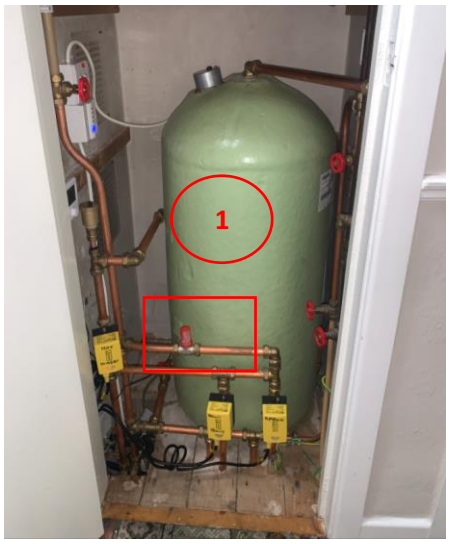


Fig 25

2. Photo of boiler data label where applicable. See Fig 26

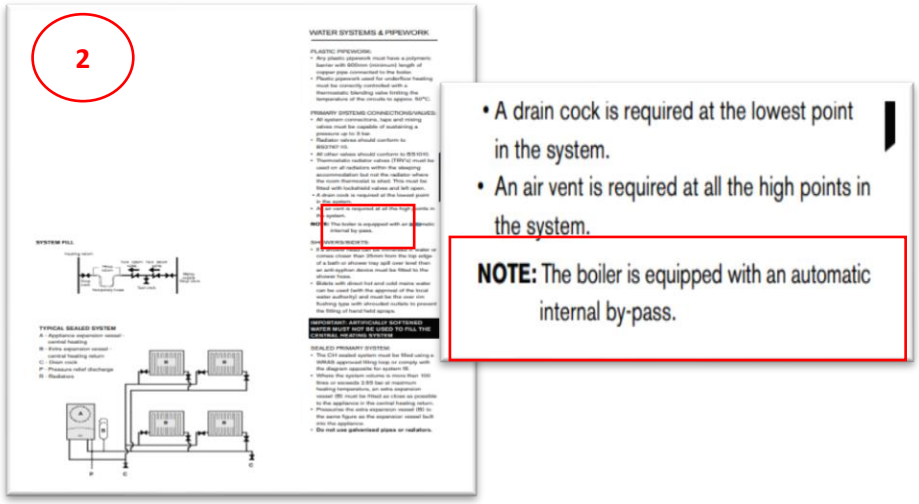


Fig 26

3. This shows a cylinder stat in the correct location. See fig 27&28

Fig 27

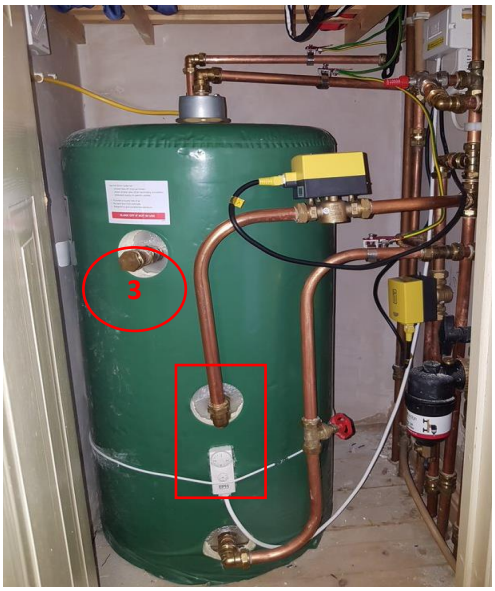


Fig 28

R4 -7 DAY (2/3 CHANNEL) PROGRAMMER

Please provide evidence to demonstrate the following.

1. Photo of 7-day 2 channel programmer with remote access. See Fig 29

2. Photo of 7-day 3 channel programmer. See Fig 30

3. Photo of 7-day 2 channel programmer. See Fig 31

Fig 29

Fig 30

Fig 31

H1 & H2 -GAS SUPPLY & PIPEWORK

Please provide evidence to demonstrate the following.

1. Photo of the Gas meter. See Fig 31

2. Photo of the Boiler and surrounding pipework. See Fig 32

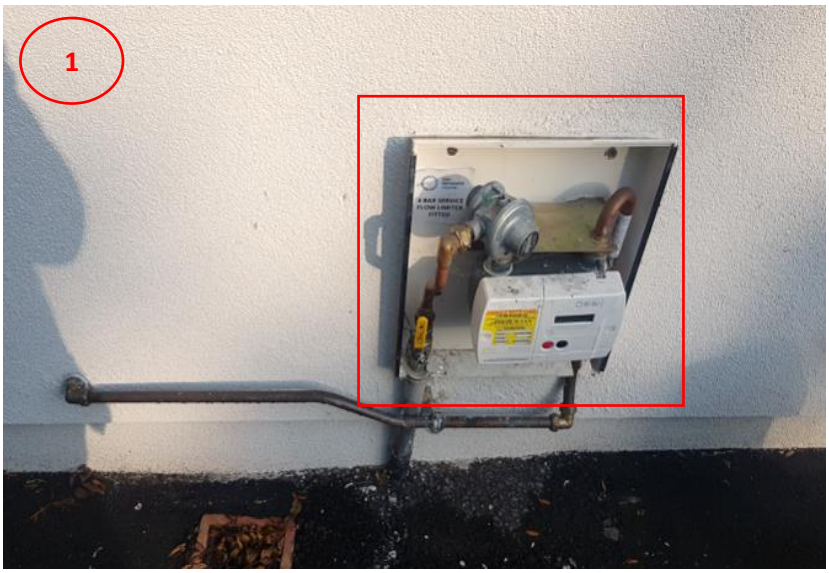


Fig 31

Fig 32

Oil Boiler

The following is a guide of the photos that contractors should provide where an oil boiler and heating controls have been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
A3, G9	HEATING STANDARD	Evidence no pressure relief valve, or facility for expansion on a heating system	SEV 1	Document, photo	A photo of the expansion vessel, Feed and Expansion tank & safety valve or a photo of the system boiler label and data sheet proving that these items are included in the boiler package. Photo of the safety valve and pipework terminal.
C1, D1	BOILER CONDITION/LOCATION	Evidence of Boiler damaged and boiler Installed in an area where it's not to regulation	SEV 1	Photo	A wide-angle photo of the boiler installed.
HB1	CARBON MONOXIDE ALARM	Not installed when required	SEV 1	Photo	Photo of the CO alarm including location.
T5	ROOM STAT	Not fitted	SEV 1	Photo	Wide angel photo of room thermostat(s) capturing their location(s)
V7, V13	ELECTRICAL WORK	Earth Bonding isn't present on pipework to ETCI rules (at boiler and hot press). Evidence all electrical works not to standard	SEV 1	Photo	Photos of the following, boiler, cylinder, all surrounding pipework and heating controls fittings. Where pipework exits the area e.g. pipework leaving the hot press through the timber floor in copper. If applicable photo of the gas meter and gas pipe underneath the gas boiler.
V6	ELECTRICAL WORK	No fused spur switch visible/ Evidence poorly located.	SEV 1	Photo	Photo of the spur switch.
Z1, Z4	OIL TANK LOCATION/ INSTALLATION	Location Evidence oil tank is not satisfactory and Evidence Fire barriers required. Evidence not as per Scheme Standard	SEV 1	Document, photo	Photo of oil tank capturing location Base Evidence of bund Oil line and components Oil tank risk assessment
HC6	VENTILATION	Evidence of inadequate ventilation to boiler	SEV 1	Document, photo	Photo of boiler Boiler manual, Boiler in Situ
H5	OIL SUPPLY	Remote fire valve not fitted / not to standard	SEV 1	Photo	Photo of the boiler capturing, front rear and side, Oil line and components, Flue terminal Door open with burner and control box visible, Rear access panel removed, Safety valve, Condense pipe.

HA1	FLUE INSTALLATION	Evidence Not to regulation	SEV 1	Photo	Flue in its entirety including Flue terminal close up and distant Boiler.
N2, L1	CYLINDER STAT AND AUTO BYPASS VALVE	Not fitted	SEV 1	Photo	Photo of the hot water cylinder with stat visible. Photo of auto by-pass valve or boiler data sheet where applicable.
R4	7 DAY (2/3 CHANNEL) PROGRAMMER	Not fitted	SEV 1	Photo	Photo of the programmer that was fitted.
U1	IMMERSION HEATER TIMER	Not fitted but required	SEV 1	Photo	Photo of the immersion timer, cylinder and immersion switch.
V12	ELECTRICAL WORK	Homeowner not issued with 'Electrical Safety notice to homeowner' if required	SEV 1	Document, photo	All photos and documents above will be used to review these questions.
ZB3	OIL BOILER & CONTROLS AS PER SPECIFICATION	Evidence not as per Scheme Standard	SEV 1	Photo	
WHL5 WHL5	DECOMMISIONED HEATING SYSTEM	Evidence existing system has not been decommissioned to scheme standard.	SEV 1	Photo	

A3 & G9- HEATING STANDARD

Please provide evidence to demonstrate the following.

1. Photo of the expansion vessel used for the heating system. See Fig 1
2. Photo of the feed and expansion tank used for the heating system. See Fig 2
3. Photo of the pressure relief valve used for the heating system, i.e. the safety valve. See Fig 3
4. Photo of the system boiler data label, demonstrating that the expansion and pressure relief are integral to the boiler. See Fig 4

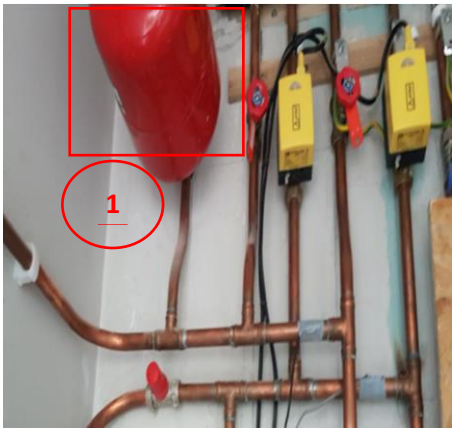


Fig 6

Fig 7

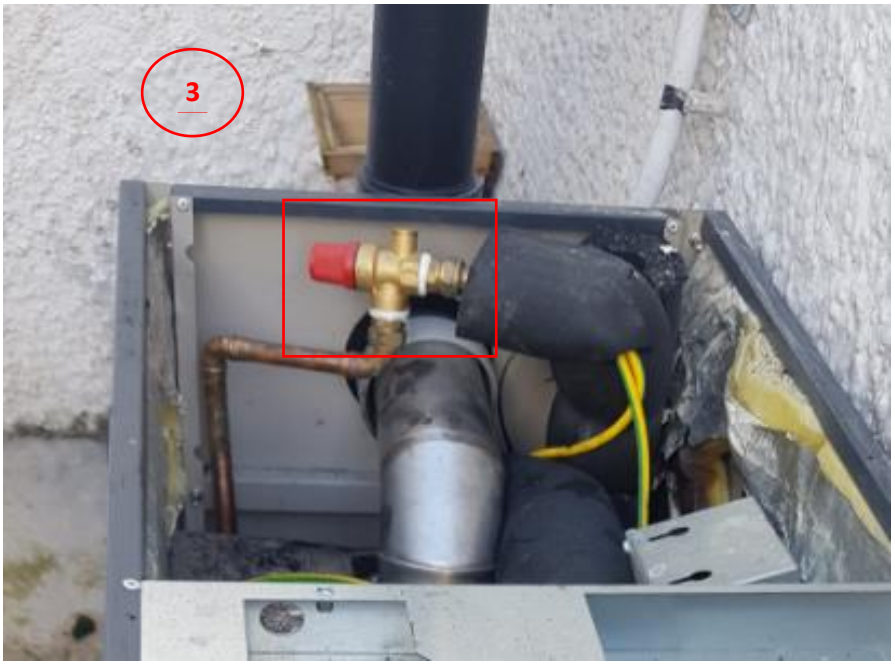


Fig 8

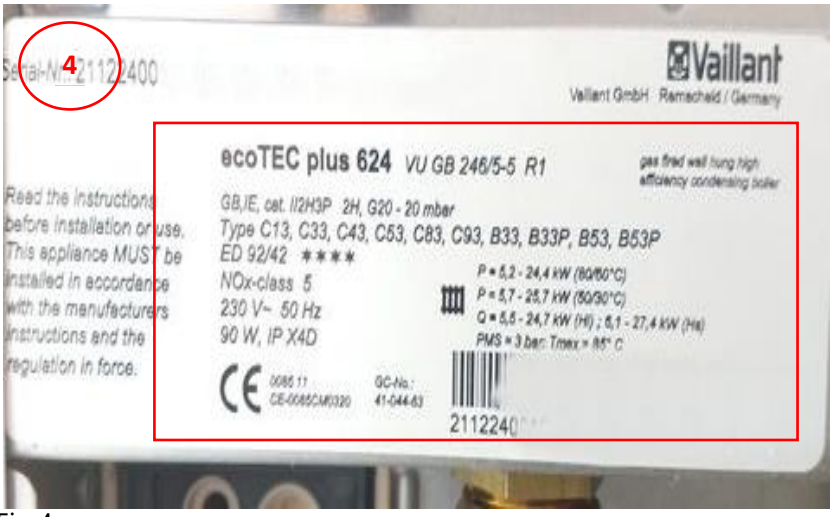


Fig 4

C1, D1 – BOILER CONDITION & SAFETY DISCHARGE

Please provide evidence to demonstrate the following.

1. A wide-angle photo of the boiler fitted. See Fig 5 & 6

2. Photo of the safety valve pipework and terminal. See fig 7

Fig 5

Fig 6

Fig 7

V6 & V7 -& V12 ELECTRICAL WORK

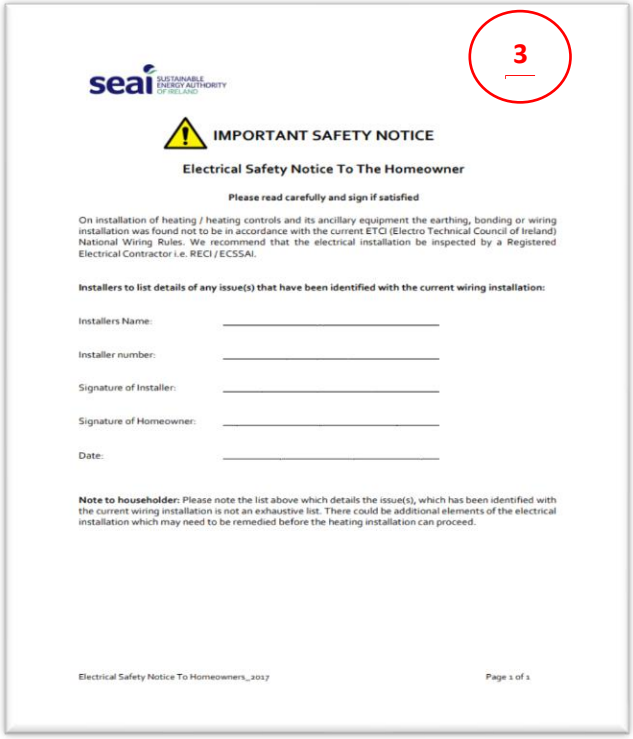
Please provide evidence to demonstrate the following.

1. Photo of the spur switch. See fig 8
2. Photo of cylinder, surrounding pipework and where pipework exits the area e.g. pipework leaving the hot press through the timber floor in copper. See fig 9
3. Photo of boiler and surrounding pipework. See fig 10
4. Photo of the SEAI electrical safety notice where applicable. See fig 11

Fig 8

Fig 9

Fig 10


3

seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

IMPORTANT SAFETY NOTICE

Electrical Safety Notice To The Homeowner

Please read carefully and sign if satisfied

On installation of heating / heating controls and its ancillary equipment the earthing, bonding or wiring installation was found not to be in accordance with the current ETCI (Electro Technical Council of Ireland) National Wiring Rules. We recommend that the electrical installation be inspected by a Registered Electrical Contractor i.e. RECI / ECSSAI.

Installers to list details of any issue(s) that have been identified with the current wiring installation:

Installers Name: _____

Installer number: _____

Signature of Installer: _____

Signature of Homeowner: _____

Date: _____

Note to householder: Please note the list above which details the issue(s), which has been identified with the current wiring installation is not an exhaustive list. There could be additional elements of the electrical installation which may need to be remedied before the heating installation can proceed.

Electrical Safety Notice To Homeowners_2017 Page 1 of 1

R4 -7 DAY (2/3 CHANNEL) PROGRAMMER

Please provide evidence to demonstrate the following.

1. Photo of 7-day 2 channel programmer with remote access. See Fig 16

2. Photo of 7-day 3 channel programmer. See Fig 17

3. Photo of 7-day 2 channel programmer. See Fig 18

Fig 16

Fig 17

Fig 18

T5 -ROOM STAT

Please provide evidence to demonstrate the following.

2. Photo of room thermostat(s) and radiator with a clear view of the lock shield valves. See Fig 19 & 20

Fig 19

Fig 20

U1 -IMMERSION HEATER TIMER

Please provide evidence to demonstrate the following.

7. Photo of the cylinder, immersion timer and immersion switch. See Fig 21

Fig 21

8. Photo of the immersion timer and immersion switch. See Fig 22

Fig 22

9. Typical immersion timer types. See Fig 23

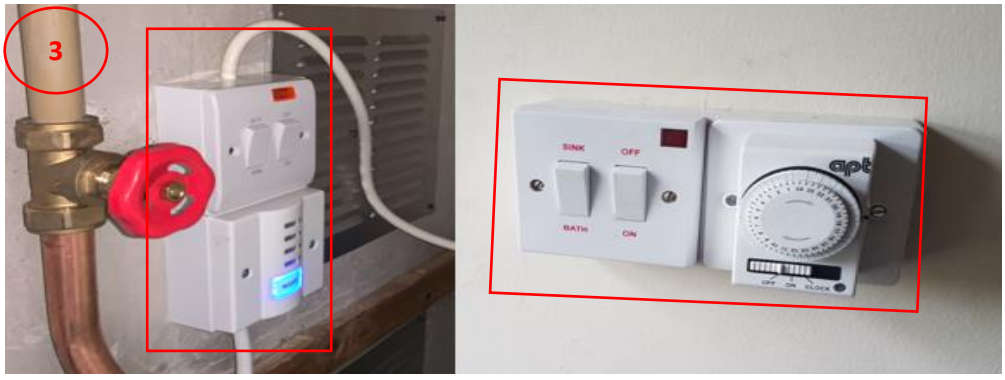


Fig 23

HB 1 – CARBON MONOXIDE ALARM

Please provide evidence to demonstrate the following.

1. Photo of the carbon monoxide alarm including location. See fig 24

Fig 24

2. Photo of the carbon monoxide alarm. See fig 25

Fig 25

Z1 & Z4 – OIL TANK LOCATION/ INSTALLATION & H5 – OIL SUPPLY

Please provide evidence to demonstrate the following.

1. Photo of the oil tank and surrounding area. See fig 26& 27

Fig 26

Fig 27

2. Photo of the remote activated fire valve. See fig 28

Fig 28

3. Photo of the remote acting fire valve temperature probe. See fig 29

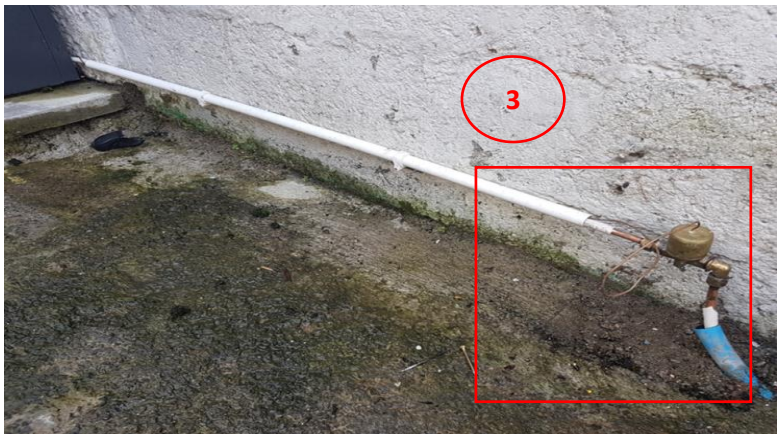


Fig 29

HA1 – FLUE INSTALLATION

Please provide evidence to demonstrate the following.

1. Photo of the Flue terminal close up. See Fig 30

2. Photo of the Flue sections internally. See Fig 31

3. Photo of the Flue terminal distant. See Fig 32

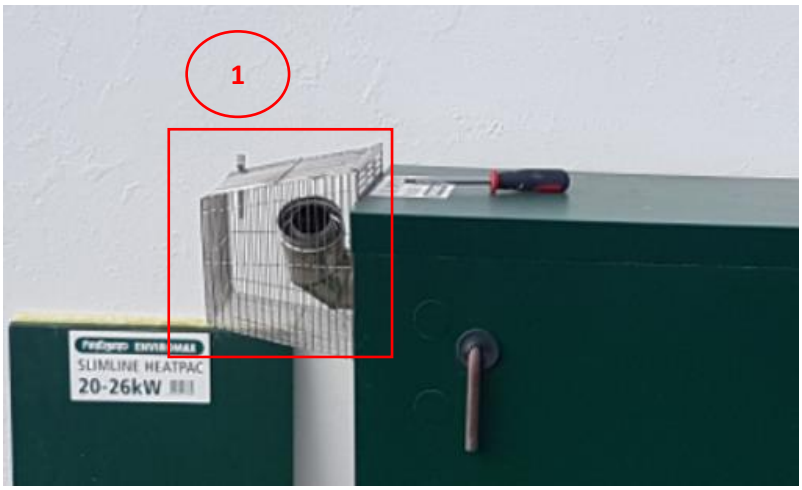


Fig 30

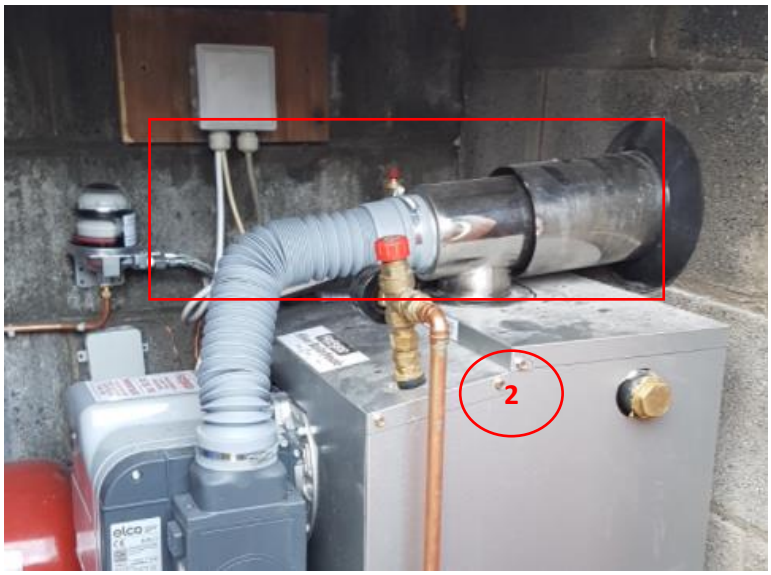


Fig 31

Fig 32

Solar Thermal Heating

The following is a guide of the photos that contractors should provide where solar heating has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
J1	SOLAR LOOP ANCILLARY VALVES	Expansion and pressure release valve not installed.	SEV 1	Photo	Photo of safety valve, expansion vessel control unit and pipework.
A4	SYSTEM DETAILS	Aperture Area of panels/tubes not correctly sized by house area.	SEV 1	Photo, Documents, Declaration of works	Photo of tubes/panels installed Photos of all elevations Declaration of works with system details and calcs Datasheet for tubes/panels
B1, B5	INSTALLATION OF COLLECTORS	Evidence Panel/tubes are visibly damaged/ evidence Collectors not adequately fastened to the roof.	SEV 1	Photo	Photos of array installed. All photos will be used to review works.
P3, P4, P5	ELECTRICAL	Evidence probes/sensors not securely fixed. Evidence bonding not present on pipework to ETCI rules (on solar loop and hot press) Non switchable spur not visible/ evidence poorly located.	SEV 1	Photo	Photo of cylinder, pumping station, surrounding pipework, solar loop pipework, control panels and where pipework exits the area e.g. pipework leaving the hot press through the timber floor in copper. Photo of the non-switchable spur with location reference to the pumping station or programmer.
H1, H2	COMMISSIONING	Commissioning report not available for inspection or not completed	SEV 1	Document, photo	Homeowner pack.
N1	SOLAR WATER HEATING SYSTEM AS PER SPECIFICATION	Not as per Scheme Standard	SEV 1	Document, photo	All photos and documents above will be used to review these questions.
P9	ELECTRICAL	Evidence work not to standard.	SEV 1	Photo	

J1 - SOLAR LOOP ANCILLARY/VALVES

Please provide evidence to demonstrate the following.

1. Photo of the safety valve and expansion vessel. See Fig 1 & 2

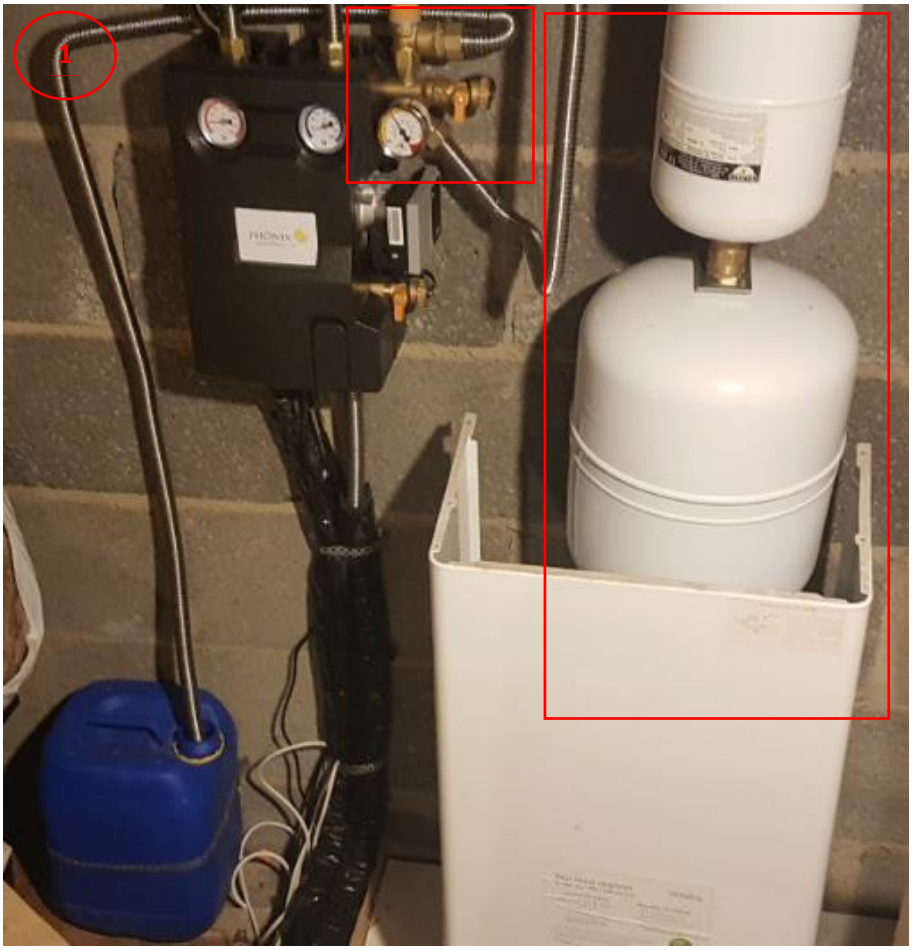


Fig 1

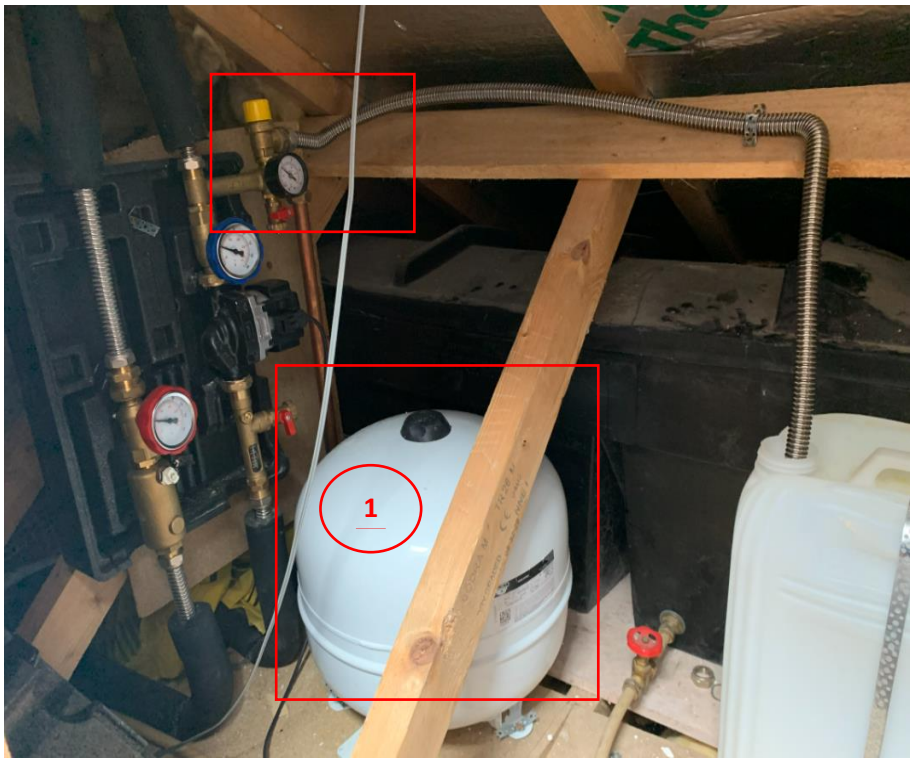


Fig 2

A4 - SYSTEM DETAILS B1 & B5 - INSTALLATION OF COLLECTORS

Please provide evidence to demonstrate the following.

1. Wide angled photos of panels or tubes installed this is in addition to the common photos. See fig 3 & 4

2. Photo/PDF of Datasheet for tubes/panels. See Fig 5

Fig 3

Fig 4

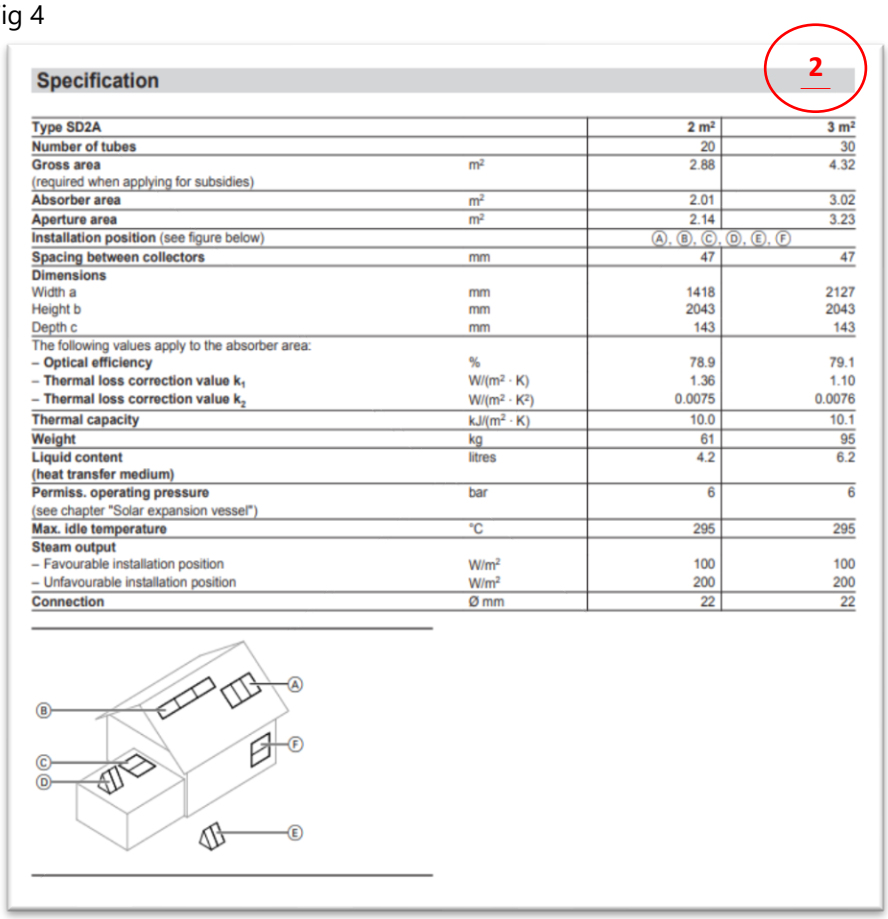


Fig 5

P3 & P4 - ELECTRICAL

Please provide evidence to demonstrate the following.

1. Photo of the cylinder with secure probe cable. See fig 6

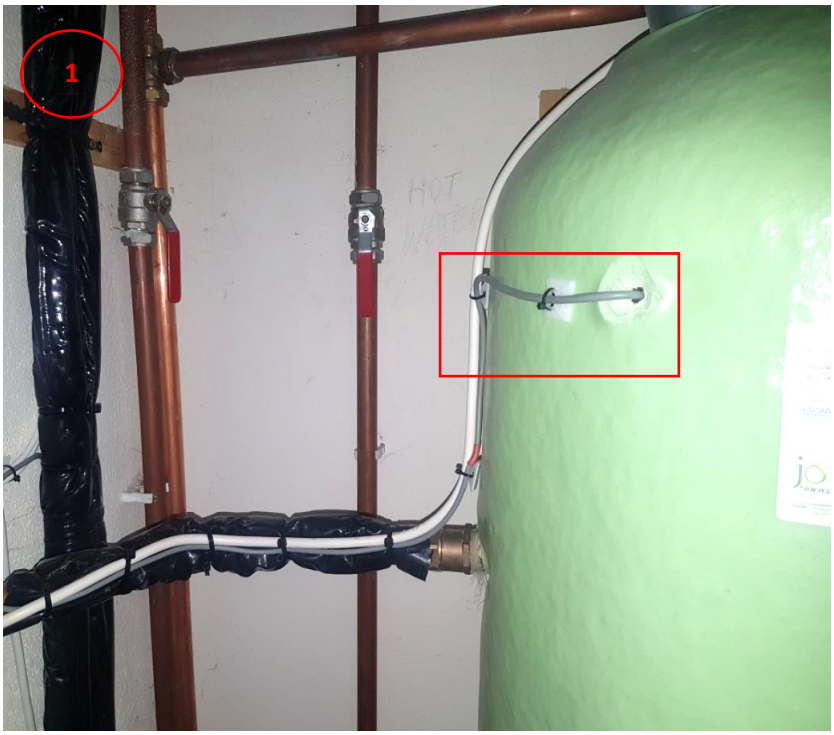


Fig 6

2. Photo of the non-switchable spur. See fig 7

Fig 7

P5 & P9 - ELECTRICAL

Please provide evidence to demonstrate the following.

1. Photo of the cylinder and surrounding pipework. Pipework exiting the area. Ensure to include cross bonding at cylinder. See Fig 8, 9 & 10

2. Photo of the electrical safety notice where applicable. See Fig 11

Fig 8

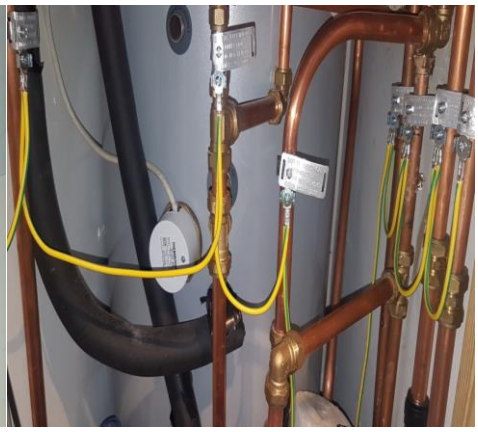


Fig 9

Fig 10

Fig 11

E7 - DOMESTIC HOT WATER INSTALLATION

Please provide evidence to demonstrate the following.

1. Photo of the thermal mixing valve installed. See Fig 12 & 13

2. Photo/PDF of the domestic hot water safety notice (where applicable) See Fig 14.

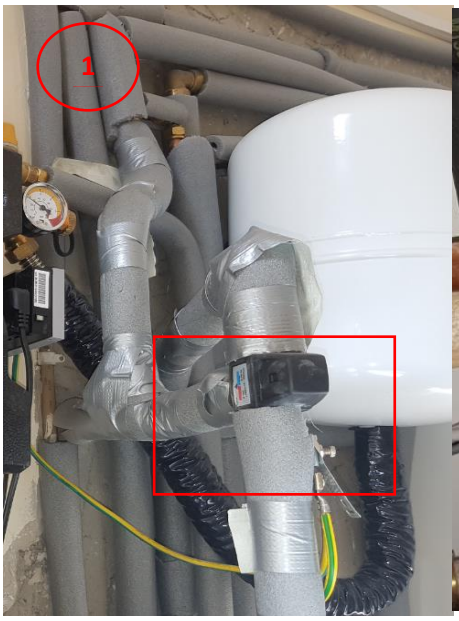


Fig 12

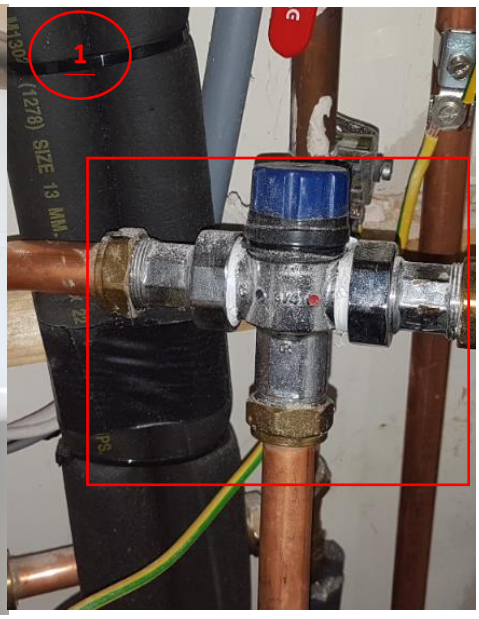


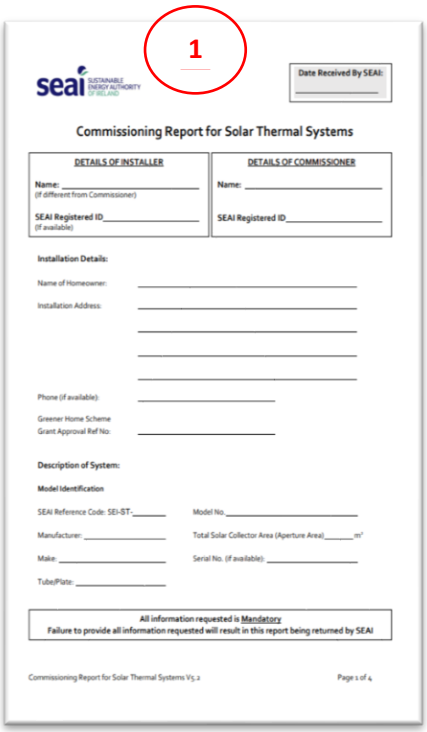
Fig 13

Fig 15

H1 & H2 - COMMISSIONING

Please provide evidence to demonstrate the following.

1. Photo/PDF of page 1 of the commissioning report for the system. See Fig 16
2. Photo/PDF of page 2 of the commissioning report for the system. See Fig 17
3. Photo/PDF of page 3 of the commissioning report for the system. See Fig 18
4. Photo/PDF of page 4 of the commissioning report for the system. See Fig 19


1

Commissioning Report for Solar Thermal Systems

DETAILS OF INSTALLER

DETAILS OF COMMISSIONER

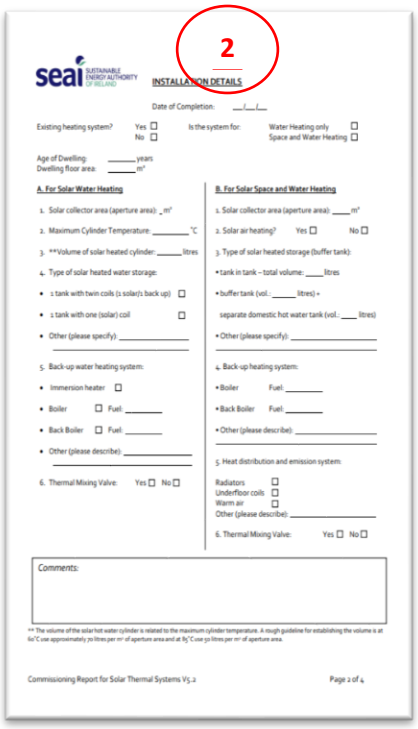
Installation Details:

Description of System:

Model Identification

All information requested is Mandatory
Failure to provide all information requested will result in this report being returned by SEAI

Fig 16


2

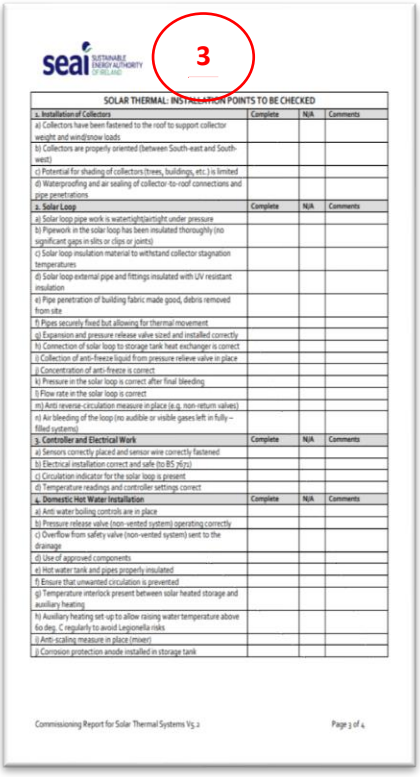
INSTALLATION DETAILS

A. For Solar Water Heating

B. For Solar Space and Water Heating

Comments:

Fig 17


3

SOLAR THERMAL: INSTALLATION POINTS TO BE CHECKED

Fig 18

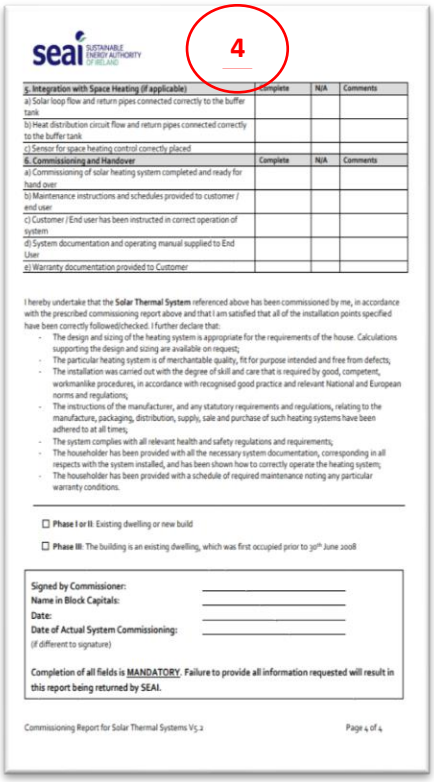

4

Fig 19

External Doors

The following is a guide of the photos that contractors should provide where external doors have been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
DS1A1, DS1A2, DS1A4, DS1A3, DS1A8	EXTERNAL DOOR SYSTEM DETAILS	U value not as per scheme standards. Doors not installed as per agreement. Evidence Not in compliance with regulations, Quantity not installed as agreed. No kite mark/ CE stamp on glass	SEV 1	Document,	Photo each door fitted PDF BER data for each door if different. Close up photo of CE Marking.

DS1A1, DS1A3 & DS1A4 - EXTERNAL DOOR SYSTEM DETAILS

Please provide evidence to demonstrate the following.

1. BER data for the door(s). and PDF of the product data sheet. See Fig 1 & 2

2. Photo of the door CE mark. See Fig 3

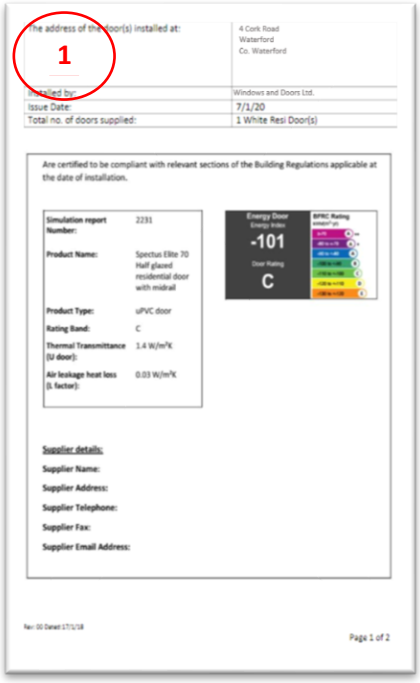


Fig 1

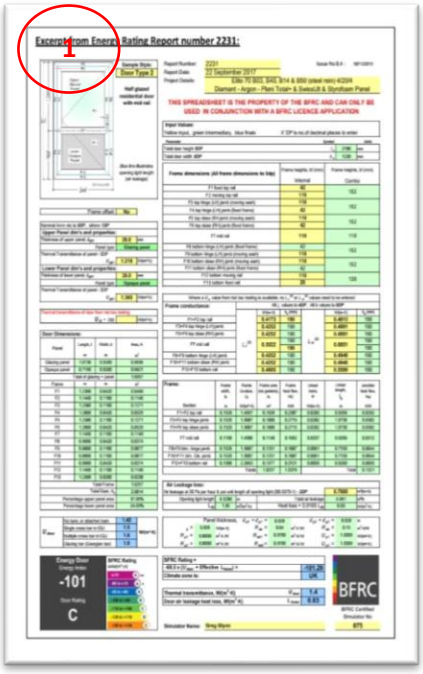


Fig 2

Fig 3

DS1A2 - EXTERNAL DOOR SYSTEM DETAILS

Please provide evidence to demonstrate the following.

1. External photo of the door fitted. See Fig 4

Fig 4

2. Internal photo of the door fitted. See Fig 5

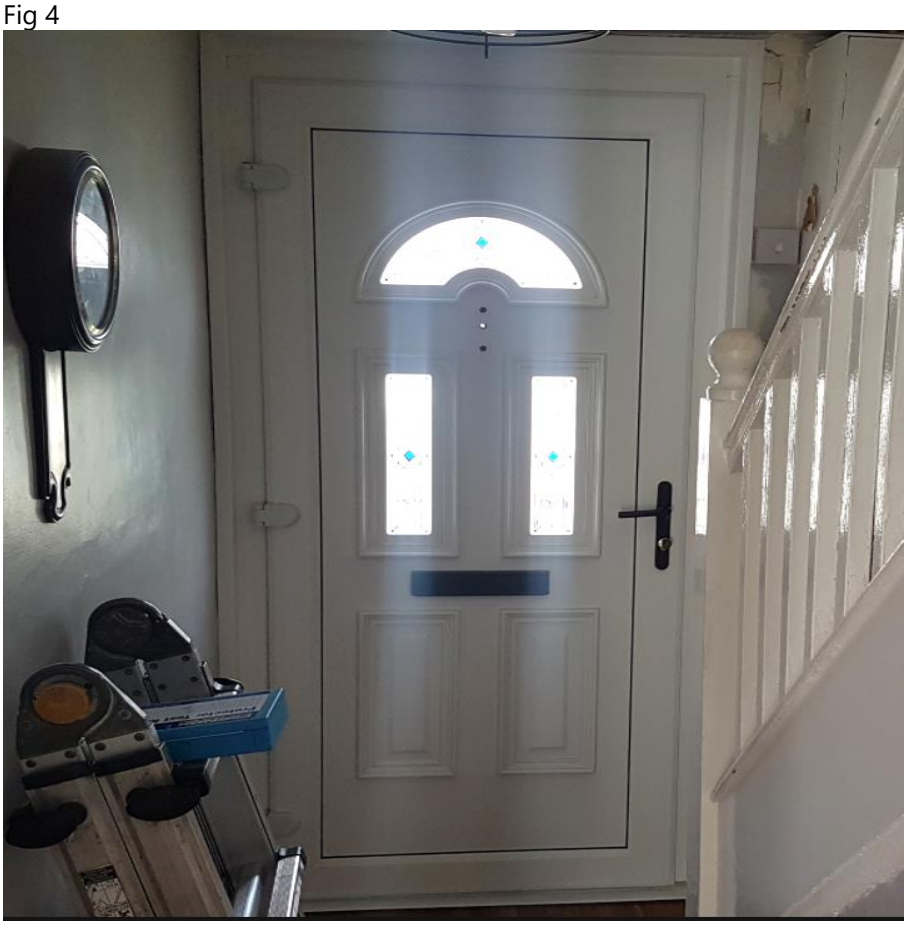


Fig 5

Windows

The following is a guide of the photos that contractors should provide where windows have been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
WS1A1, WS1A2, WS1A3, WS1A7	WINDOW SYSTEM DETAILS	U value not as per scheme standards, Windows quantity not installed as per agreement. Evidence Not in compliance with regulations, No kite mark/ CE stamp on glass	SEV 1	Document, photo	Photo each window fitted. PDF/Photo of BER data for each window if different. Ensure to capture close-up photo of CE Marking.
WS1A6	WINDOW SYSTEM DETAILS	Evidence no safety catches where required	SEV 1	Photo	A Photo of each elevation and photos of each safety latch.
WS1A13	WINDOW SYSTEM DETAILS	Trickle vents not to standards	SEV 1	Document, photo	A data sheet for the trickle vent would be required. A photo of each window would give confidence that the trickle vent is installed.
WS1A14	VENTILATION	Evidence that there is an issue with the ventilation on site	SEV 1	Photo	All photos and documents above will be used to review these questions.

WS1A1, WS1A2, WS1A3, - WINDOW SYSTEM DETAILS

Please provide evidence to demonstrate the following.

1. Photos of data sheets and window energy peformance certificate. See Fig 1 & 2

Fig 1

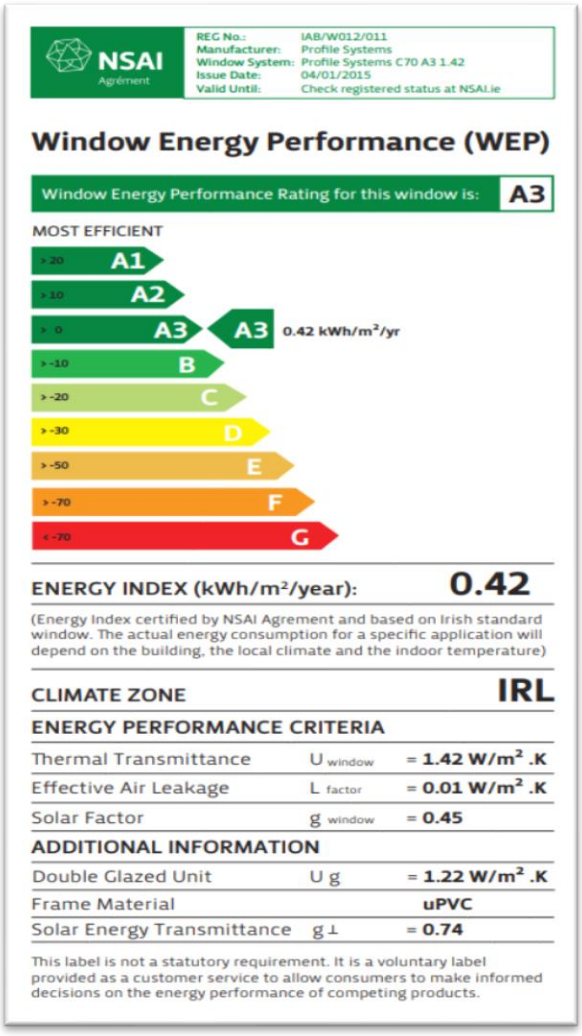


Fig 2

WS1A1, WS1A2, WS1A3, - WINDOW SYSTEM DETAILS

Please provide evidence to demonstrate the following.

1. Photos of all elevations pre works, see front elevation example. See Fig 3

Fig 9

2. Photos of all elevations post works, see front elevation example. See Fig 4

Fig 10

WS1A6 - WINDOW SYSTEM DETAILS

Please provide evidence to demonstrate the following.

1. Photos of the safety latches installed (where applicable). See Fig 6 & 7

Fig 5

Fig 6

WS1A7 - WINDOW SYSTEM DETAILS

Please provide evidence to demonstrate the following.

1. Photo of the window CE mark. See Fig 7

2. PDF of the product certificate/data sheet. See Fig 8

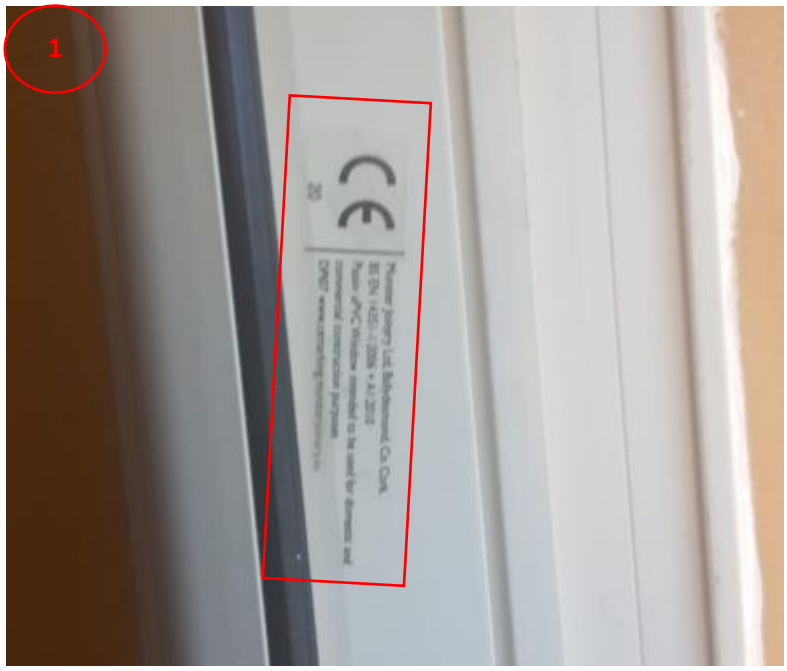


Fig 7

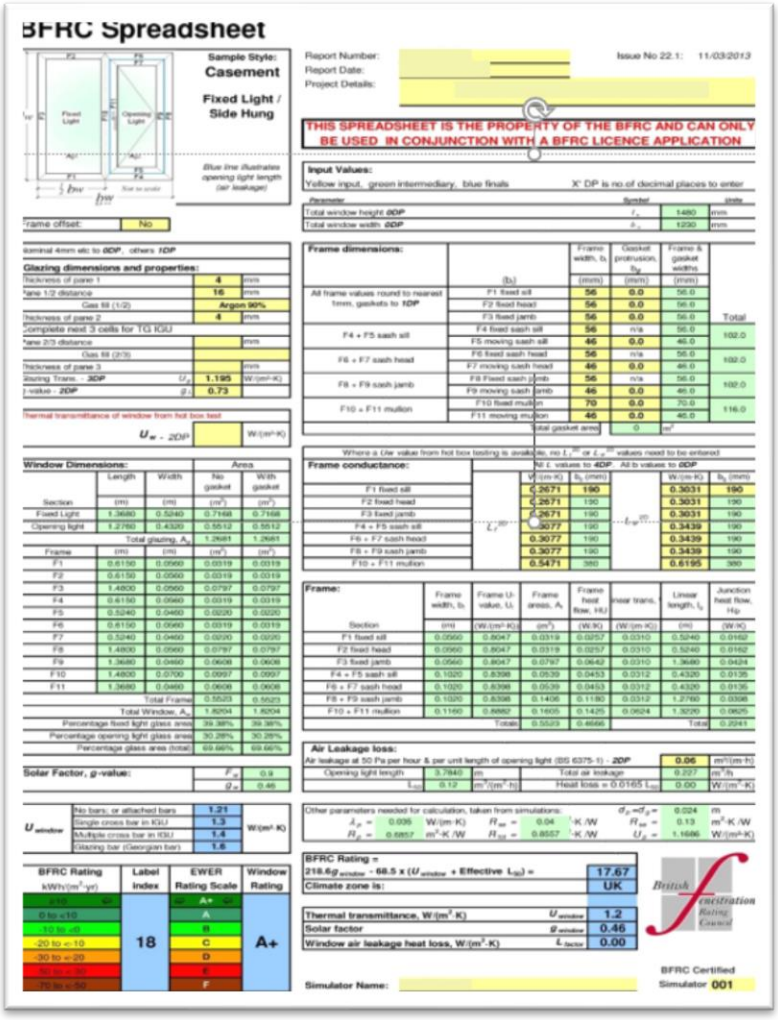


Fig 8

WS1A13 - VENTILATION

Please provide evidence to demonstrate the following.

1. Photo of the window trickle ventilation, See Fig 9

2. PDF of the product certificate/data sheet, See Fig 10

Fig 9

Fig 10

WS1A14 - VENTILATION

Please provide evidence to demonstrate the following.

1. A chimney is visible from the elevation photos which suggest that there is an open flued appliance present in the property. See fig 9

2. Photo of the,

   a. Appliance
   b. Permanent ventilation See fig 10

Fig 9

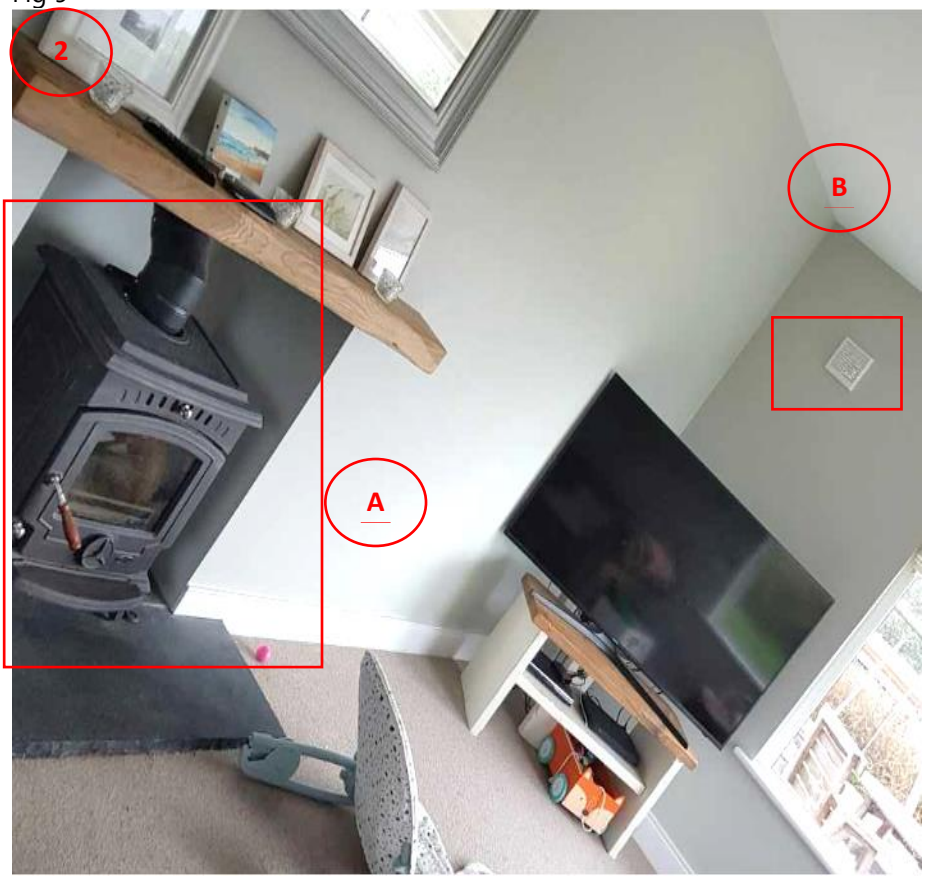


Fig 10

Floor Insulation

The following is a guide of the photos that contractors should provide where floor insulation has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
FL1	INSULATION AS PER SPECIFICATION	Insulation does not meet the specified u-value	SEV 1	Document/Photo	Photo of measuring tape each room before insulation.
FL2	ELECTRICAL	Evidence Cables not enclosed in suitable conduit	SEV 1	Photo	Photo of each room before and after insulation is covered.
FL3	VENTILATION	Evidence that there is an issue with the floor ventilation or no floor ventilation where applicable	SEV 1	Photo	Photo of all elevations pre and post works.

FL1 - INSULATION AS PER SPECIFICATION

Please provide evidence to demonstrate the following.

1. PDF/Photo of floor section and plan. See Fig 1 & 2

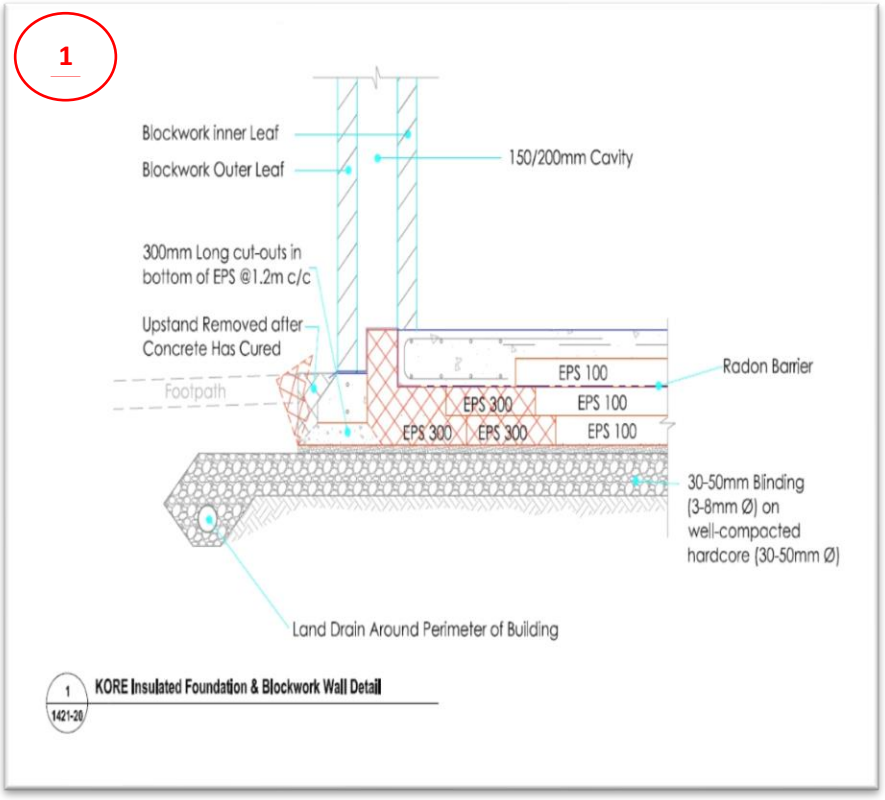


Fig 1

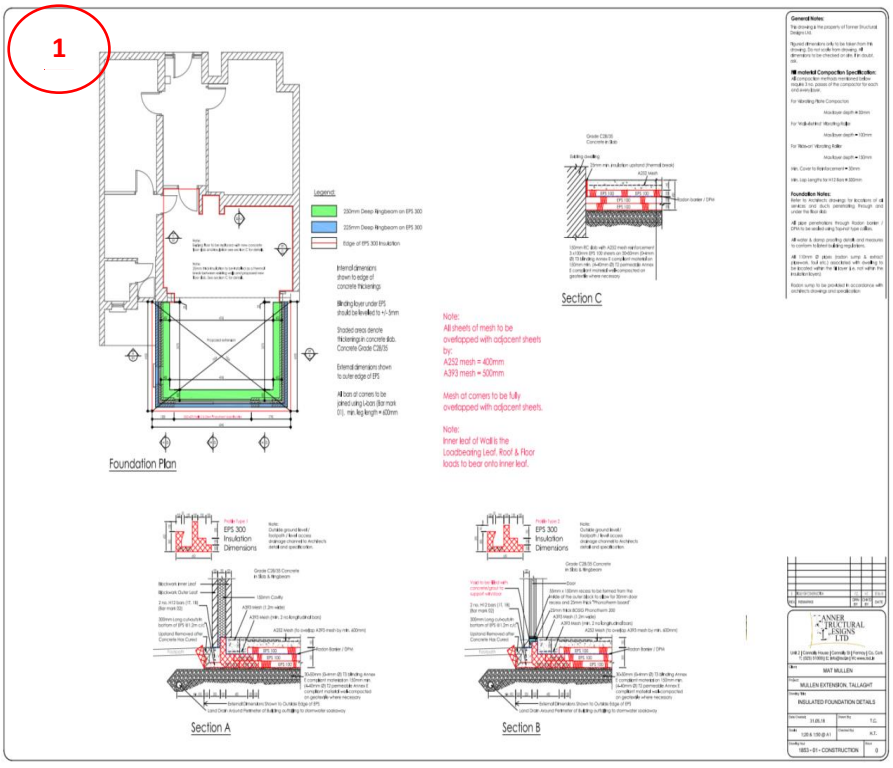


Fig 2

FL2 - ELECTRICAL

Please provide evidence to demonstrate the following.

1. Floor insulation before screed. See fig 3 & 4

2. Floor insulation and screed finished. See Fig 5

Fig 3

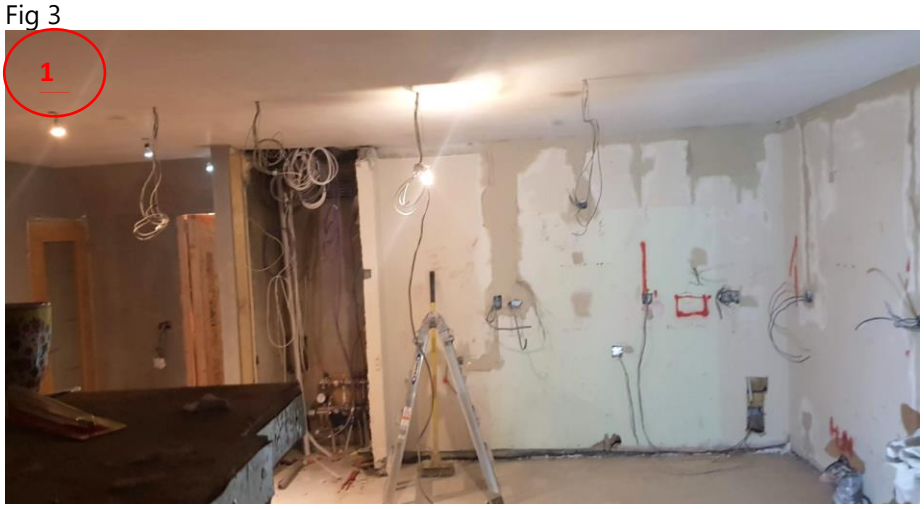


Fig 4

Fig 5

FL3 - VENTILATION

Please provide evidence to demonstrate the following.

1. Photo of elevations if applicable pre-works. See fig 6

2. Photo of elevations if applicable post-works. See Fig 7

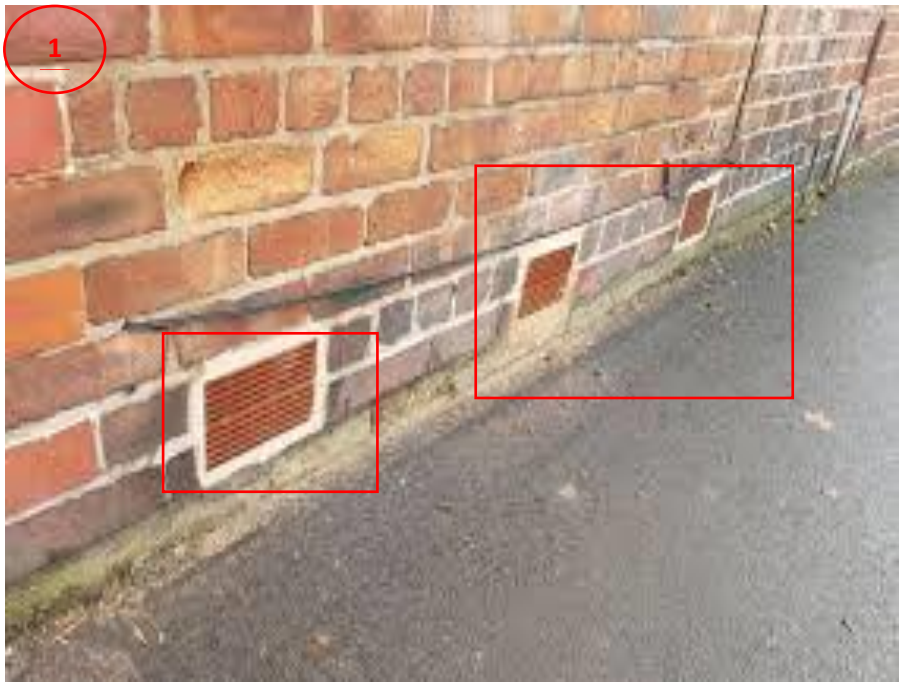


Fig 6

Fig 7

Airtightness

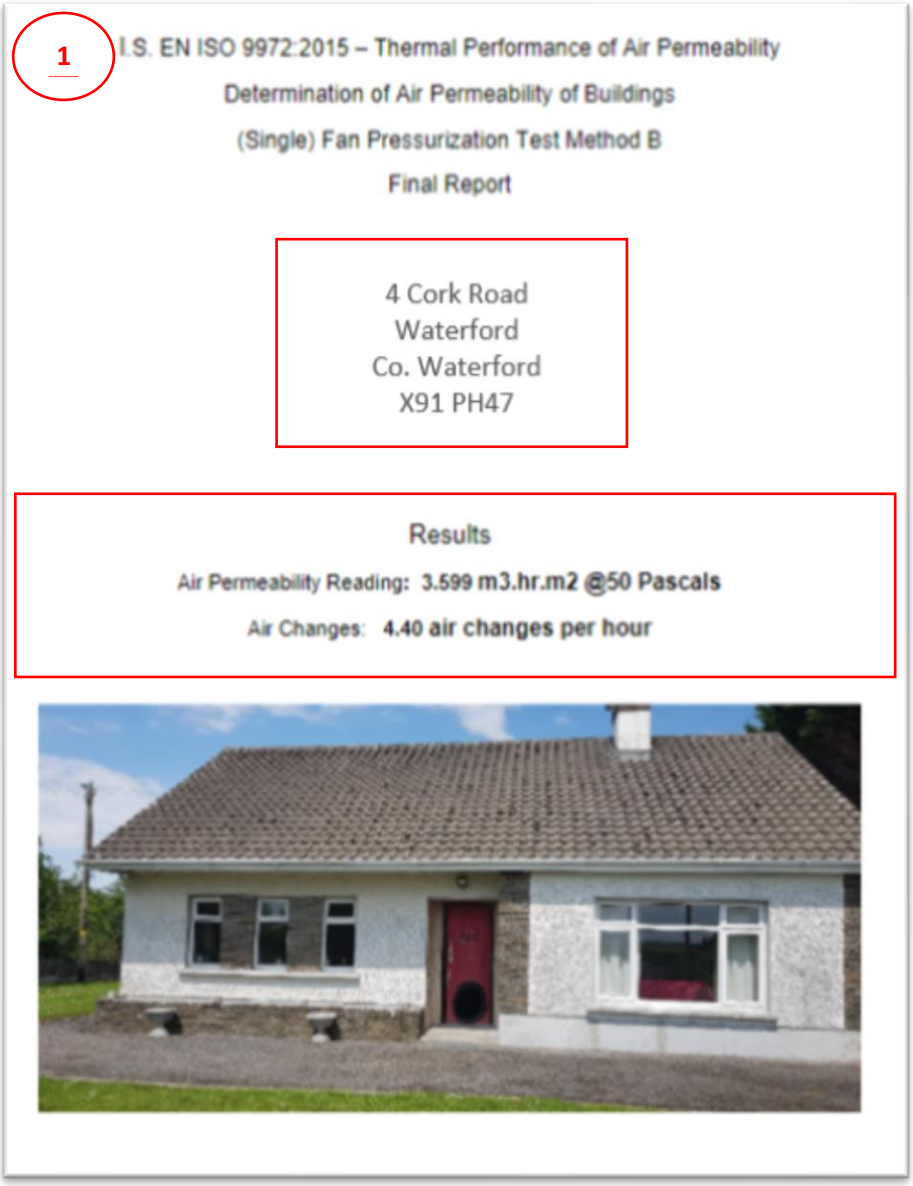
The following is a guide to the suggested photos that contractors should provide for a desktop audit where an airtightness test has been completed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
AS3A1	AIRTIGHTNESS TEST RESULT	Either DCV/MVHR not installed where test results are below 5 m3/hm2 or no agreement to install ventilation as per Table 32-SR54	SEV 1	Document, photo	Copy of ATT report uploaded.

AS3A1 - AIRTIGHTNESS TEST

Please provide evidence to demonstrate the following.

1. Cover of the report with property address and Eircode. See Fig 1


1

I.S. EN ISO 9972:2015 – Thermal Performance of Air Permeability

Determination of Air Permeability of Buildings

(Single) Fan Pressurization Test Method B

Final Report

4 Cork Road
Waterford
Co. Waterford
X91 PH47

Results

Air Permeability Reading: **3.599 m3.hr.m2 @50 Pascals**

Air Changes: **4.40 air changes per hour**

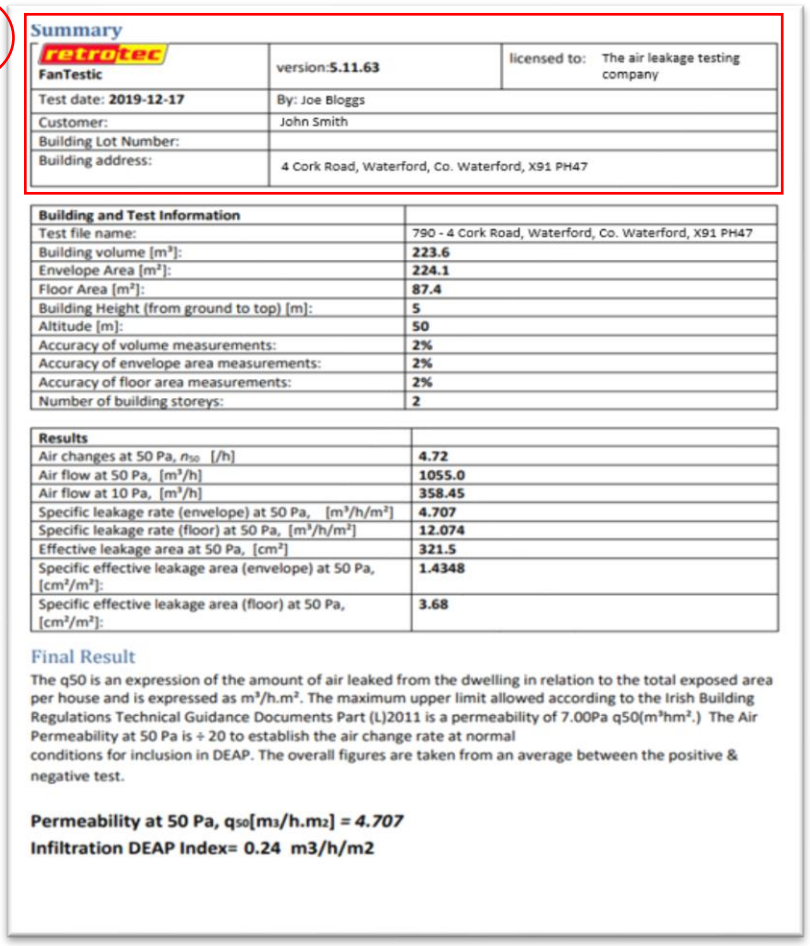
Fig 1

AS3A1 - AIRTIGHTNESS TEST RESULT

Please provide evidence to demonstrate the following.

1. See Fig 2,3 & 4. Where the report summary should confirm:
    a. Date of test.
    b. Customers name.
    c. Testers name
    d. Property's address and Eircode
    e. Testing company name
    f. Overall test result.

1



Summary

retrotec FanTestic	version:5.11.63	licensed to: The air leakage testing company
Test date: 2019-12-17	By: Joe Bloggs	
Customer:	John Smith	
Building Lot Number:		
Building address:	4 Cork Road, Waterford, Co. Waterford, X91 PH47	

Building and Test Information	
Test file name:	790 - 4 Cork Road, Waterford, Co. Waterford, X91 PH47
Building volume [m³]:	223.6
Envelope Area [m²]:	224.1
Floor Area [m²]:	87.4
Building Height (from ground to top) [m]:	5
Altitude [m]:	50
Accuracy of volume measurements:	2%
Accuracy of envelope area measurements:	2%
Accuracy of floor area measurements:	2%
Number of building storeys:	2

Results	
Air changes at 50 Pa, n_{50} [/h]	4.72
Air flow at 50 Pa, [m³/h]	1055.0
Air flow at 10 Pa, [m³/h]	358.45
Specific leakage rate (envelope) at 50 Pa, [m³/h/m²]	4.707
Specific leakage rate (floor) at 50 Pa, [m³/h/m²]	12.074
Effective leakage area at 50 Pa, [cm²]	321.5
Specific effective leakage area (envelope) at 50 Pa, [cm²/m²]:	1.4348
Specific effective leakage area (floor) at 50 Pa, [cm²/m²]:	3.68

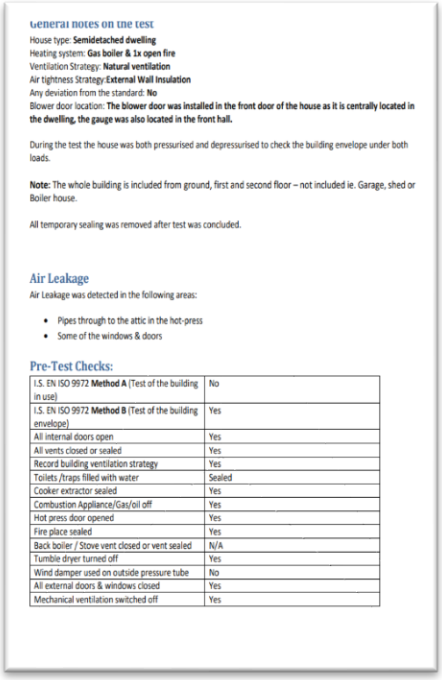
Final Result

The q50 is an expression of the amount of air leaked from the dwelling in relation to the total exposed area per house and is expressed as m³/h.m². The maximum upper limit allowed according to the Irish Building Regulations Technical Guidance Documents Part (L)2011 is a permeability of 7.00Pa q50(m³hm².) The Air Permeability at 50 Pa is ÷ 20 to establish the air change rate at normal conditions for inclusion in DEAP. The overall figures are taken from an average between the positive & negative test.

Permeability at 50 Pa, q_{50}[m3/h.m2] = *4.707*

Infiltration DEAP Index= 0.24 m3/h/m2

Fig 2



General notes on the test

House type: **Semidetached dwelling**
Heating system: **Gas boiler & 1x open fire**
Ventilation Strategy: **Natural ventilation**
Air tightness Strategy:**External Wall Insulation**
Any deviation from the standard: **No**
Blower door location: **The blower door was installed in the front door of the house as it is centrally located in the dwelling, the gauge was also located in the front hall.**

During the test the house was both pressurised and depressurised to check the building envelope under both loads.

Note: The whole building is included from ground, first and second floor – not included ie. Garage, shed or Boiler house.

All temporary sealing was removed after test was concluded.

Air Leakage

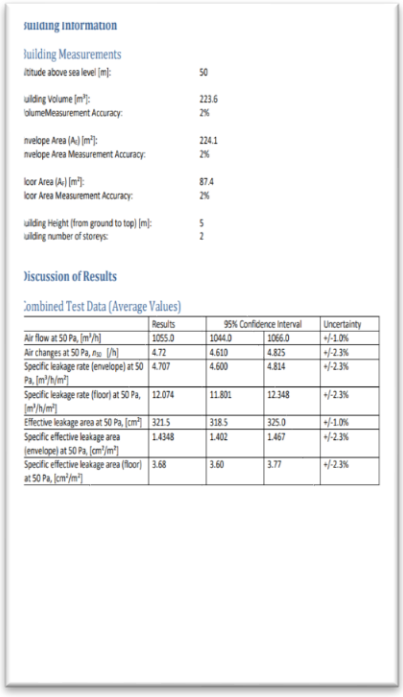
Air Leakage was detected in the following areas:

- Pipes through to the attic in the hot-press
- Some of the windows & doors

Pre-Test Checks:

I.S. EN ISO 9972 **Method A** (Test of the building in use)	No
I.S. EN ISO 9972 **Method B** (Test of the building envelope)	Yes
All internal doors open	Yes
All vents closed or sealed	Yes
Record building ventilation strategy	Yes
Toilets /traps filled with water	Sealed
Cooker extractor sealed	Yes
Combustion Appliance/Gas/oil off	Yes
Hot press door opened	Yes
Fire place sealed	Yes
Back boiler / Stove vent closed or vent sealed	N/A
Tumble dryer turned off	Yes
Wind damper used on outside pressure tube	No
All external doors & windows closed	Yes
Mechanical ventilation switched off	Yes

Fig 3



Building Information

Building Measurements

Altitude above sea level [m]:	50
Building Volume [m³]:	223.6
VolumeMeasurement Accuracy:	2%
Envelope Area (A_E) [m²]:	224.1
Envelope Area Measurement Accuracy:	2%
Floor Area (A_F) [m²]:	87.4
Floor Area Measurement Accuracy:	2%
Building Height (from ground to top) [m]:	5
Building number of storeys:	2

Discussion of Results

Combined Test Data (Average Values)

	Results	95% Confidence Interval		Uncertainty
Air flow at 50 Pa, [m³/h]	1055.0	1044.0	1066.0	+/-1.0%
Air changes at 50 Pa, n_{50} [/h]	4.72	4.610	4.825	+/-2.3%
Specific leakage rate (envelope) at 50 Pa, [m³/h/m²]	4.707	4.600	4.814	+/-2.3%
Specific leakage rate (floor) at 50 Pa, [m³/h/m²]	12.074	11.801	12.348	+/-2.3%
Effective leakage area at 50 Pa, [cm²]	321.5	318.5	325.0	+/-1.0%
Specific effective leakage area (envelope) at 50 Pa, [cm²/m²]	1.4348	1.402	1.467	+/-2.3%
Specific effective leakage area (floor) at 50 Pa, [cm²/m²]	3.68	3.60	3.77	+/-2.3%

Fig 4

AS3A1 - AIRTIGHTNESS TEST RESULT

Please provide evidence to demonstrate the following.

1. All pages of the air tightness test report. See figures 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12. A pdf of the test report is also acceptable.

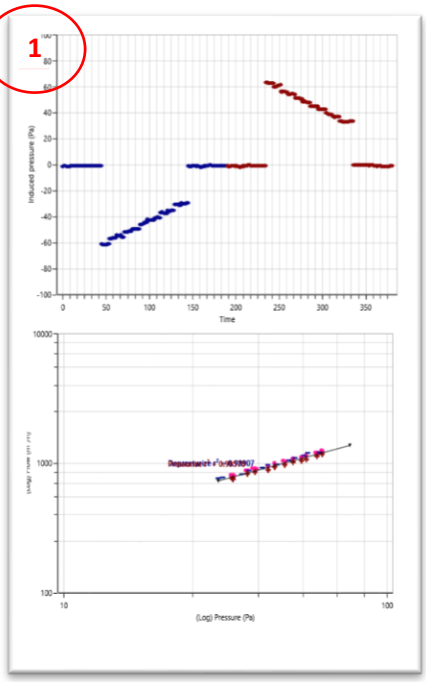


Fig 11

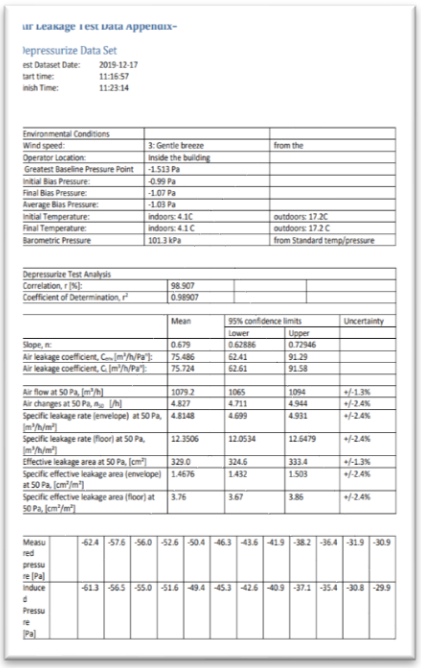


Fig 12

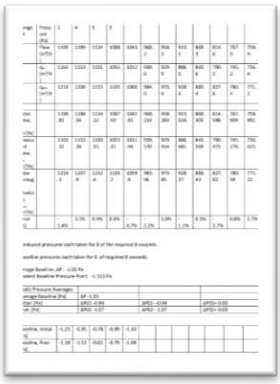


Fig 13

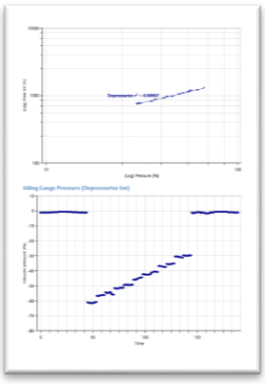


Fig 14

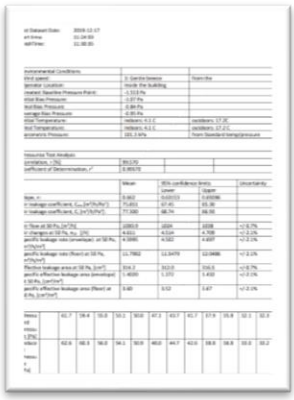


Fig 15

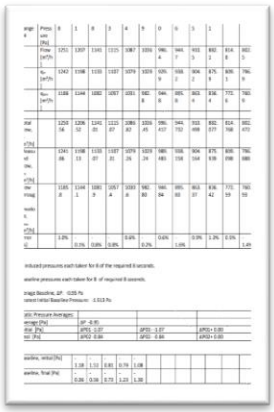


Fig 16

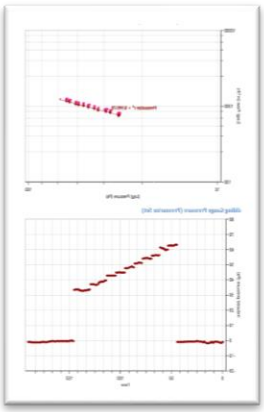


Fig 17

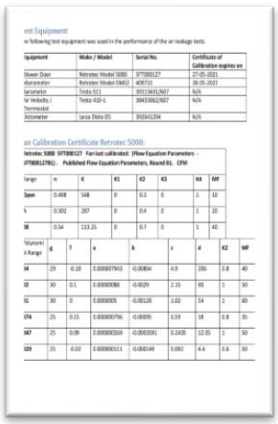


Fig 18

Demand-Controlled Ventilation

The following is a guide of the photos that contractors should provide where roof Demand-controlled ventilation has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
DCV1	System	Insufficient ventilation	SEV 1	Documentation	Ventilation Validation Certificate (NSAI Registered Ventilation Validator) for works allocated after the 1st November 2019.
DCV2	System	Evidence Not installed as per manufacturer's instructions	SEV 1	Photo	Fan unit(s) Distant photo of the Fan unit for centralised unit Wet room outlet Inlets.
DCV4, DCV5	Inlets/Outlets	Evidence Inlets not fitted but required	SEV 1	Photo	Photos of all inlets and outlets.
DCV6	VENTILATION	No permeant vent visible or evidence chimney is not connected to an open flued appliance	SEV 1	Photo	Photo of fireplace/appliance and/or corresponding vent. Photos of all elevations, front, side(s) and rear where applicable pre installation Photo of all elevations.
DCV7	Fan	Evidence Spur not fitted/ Incorrect fuse fitted	SEV 1	Document, photo	Photo of the fan unit capturing, Close up with data label. Surrounding area including ducting and spur
DCV8	Fan	Evidence Incorrectly fitted/ not safely fitted	SEV 1	Document, photo	All photos and documents above will be used to review these questions.
DCV9	Fan	Evidence No suitable access for maintenance	SEV 1	Document, photo	
DCV3	System	Evidence Not as per Scheme standard	SEV 1	Document, photo	

DCV1 - SYSTEM

Please provide evidence to demonstrate the following.

1. Ventilation Validation Certificate (NSAI Registered Ventilation Validator) for works allocated after the 1st November 2019. See Fig 1

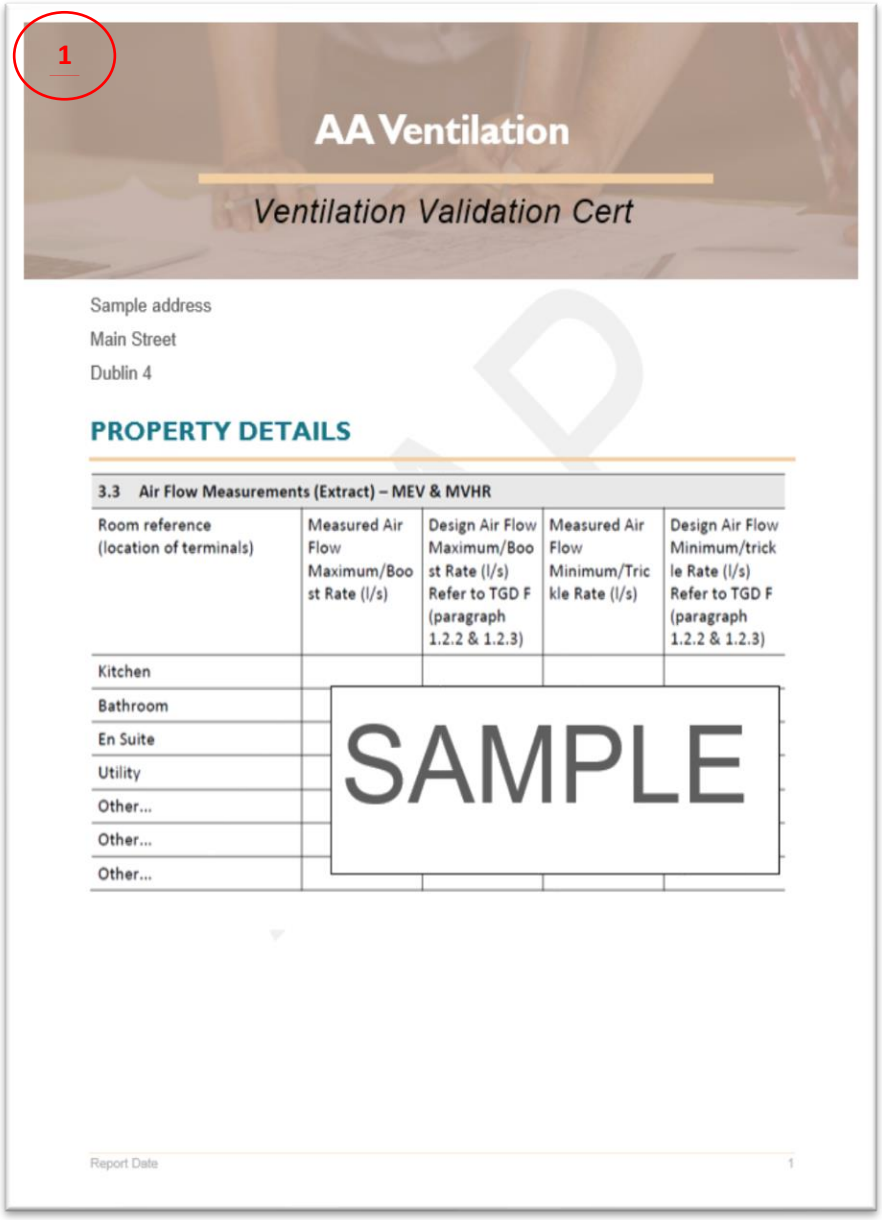


Fig 1

DCV2 & DCV3 - SYSTEM

Please provide evidence to demonstrate the following.

1. Wide angle photo of the Fan unit/centralised unit. See Fig 2 & 3

Fig 2

Fig 3

DCV4 - INLETS/OUTLETS

Please provide evidence to demonstrate the following.

1. Photo of wall inlets. See Fig 4 & 5

2. Photo of bathroom outlet with a PIR sensor. See Fig 6

3. Photo of standard outlet. See Fig 7

Fig 4

Fig 5

Fig 6

Fig 7

DCV6 - VENTILATION

Please provide evidence to demonstrate the following.

1. A chimney is visible from the elevation photos which suggest that there is an open flued appliance present in the property. See Fig 10

2. Photo of the,
   a. Appliance
   b. Permanent Ventilation
   See Fig 11

Fig 10

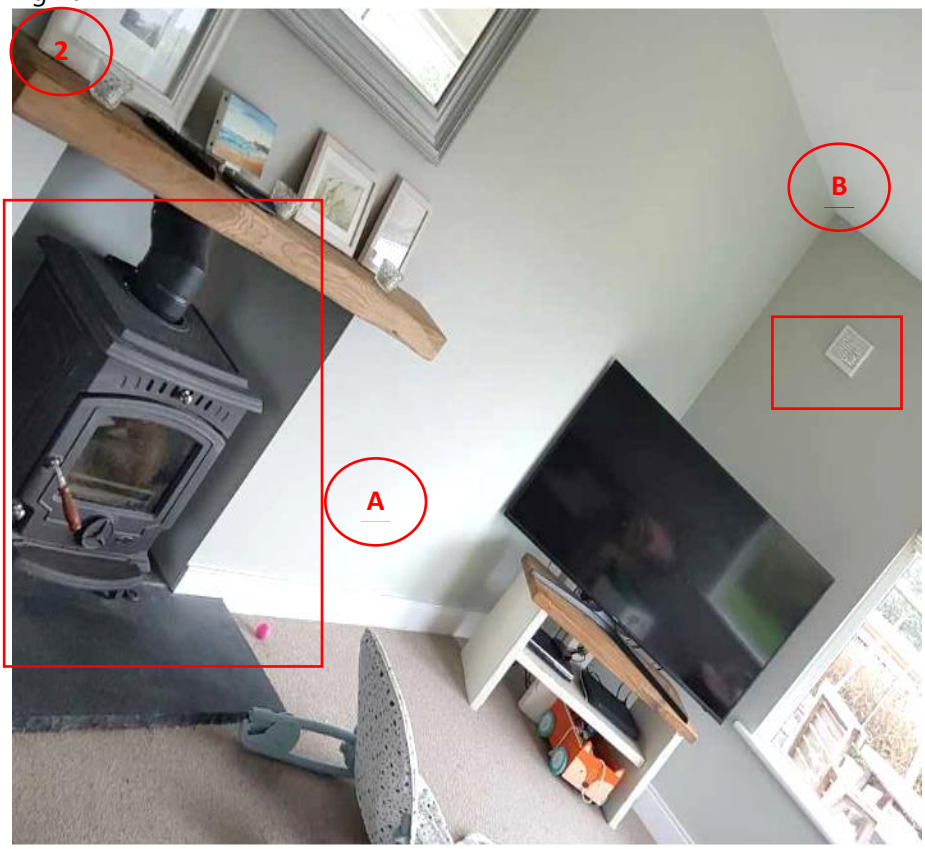


Fig 11

DCV7, DCV8 & DCV9 – FAN

Please provide evidence to demonstrate the following.

1. Photo capturing the following. See Fig 12 & 13
   a. fan unit.
   b. Ventilation pipework/ducting insulation.
   c. Photo capturing the fused spur.

Fig 12

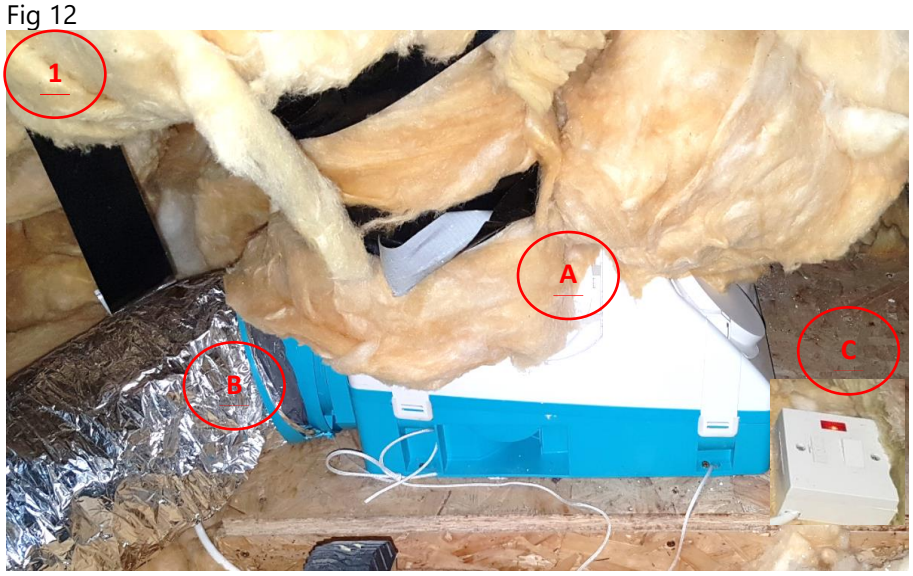


Fig 13

2. Photo of Fan unit data label. See Fig 14 & 15

Fig 14

Fig 15

Mechanical Heat Recovery Ventilation (MVHR)

The following is a guide of the photos that contractors should provide where MVHR has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
MVHR1	System	Insufficient ventilation	SEV 1	Documentation	Ventilation Validation Certificate (NSAI Registered Ventilation Validator) for works allocated after the 1st November 2019.
MVHR2	System	Evidence Not installed as per manufacturer's instructions	SEV 1	Document, photo	Fan unit(s) Distant photo of the Fan unit for centralised unit, Wet room outlet, Inlets.
MVHR4/ MVHR5	Inlets/Outlets	Evidence Inlets and outlets not fitted but required	SEV 1	Photo	Photos of all inlets and outlets.
MVHR6	VENTILATION	No permeant vent visible or evidence chimney is not connected to an open flued appliance	SEV 1	Photo	Photo of fireplace/appliance and/or corresponding vent. Photo of all external elevations.
MVHR7	Heat recovery unit	Evidence Spur not fitted/ Incorrect fuse fitted	SEV 1	Document, photo	Photo of the fan unit capturing; Close-up with data label, Surrounding area including ducting and spur.
MVHR8, MVHR10	Heat recovery unit	Evidence Incorrectly fitted/ not safely fitted No suitable access for maintenance	SEV 1	All Photos	All photos and documents above will be used to review these questions.
MVHR9	Heat recovery unit	Evidence Poorly sited (for safe electrical insolation, allow adequate cooling of air, minimise duct length)	SEV 1	Document, photo	
MVHR11	Ducting	Evidence Metallic duct does not earth bonded/ not to ETCI standards	SEV 1	Photo	
MVHR3	System	Evidence Not as per Scheme standard	SEV 1	Document, photo	
MVHR12	Condensate drain	Evidence Not adequately supported	SEV 1	Photo	

MVHR1 - SYSTEM

Please provide evidence to demonstrate the following.

1. Ventilation Validation Certificate (NSAI Registered Ventilation Validator) for works allocated after the 1st November 2019. See Fig 1

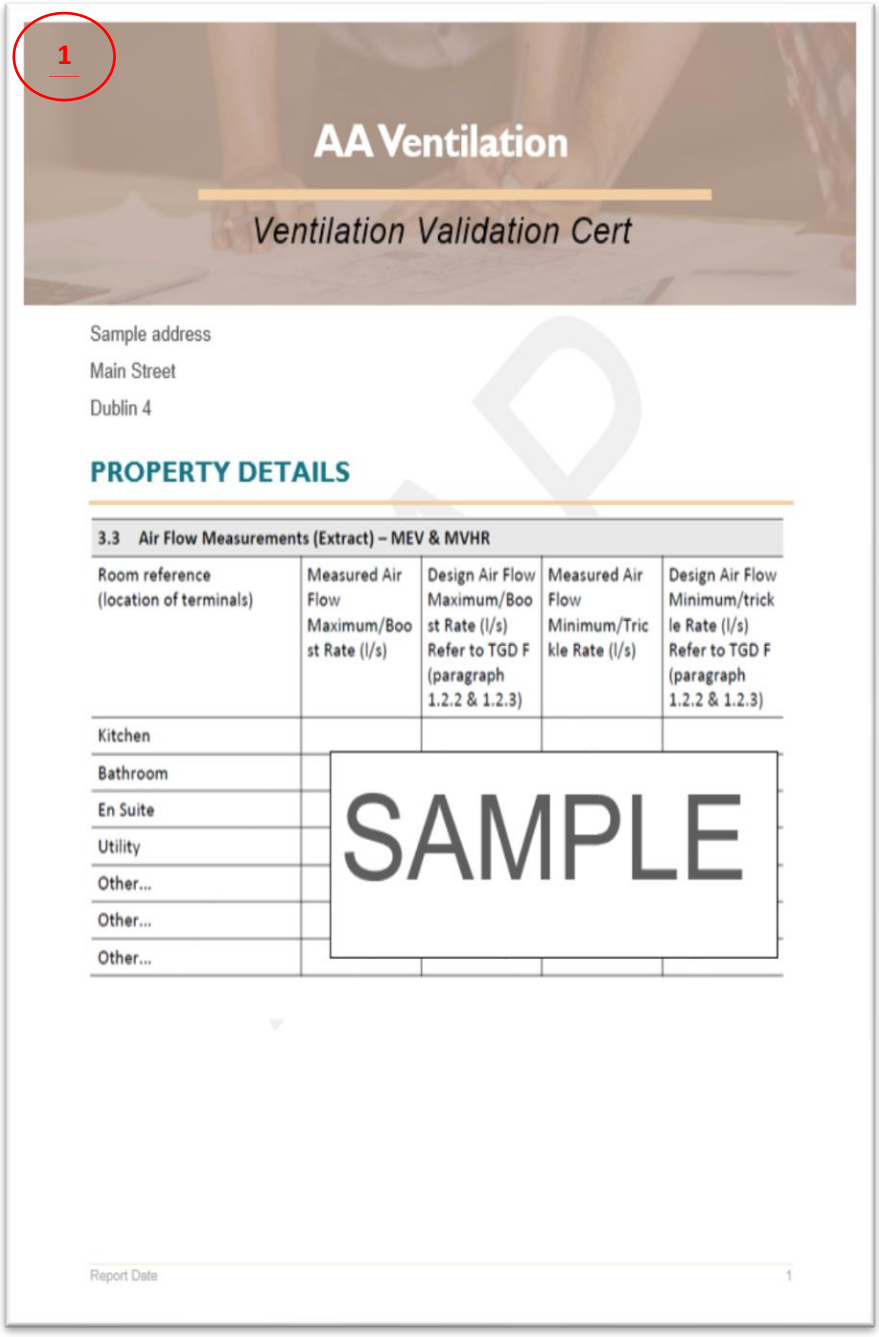


Fig 1

MVHR2 & MVHR3 - SYSTEM

Please provide evidence to demonstrate the following.

1. Wide angle photo of the fan/centralised unit. See fig 2, 3 & 4

Fig 2

Fig 3

Fig 4

MVHR4 & MVHR5 - INLETS/OUTLETS

Please provide evidence to demonstrate the following.

1. Photos of all inlets/Air supply defuser. See Fig 5

Fig 5

2. Photos of all outlets/extract air defuser. See Fig 6

Fig 19

MVHR 6 - VENTILATION

Please provide evidence to demonstrate the following.

1. A chimney is visible from the elevation photos which suggest that there is an open flued appliance present in the property. See Fig 7

2. Photo of the,

   a. Appliance
   b. Permanent ventilation See Fig 8

Fig 7

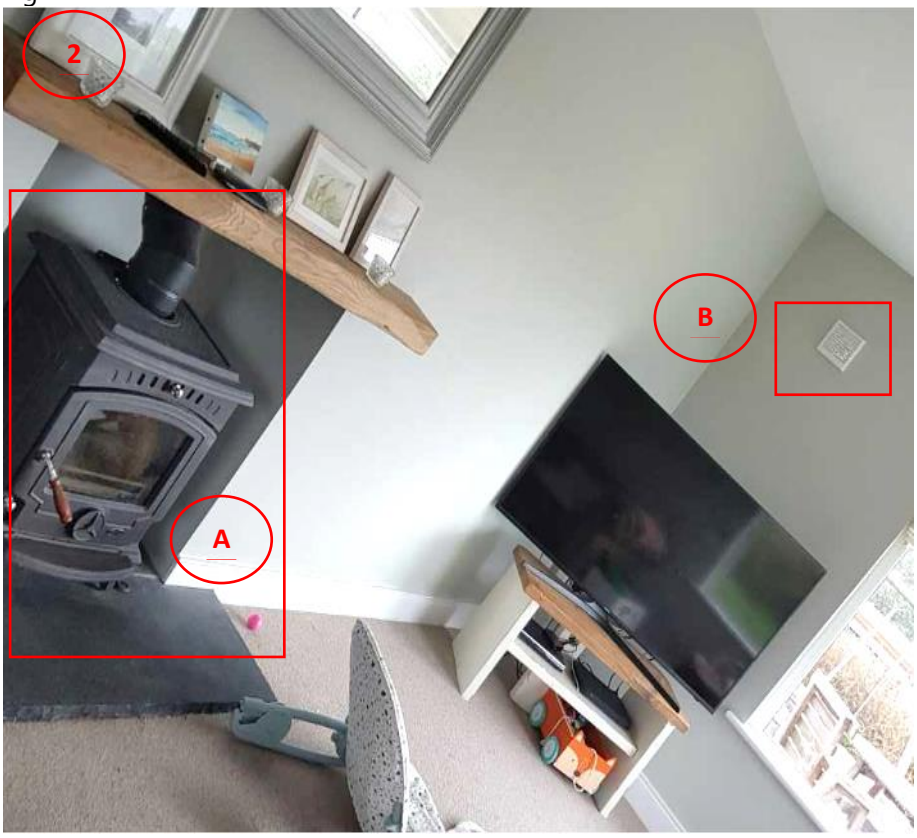


Fig 8

MVHR7, MVHR8, MVHR9 & MVHR10 - HEAT RECOVERY UNIT

Please provide evidence to demonstrate the following.

1. Photo capturing the following. See Fig 9
   a. fan unit
   b. Ventilation pipework/ducting insulation
   c. Photo capturing the fused spur

2. Photo of Fan unit data label. See Fig 10

Fig 20

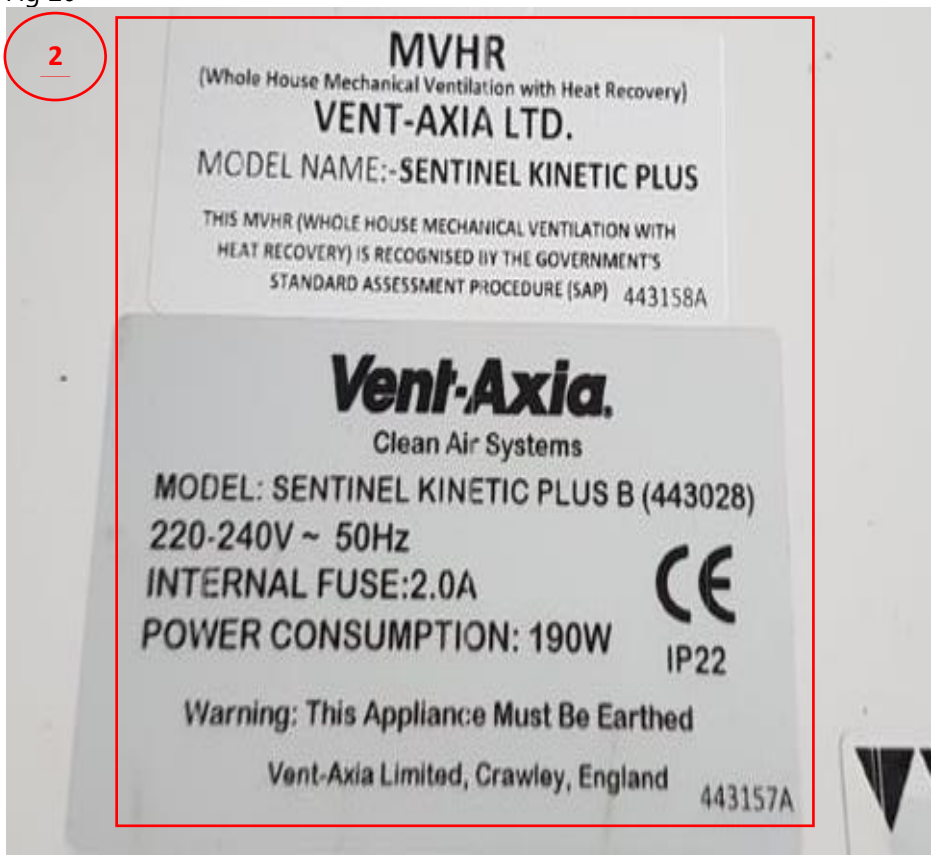


Fig 21

MVHR11 - DUCTING

Please provide evidence to demonstrate the following.

1. Wide angled photo of the following. See Fig 11
   a. main ducts run to manifold boxes.
   b. Insulated fresh air and extract ducts.

2. Photo of individual air supply and extract semi ridged ducts. See Fig 12

3. Photo of metallic ductwork with earth connection. See Fig 13

Fig 11

Fig 12

Fig 13

MVHR12 - CONDENSATE DRAIN

Please provide evidence to demonstrate the following.

1. Condensate connection at the unit run to an in-line waste trap. See Fig 14 & 15

2. Condensate drain terminal. See Fig 16

Fig 14

Fig 15

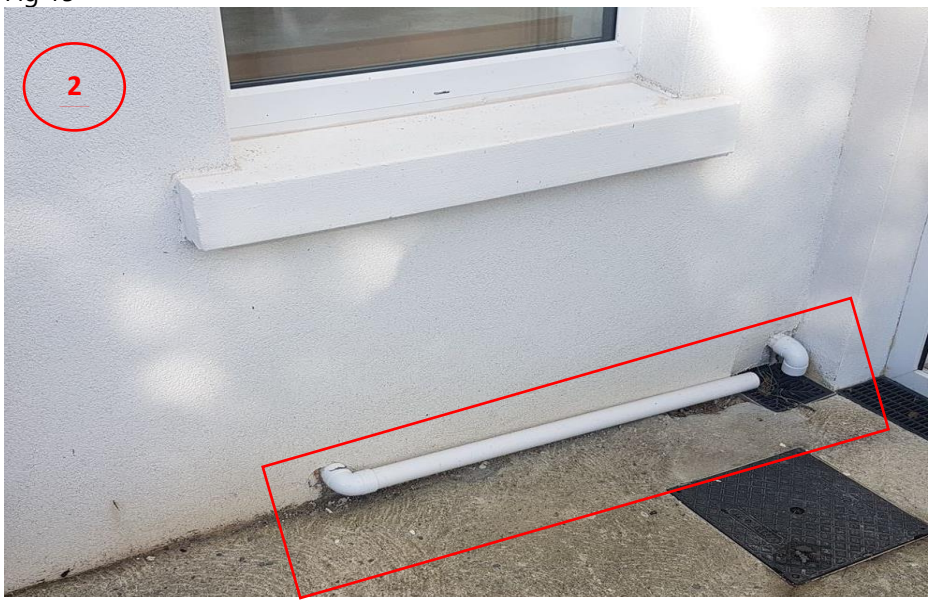


Fig 16

Solid Fuel Stove

The following is a guide of the photos that contractors should provide where solid fuel stove has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
C1	HEARTH	Not to scheme standard	SEV 1	Document, photo	Photo of stove capturing: Surrounding area, Data badge/plate, Hearth, Fire surround
D1	CARBON MONOXIDE DETECTOR	Not to scheme standard	SEV 1	Photo	Photo of alarm in room with appliance and alarm with in 0.5m of entrance to bedrooms.
E2	FLUE	Evidence Not fitted as per manufacturer's instructions/regulations	SEV 1	Document, photo	Data plate and terminal.
G1, G2	VENTILATION	Permanent ventilation not as per Building Regulations Part J and Evidence Permanent vent blocked	SEV 1	Document Photo	Photo of vent and datasheet.
Z2	INSTALATION AS PER SPECIFICATION	Evidence not as per Scheme Standard	SEV 1	Document, photo	All photos and documents above will be used to review these questions.

C1 - HEARTH

Please provide evidence to demonstrate the following.

1. Photo of stove, surrounding area and hearth. See Fig 1 & 2

Fig 1

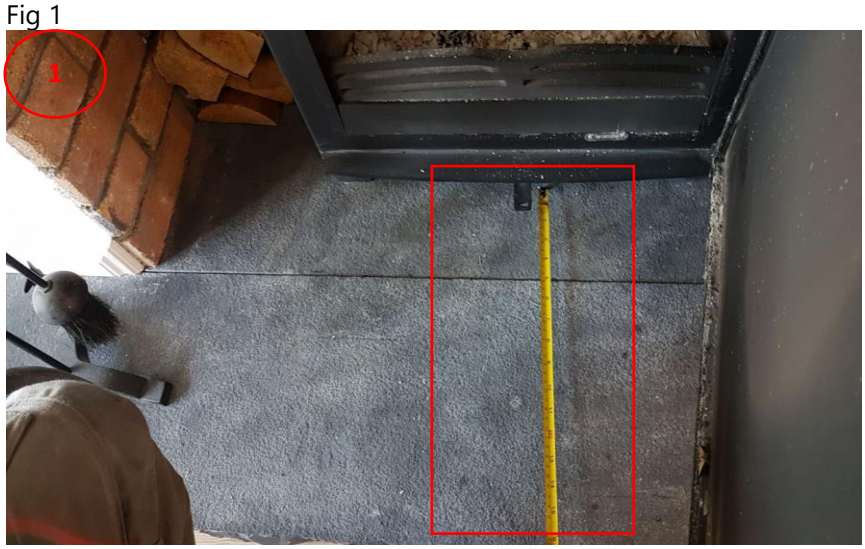


Fig 2

2. Photo of data plate/ badge. See Fig 3

Fig 3

D1 - CARBON MONOXIDE DETECTOR

Please provide evidence to demonstrate the following.

1. Photo of Carbon monoxide alarm in the room with the appliance. See Fig 4

Fig 4

2. Carbon monoxide alarm must be installed within 0.5m of bedrooms. See Fig 5&6 Please Note, this is a 3-storey home,

Fig 22

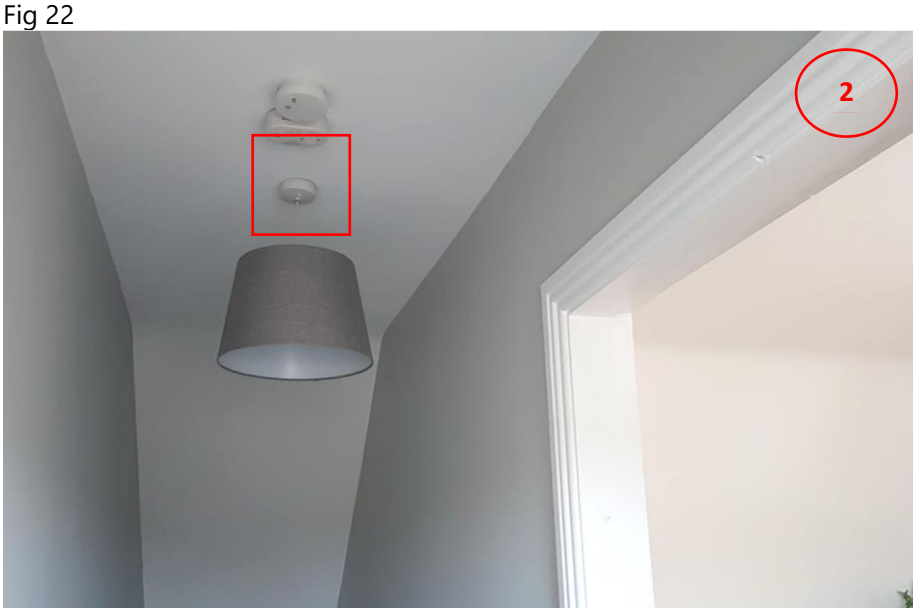


Fig 23

E2 - FLUE

Please provide evidence to demonstrate the following.

1. External Flue terminal. See Fig 7

2. Flue data plate installed. See Fig 8

Fig 7

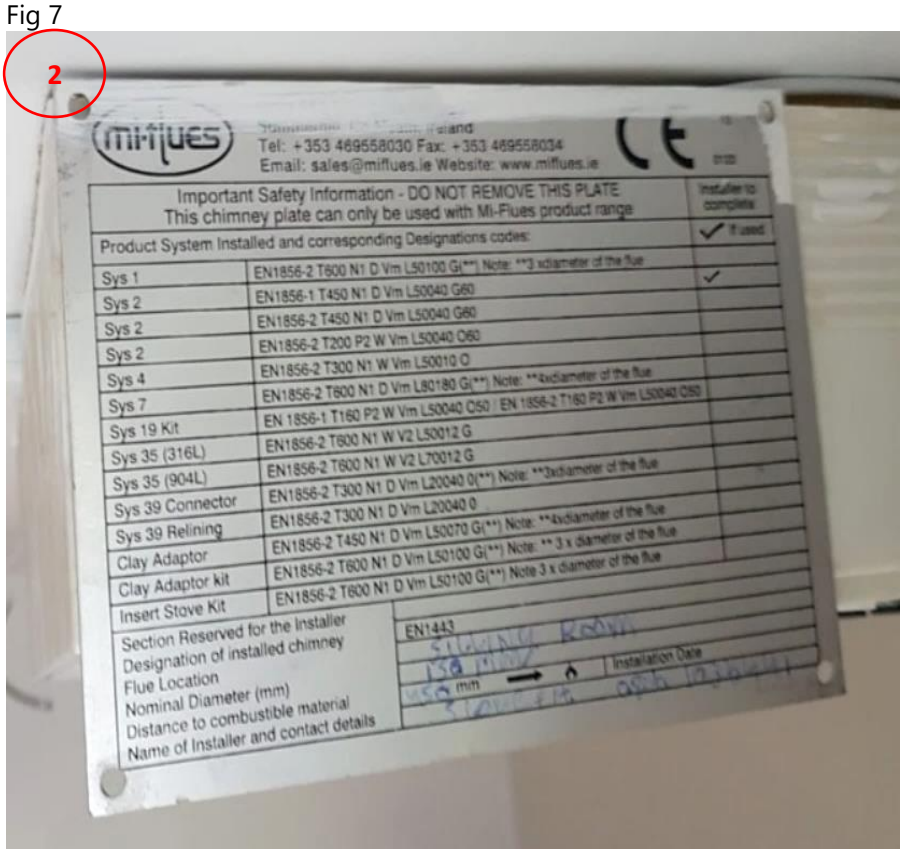


Fig 8

G1 & G2 - VENTILATION

Please provide evidence to demonstrate the following.

1. Photo of the appliance and the ppermanent vent. See Fig 9

2. External Vent terminal. See Fig 10

3. PDF copy of the certified proprietary ventilation kit installed. See Fig 11

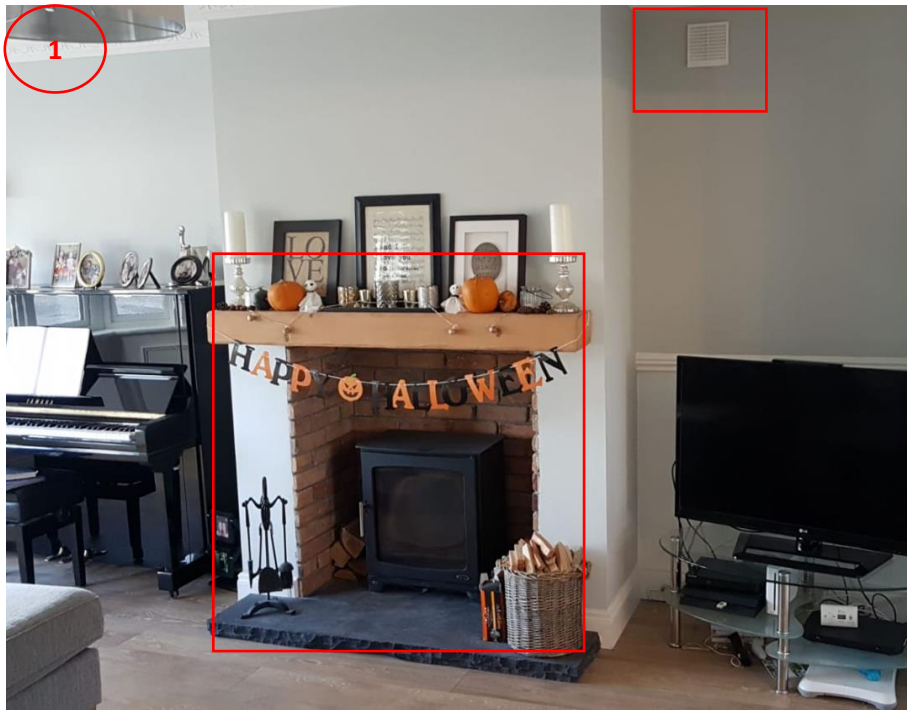


Fig 9

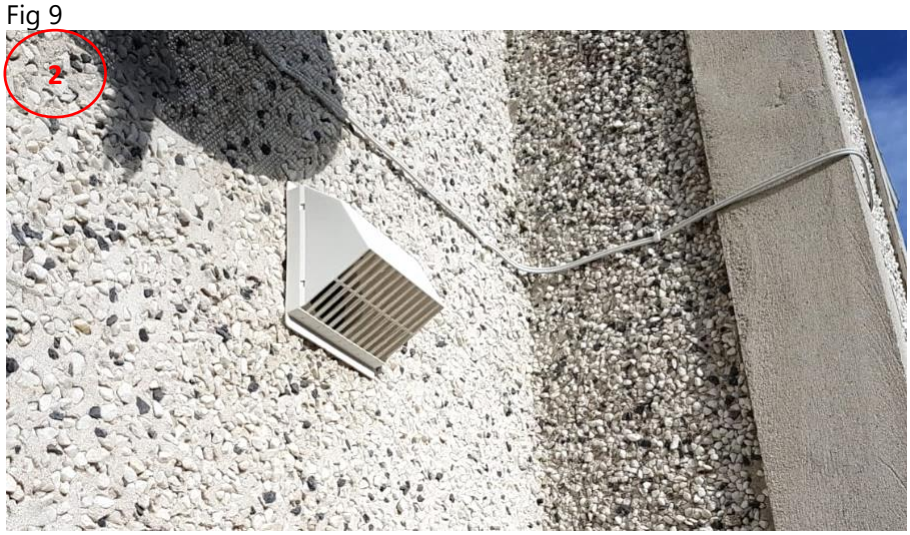


Fig 10

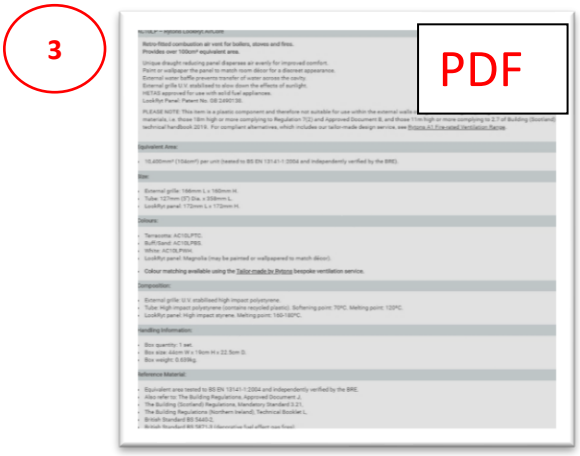


Fig 11

Lighting

The following is a guide of the photos that contractors should provide where Lighting has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
LG1	INSTALLATION OF LAMPS / LUMINAIRES	No new units appear to have been installed	SEV 1	Photo	Pre and post work photos.
LG2	INSTALLATION OF LIGHTING CONTROLS	No new controls appear to have been installed (where applicable)	SEV 1	Document, photo	Photo of smart meter/ occupancy controls /sensor / datasheet.
LG3	CE MARK	No evidence of CE mark	SEV 1	Photo	Photo of CE mark/product datasheet.
LG4	DECLARATION OF CONFORMITY	No evidence of Declaration of Conformity	SEV 1	Document	Copy of Declaration of conformity.
LG5	RECI/ETCI CERTIFICATE	No evidence of RECI/ETCI Certificate	SEV 1	Document	Copy of RECI/ETCI Certificate.

LG1 & LG2 - INSTALLATION OF LAMPS / LUMINAIRES

Please provide evidence to demonstrate the following.

1. Pre works photo. See Fig 1

2. Post works photo. See Fig 2

3. Product data sheet on the fittings installed this can be a PDF. See Fig 3

4. CE Marking on lighting fixtures. See Fig 4

Fig 1

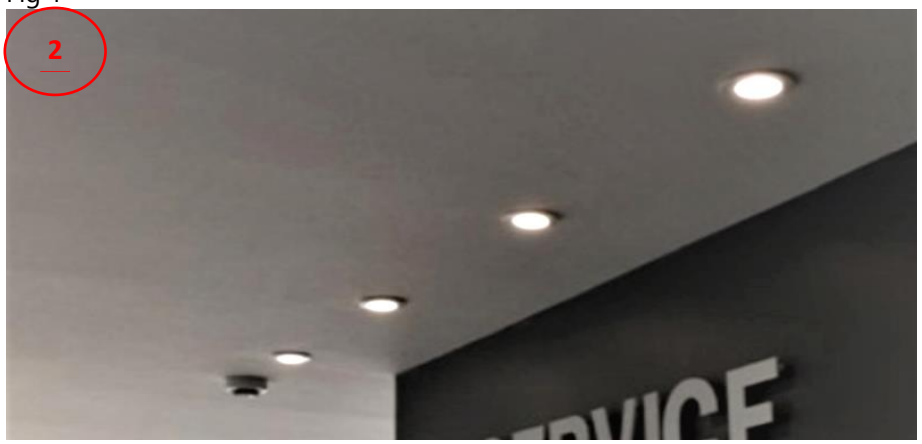


Fig 2

Fig 3

Fig 4

LG4 - DECLARATION OF CONFORMITY / LG5 - RECI/ETCI CERTIFICATE

Please provide evidence to demonstrate the following.

1. PDF of the Applicable RECI form. See Fig 5
2. ETCI Certificate/ declaration of conformity. See Fig 6

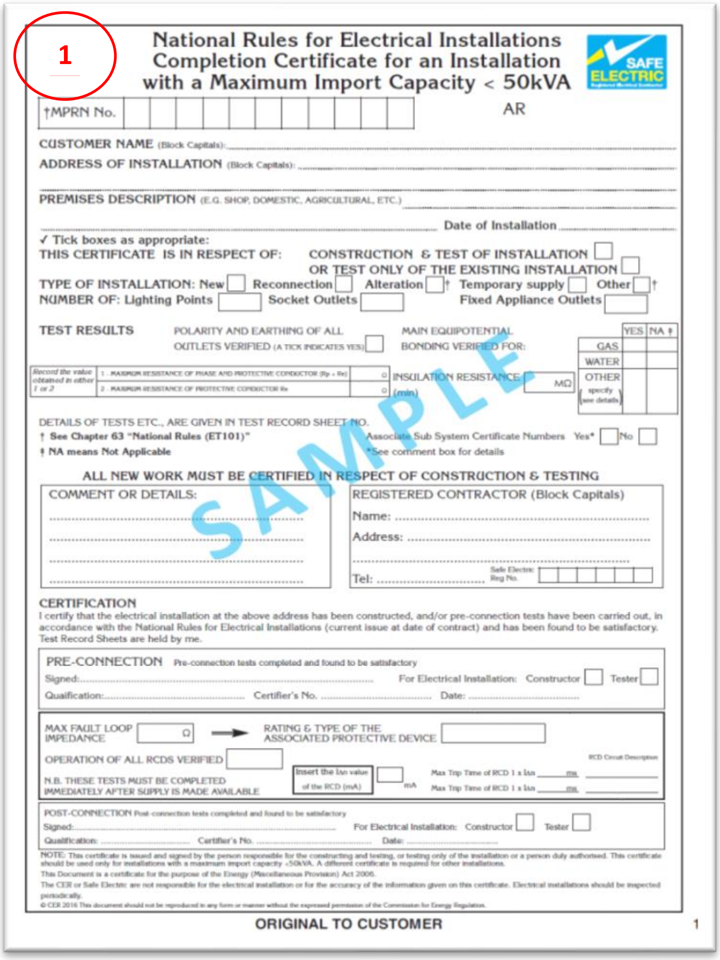

National Rules for Electrical Installations
Completion Certificate for an Installation
with a Maximum Import Capacity < 50kVA
†MPRN No.
CUSTOMER NAME (Block Capitals):
ADDRESS OF INSTALLATION (Block Capitals):
PREMISES DESCRIPTION (E.G. SHOP, DOMESTIC, AGRICULTURAL, ETC.)
Date of Installation
✓ Tick boxes as appropriate:
THIS CERTIFICATE IS IN RESPECT OF: CONSTRUCTION & TEST OF INSTALLATION
OR TEST ONLY OF THE EXISTING INSTALLATION
TYPE OF INSTALLATION: New Reconnection Alteration Temporary supply Other
NUMBER OF: Lighting Points Socket Outlets Fixed Appliance Outlets
TEST RESULTS
ALL NEW WORK MUST BE CERTIFIED IN RESPECT OF CONSTRUCTION & TESTING
COMMENT OR DETAILS:
REGISTERED CONTRACTOR (Block Capitals)
CERTIFICATION
PRE-CONNECTION
POST-CONNECTION
ORIGINAL TO CUSTOMER

Fig 5

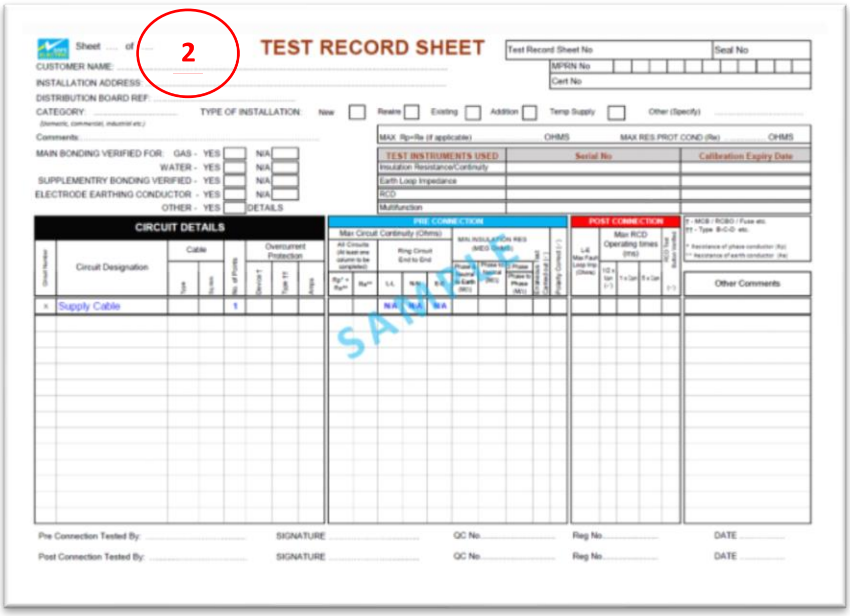

TEST RECORD SHEET
CUSTOMER NAME
INSTALLATION ADDRESS
DISTRIBUTION BOARD REF
CATEGORY
TYPE OF INSTALLATION
CIRCUIT DETAILS
PRE CONNECTION
POST CONNECTION
Pre Connection Tested By
Post Connection Tested By

Fig 6

Draught Proofing & CFL's

The following is a guide of the photos that contractors should provide where draught proofing and CFL's have been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
HD3	VENTILATION	No permeant vent visible or evidence chimney is not connected to an open flued appliance	SEV 1	Photo	Photo of fireplace/appliance and/or corresponding vent.
Z2	INSTALLATION AS PER SPECIFICATION	Not as per Scheme Standard	SEV 1	Photo	All photos will be used to review this question.

DRAUGHT PROOFING

Please provide evidence to demonstrate the following.

1. Internal doors both draught strip or tape is acceptable. See Fig 1
2. External doors, both draught strip or tape is acceptable. See Fig 2
3. Windows draught tap or strip. See Fig 3 & 4

Fig 1

Fig 2

Fig 3

Fig 4

DRAUGHT PROOFING HD3-VENTILATION

Please provide evidence to demonstrate the following.

1. A chimney is visible from the elevation photos which suggest that there is an open flued appliance present in the property. See fig 7.

2. Photo of the following. See Fig 6

   a. Appliance
   b. Permanent ventilation

Fig 5

Fig 6

CFL'S/ENERGY SAVING BULBS

Please provide evidence to demonstrate the following.

1. Evidence pre-install. See Fig 1 & 2

2. CE marking on bulbs. See Fig 3

3. Evidence post-install. See Fig 4 & 5

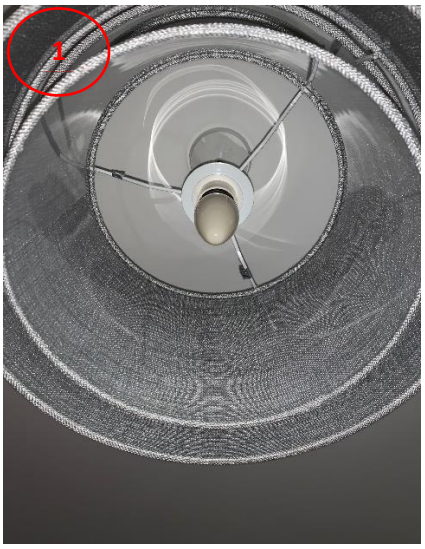


Fig 1

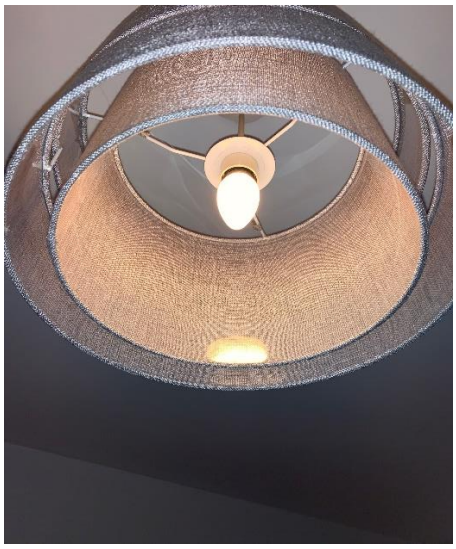


Fig 2

2

Fig 3

Fig 4

Fig 5

Solar PV

The following is a guide of the photos that contractors should provide where Solar PV has been installed.

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
N2	DOW Details	House built Pre 2011	SEV 1	Document	BER Cert.
N3	DOW Details	System components do not match documents provided	SEV 1	Document, photo	All photos will be used to review this question and documents.
A2	Inspection, test and commissioning report	PV Module does not match manufacturer, model type or data on document	SEV 1	Document, photo	Photo of panel data label DOW.
A3	Inspection, test and commissioning report	PV Module does not meet minimum efficiency	SEV 1	Document, photo	Photo of panel data label, DOW.
A5, A6	Inspection, test and commissioning report	Inverter does not match manufacturer, model type or data on document. Inverter does not meet minimum efficiency	SEV 1/	Document, photo	Photo of inverter data label, DOW.
A7	Inspection, test and commissioning report	Inverter does not meet system requirements	SEV 1	Document, photo	Photo of inverter data label, DOW.
A9	Inspection, test and commissioning report	Certificate numbers not matching with document	SEV 1	Document, photo	All photos will be used to review this question and documents.
A10	Inspection, test and commissioning report	Section incomplete	SEV 1	Document, photo	DOW.
A11	Inspection, test and commissioning report	System size or quantiles is incorrect	SEV	Document, photo	All photos will be used to review this question and documents.
E2	RECI Cert	Serial number doesn't match commissioning report	SEV 1	Document, photo	RECI cert and DOW.
E3	RECI Cert	Hazards Highlighted or no evidence of Hazard certificate issued where applicable	SEV 1	Document, photo	RECI cert and test cert.

F2	NC6 Form	Does not match information provided outputs etc.	SEV 1	Document, photo	Inverter data label and NC6 form.
G1A, G1B	Labelling	In/on consumer unit and all distribution boards. At breakers in consumer unit and sub-boards	SEV 1	Photo	Photo of consumer unit and distribution board(s).
G1C	Labelling	At/on inverter AC Isolator	SEV 1	Photo	Wide angle photo of inverter and AC isolator.
G1D	Labelling	At/on PV System DC Isolator	SEV 1	Photo	Photo of label at/on PV System DC Isolator.
G1E	Labelling	At/on battery AC or DC Isolator	SEV 1	Photo	Photo of label at/on battery AC or DC Isolator.
G1F	Labelling	On string inverters	SEV 1	Photo	Photo of label at/on string inverters.
G1G	Labelling	On automatic Isolator	SEV 1	Photo	Photo of label at/on automatic Isolator.
G1H	Labelling	At check meter	SEV 1	Photo	Photo of label at/on check meter.
H2, H4, H6	Mounting system as installed	Evidence array is not minimum 500mm from roof edge Evidence of no rail overhang to module and clamp Evidence of no end caps on mounting bar	SEV 1	Photo	Photo of array.
H5	Mounting system as installed	Evidence mounting frame not installed as per manufacturer's instructions / design	SEV 1	Photo	Photo of all mounting system pre-panel installation.
I2, I4	Array	Evidence of significant shading Evidence array not installed in optimum orientation	SEV 1	Photo/Eircode	All photos will be used to review this question and google maps.
I3	Array	Number of panels does not match the number declared on DOW	SEV 1	Photo	Photo of array.
I5, I6	Array	Modules do not meet the minimum peak output Evidence modules are not CE marked	SEV 1	Document, photo	Photo of panel data label.

J2	Inverter	Evidence inverter does not meet EN 62109	SEV 1	Document, photo	Photo of inverter data label
J3	Inverter	Evidence micro inverter not mounted right way up	SEV 1	Photo	Photo of micro inverter pre-panel installation.
J4	Inverter	String Inverter not mounted on fire resistant surface which extends minimum 150mm beyond edge of inverter	SEV 1	Photo	Wide angle photo of inverter.
J5	Inverter	AC power rating of Inverter is less than 75% of the Array kWp	SEV 1	Document, photo	Photo of inverter data label.
K1	Diverter	Evidence diverter is not commissioned	SEV 1	Photo	Photo of diverter with screen display on
K2	Diverter	Evidence diverter does not meet EN61000 standard	SEV 1	Photo	Photo of diverter
L2	AC & DC Electrical installation	No photographic evidence of AC or DC isolation	SEV 1	Photo	All photos will be used to review this question.
L3	AC & DC Electrical installation	Evidence installation not connected to dedicated circuit	SEV 1	Photo	All photos will be used to review this question.
M2	Battery Energy Storage System	Poor location	SEV 1	Photo	Wide angle photo of batteries installed.
M3, M4	Battery Energy Storage System	Evidence battery not in separate fire compartment. Evidence battery not securely fixed / not in suitable enclosure	SEV 1	Photo	Wide angle photo of batteries installed.
M5	Battery Energy Storage System	AC Battery storage system does not comply with EN 50438 Irish settings	SEV 1	Photo	Battery data label.
M6	Battery Energy Storage System	System not mounted on a fireproof surface extending 150mm beyond the edge of the battery storage system.	SEV 1	Photo	Wide angle photo of batteries installed.

N2,N3 A2, A3, A5, A6, A7, A9, A10, A10- DECLARATION OF WORKS DETAILS, INSPECTION, TEST AND COMMISSIONING

Please provide evidence to demonstrate the following.

1. Completed declaration of works details. See Fig 1 & 2

Part 1 – Declaration of Works

Installation Details:

Applicant Name*	
Installation Address	
Installation Eircode	
Installation MPRN	

**This will be the person claiming the SEAI grant*

System Details

Solar PV System Size	kWp*	Battery Storage (if applicable)	kW kWh
Solar PV System Annual Estimated Yield	kWh**	Method of Yield Calculation (e.g. PVSyst)	
Hot Water Diverter Installed?	Y/N?		

** Total DC Installed Capacity at STC – (Nameplate Capacity, NOT Flash Test)*
*** AC kWh based on estimated calculation*

Solar PV Registered Company (MUST BE ON THE SEAI SOLAR PV **COMPANY** REGISTER)

Company name	
Company Identification Number	

Registered Electrical Contractor Details (REC WHO COMPLETED THE SAFE ELECTRIC FORM)

REC Safe Electric Identification Number	
REC Name	
Safe Electric Certificate Serial Number	
Safe Electric Certificate Date	

ESB Networks NC6 Form Submission Date	

Property year of Construction (see BER Cert)	
Total cost of installation (including VAT)	€

Fig 1

System Components

Component	Make	Model	Rating	Quantity
Solar PV Modules			Wp at STC	
Mounting System			N/A	
Inverter			kW	
Energy Meter			N/A	
Battery Energy Storage System		DC Connected ☐ AC Connected ☐	kW kWh	

Installer Details (MUST BE ON THE SEAI SOLAR PV **INSTALLER** REGISTER)

Installer name	
Installer Identification Number	

By signing this Declaration of Works, the undersigned declares that;

- The Solar PV system (and, if applicable, battery system) has been installed and commissioning at the above Installation Address on the Date of Works Completion
- All works indicated are fully compliant with SEAI Domestic Solar Photovoltaic - Code of Practice for Installers, SEAI Renewable Installer Register Terms and Conditions and SEAI Solar PV Installer Register Terms and Conditions.
- The electrical installation has been installed in accordance with ET101:2008 and a Safe Electric certificate ('RECI cert') has been issued by a Registered Electrical Contractor for the electrical installation
- I have been paid in full or an agreed payment schedule contract is in place by the homeowner for the works described.
- I have completed an Inspection, Test and Commissioning Report for this solar installation and have given it to the homeowner
- I have provided the homeowner with the required documentation to complete their claim application

Registered Installer Signed		**Date**	

Fig 2

A2, A3, A5, A6, A7, A9, A10, A10- INSPECTION, TEST AND COMMISSIONING REPORT.

Please provide evidence to demonstrate the following.

1. Completed inspection test and commissioning certificate. See Fig 1

1

Part 2 – Inspection, Test and Commissioning Report

Test Report for grid-connected photovoltaic systems
according to EN 62446, Annex A

Customer:
Customer Name: _____
Customer Address: _____
Customer Eircode: _____

Installation Contractor:
Company Name: _____
Company Representative: _____
Company Address: _____

PB System Description:
PV Module:
Manufacturer: _____ Module Type: _____
PV Module Performance: _____ Number of Modules: _____
Short Circuit Current Isc (A): _____ MPP Current (A): _____
Open Circuit Voltage Voc (V): _____ MPP Voltage (V): _____

PV Inverters:
Manufacturer: _____ Inverter Type: _____
AC Nominal Power (W): _____ Inverter Quantity: _____
AC Maximum Power (W): _____ DC Maximum Power (W): _____

Test Date: _____ Test Reason: ☐ Initial inspection
Next Test Date: _____ ☐ Retesting

Electrical Certs:
Safe Electric Cert Number: _____ Test Record Sheet Cert Number: _____

DC Test Results:
RE: _____ Loop: _____ RCDx1: _____ RCDxS: _____

Design, construction, inspection and testing
I/we, the responsible person(s) for the design, construction, inspection and testing of the electrical system (as specified by the signature(s)), details of which are described above, have inspected and tested the design and structure with suitable skill and care and confirm that the said words, for which I/we am/are responsible, were carried out to the best of our knowledge and expertise.

Test Result:

☐ No defects were found ☐ Defects were found

☐ The Photovoltaic system complies with the standards of electrical engineering

Signature/Tester: _____ Date: _____

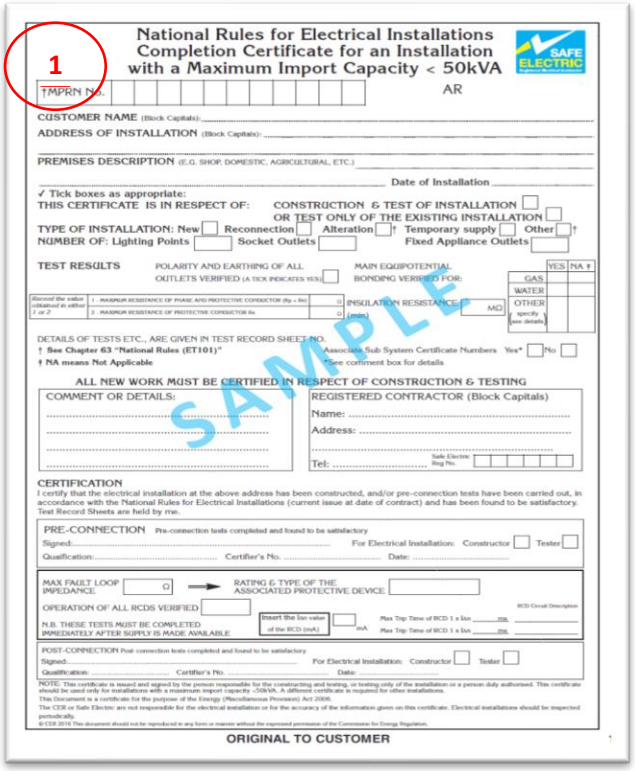
Fig 1

E2,E3. F2 - RECI CERT & NC6 FORM

Please provide evidence to demonstrate the following.

1. Completed Reci form. See fig 3

2. Completed N6 form. See fig 4



National Rules for Electrical Installations
Completion Certificate for an Installation
with a Maximum Import Capacity < 50kVA

1

TMPRN No.

CUSTOMER NAME (Block Capitals):

ADDRESS OF INSTALLATION (Block Capitals):

PREMISES DESCRIPTION (E.G. SHOP, DOMESTIC, AGRICULTURAL, ETC.)

Date of Installation

✓ Tick boxes as appropriate:
THIS CERTIFICATE IS IN RESPECT OF: CONSTRUCTION & TEST OF INSTALLATION / OR TEST ONLY OF THE EXISTING INSTALLATION
TYPE OF INSTALLATION: New / Reconnection / Alteration † / Temporary supply / Other †
NUMBER OF: Lighting Points / Socket Outlets / Fixed Appliance Outlets

TEST RESULTS — POLARITY AND EARTHING OF ALL OUTLETS VERIFIED / MAIN EQUIPOTENTIAL BONDING VERIFIED FOR: GAS, WATER, OTHER

INSULATION RESISTANCE MΩ

DETAILS OF TESTS ETC., ARE GIVEN IN TEST RECORD SHEET NO.
† See Chapter 63 "National Rules (ET101)"
† NA means Not Applicable
Associated Sub System Certificate Numbers Yes* / No
*See comment box for details

ALL NEW WORK MUST BE CERTIFIED IN RESPECT OF CONSTRUCTION & TESTING

COMMENT OR DETAILS:

REGISTERED CONTRACTOR (Block Capitals)
Name:
Address:
Tel:

CERTIFICATION
I certify that the electrical installation at the above address has been constructed, and/or pre-connection tests have been carried out, in accordance with the National Rules for Electrical Installations (current issue at date of contract) and has been found to be satisfactory. Test Record Sheets are held by me.

PRE-CONNECTION Pre-connection tests completed and found to be satisfactory
Signed: For Electrical Installation: Constructor / Tester
Qualification: Certifier's No. Date:

MAX FAULT LOOP IMPEDANCE Ω → RATING & TYPE OF THE ASSOCIATED PROTECTIVE DEVICE
OPERATION OF ALL RCDS VERIFIED
N.B. THESE TESTS MUST BE COMPLETED IMMEDIATELY AFTER SUPPLY IS MADE AVAILABLE
Insert the I∆n value of the RCD (mA) mA

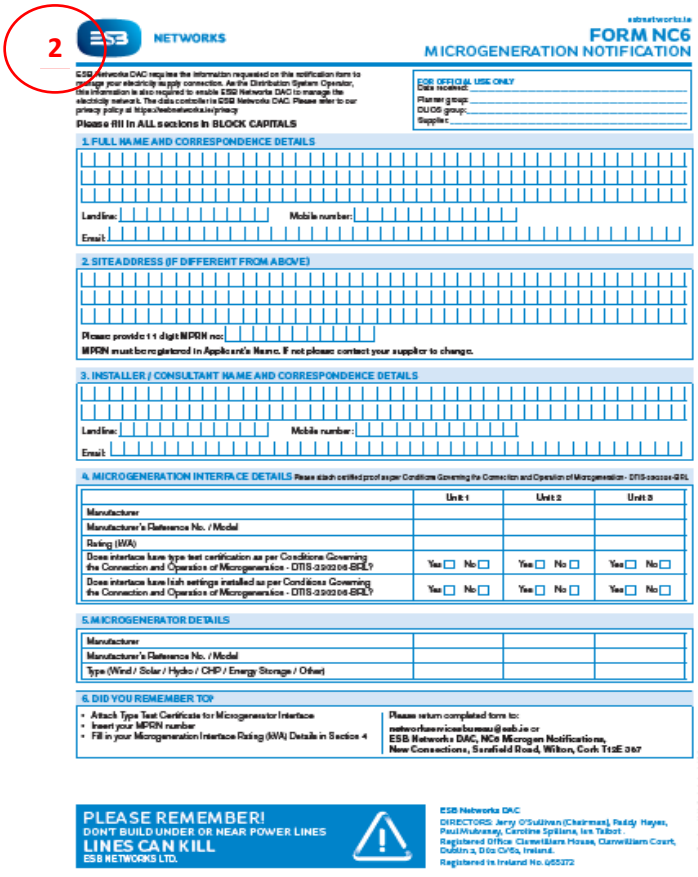
POST-CONNECTION Post connection tests completed and found to be satisfactory
Signed: For Electrical Installation: Constructor / Tester
Qualification: Certifier's No. Date:

NOTE: This certificate is issued and signed by the person responsible for the constructing and testing, or testing only of the installation or a person duly authorised. This certificate should be used only for installations with a maximum import capacity <50kVA. A different certificate is required for other installations.
This Document is a certificate for the purpose of the Energy (Miscellaneous Provision) Act 2006.
The CER or Safe Electric are not responsible for the electrical installation or for the accuracy of the information given on this certificate. Electrical installations should be inspected periodically.
© CER 2016 This document should not be reproduced in any form or manner without the expressed permission of the Commission for Energy Regulation.

ORIGINAL TO CUSTOMER

SAMPLE

Fig 3



2

ESB NETWORKS

FORM NC6
MICROGENERATION NOTIFICATION

ESB Networks DAC requires the information requested on this notification form to manage your electricity supply connection. As the Distribution System Operator, this information is also required to enable ESB Networks DAC to manage the electricity network. The data controller is ESB Networks DAC. Please refer to our privacy policy at https://esbnetworks.ie/privacy

Please fill in ALL sections in BLOCK CAPITALS

FOR OFFICIAL USE ONLY
Date received:
Planner group:
DUOS group:
Supplier:

1. FULL NAME AND CORRESPONDENCE DETAILS
Landline: Mobile number:
Email:

2. SITE ADDRESS (IF DIFFERENT FROM ABOVE)
Please provide 11 digit MPRN no:
MPRN must be registered in Applicant's Name. If not please contact your supplier to change.

3. INSTALLER / CONSULTANT NAME AND CORRESPONDENCE DETAILS
Landline: Mobile number:
Email:

4. MICROGENERATION INTERFACE DETAILS Please attach certified proof as per Conditions Governing the Connection and Operation of Microgeneration - DTIS-230206-BRL

	Unit 1	Unit 2	Unit 3
Manufacturer			
Manufacturer's Reference No. / Model			
Rating (kVA)			
Does interface have type test certification as per Conditions Governing the Connection and Operation of Microgeneration - DTIS-230206-BRL?	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
Does interface have Irish settings installed as per Conditions Governing the Connection and Operation of Microgeneration - DTIS-230206-BRL?	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

5. MICROGENERATOR DETAILS

Manufacturer			
Manufacturer's Reference No. / Model			
Type (Wind / Solar / Hydro / CHP / Energy Storage / Other)			

6. DID YOU REMEMBER TO?
- Attach Type Test Certificate for Microgenerator Interface
- Insert your MPRN number
- Fill in your Microgeneration Interface Rating (kVA) Details in Section 4

Please return completed form to:
networkservicesbureau@esb.ie or
ESB Networks DAC, NCn Microgen Notifications,
New Connections, Snafield Road, Wilton, Cork T12E 3W7

PLEASE REMEMBER!
DONT BUILD UNDER OR NEAR POWER LINES
LINES CAN KILL
ESB NETWORKS LTD.

ESB Networks DAC
DIRECTORS: Jerry O'Sullivan (Chairman), Paddy Hayes, Paul Mulvaney, Caroline Spillane, Ian Talbot.
Registered Office: Clanwilliam House, Clanwilliam Court, Dublin 2, D02 CV63, Ireland.
Registered in Ireland No. 660372

Fig 4

SOLAR PANEL INSTALLATION AND SOLAR PANEL DETAILS

Please provide evidence to demonstrate the following.

1. Ensure system size matches the DOW, please provide the following. See Fig 1

   a) Panel type.
   b) Panel size.
   c) CE Mark.

2. Photo of the full panel array. See Fig 2
   a. A clear wide-angle photo of all the panels.
   b. The photo must show if the system has end caps (b), is in an appropriate location (Shading not avoided, rail overhang and distance from the roof edge) and its positioning in relation to the house (will be used to verify optimal orientation on google maps).

Fig 1

Fig 2

SOLAR PANEL INSTALLATION AND SOLAR PANEL DETAILS

Please provide evidence to demonstrate the following.

1. A clear photo of the rails and brackets preinstall. See Fig 3

Fig 3

2. A clear photo of the data label. See Fig 4

   a. Manufacturer, Mode,
   b. Inverter size
   c. CE Mark.

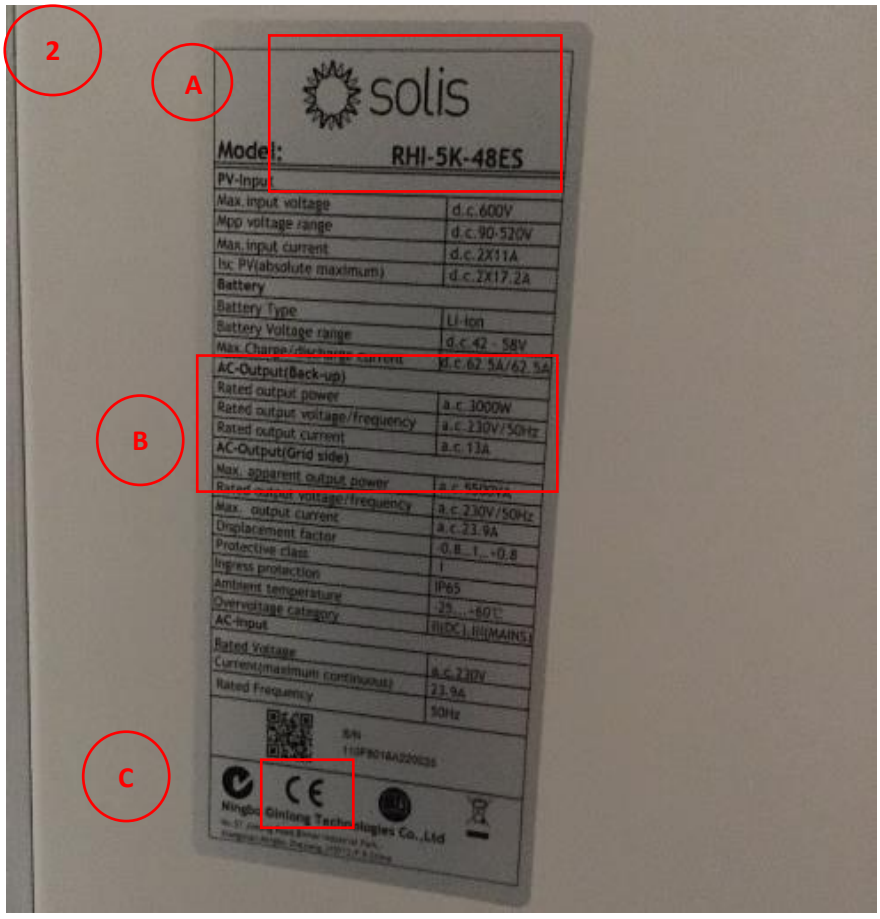


Fig 4

INVERTER AND SHUNT

Please provide evidence to demonstrate the following.

1. A clear wide-angle photo of the inverter showing the location and the surrounding area. See Fig 5
    a. Warning labels.
    b. The display.
    c. The DC/AC isolators
    d. In the case of micro – inverters this would be separate photo) all with appropriate labelling.

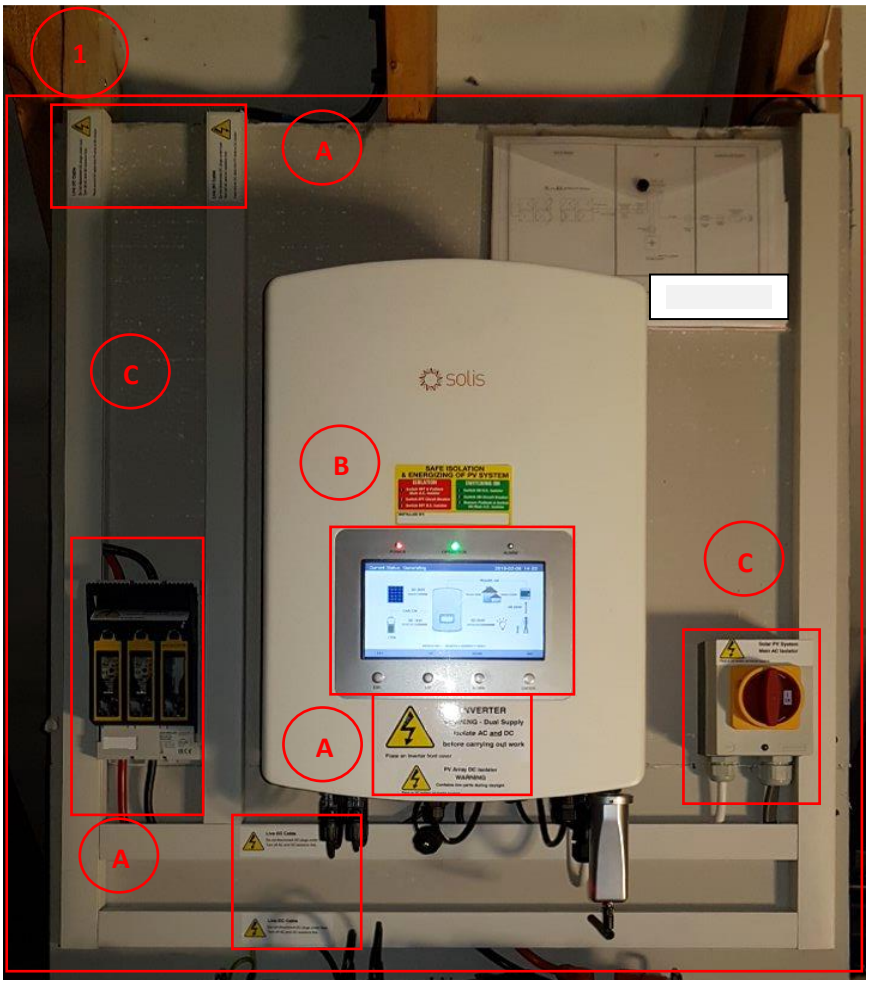


Fig 5

2. A clear photo showing the Shunt and surrounding area. See Fig 6
    a. Where it is mounted, its position in relation to entry to the building for roof mounts and in relation to the panels for ground mounts
    b. Appropriate labelling.

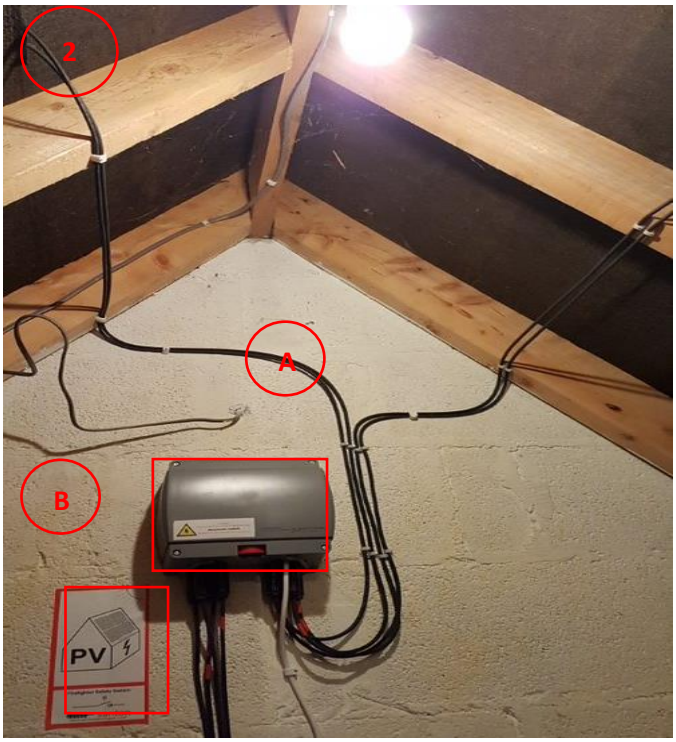


Fig 6

BATTERIES

Please provide evidence to demonstrate the following.

1. In cases where batteries are being claimed a clear photo of the following. See Fig 7
    a. Manufacturer
    b. Battery model and capacity
    c. CE Mark

2. A clear wide-angle photo of the battery installed showing the location and the surrounding area. See Fig 8
    a. Appropriate warning labels.
    b. Batteries are earthed and isolation is present

Fig 7

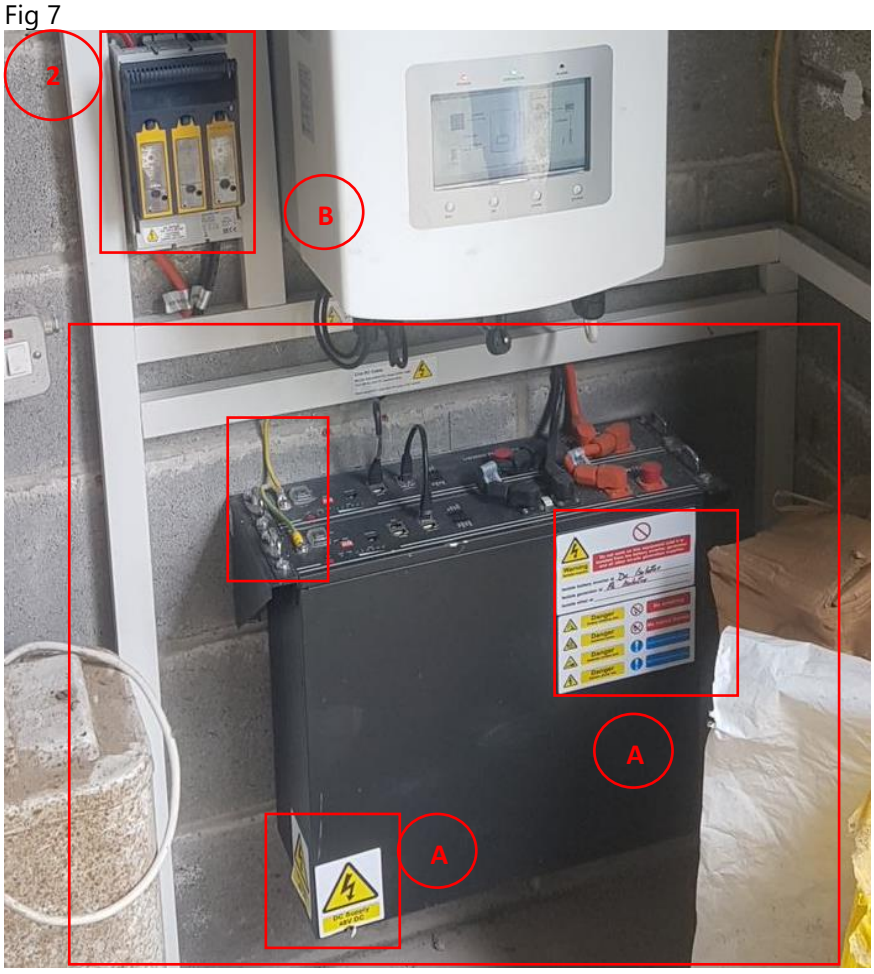


Fig 8

G1A, G1B- DIVERTER, CHECK METER AND CONSUMER UNIT

Please provide evidence to demonstrate the following.

1. In cases where a diverter is installed. See Fig 9
   a. Diverter manufacturer and model.
   b. The display.

2. A clear photo of the consumer unit and if applicable photo of the separate metering device on the AC side of the inverter/Check meter. See Fig 10 & 11
   a. Appropriate labelling in all cases

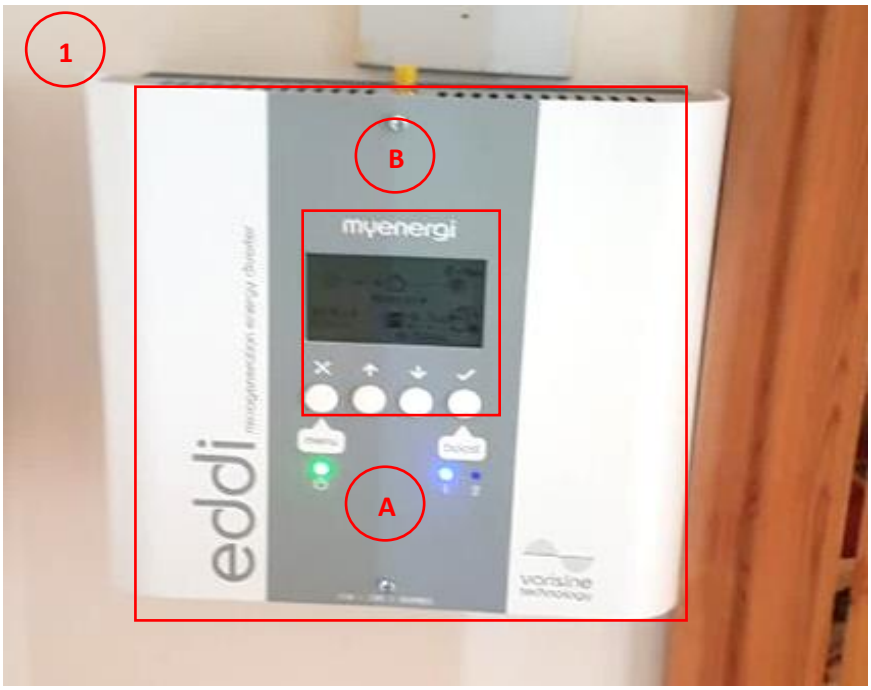


Fig 10

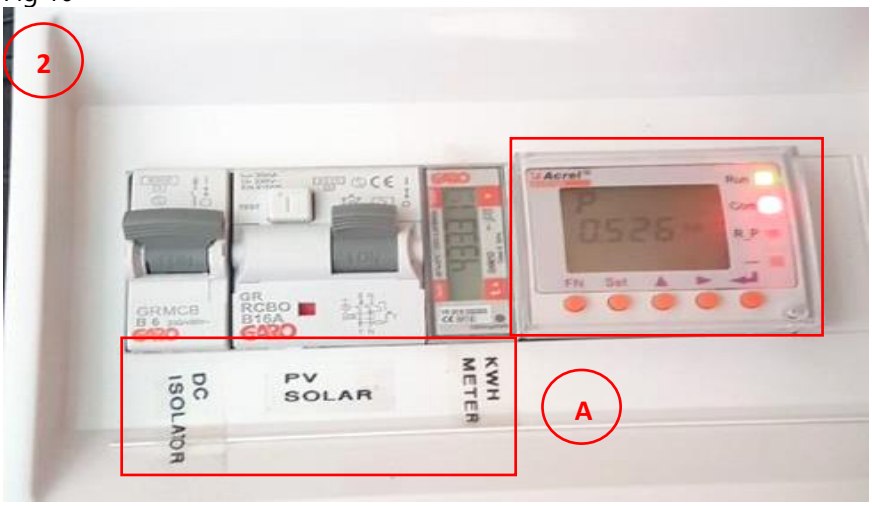


Fig 10

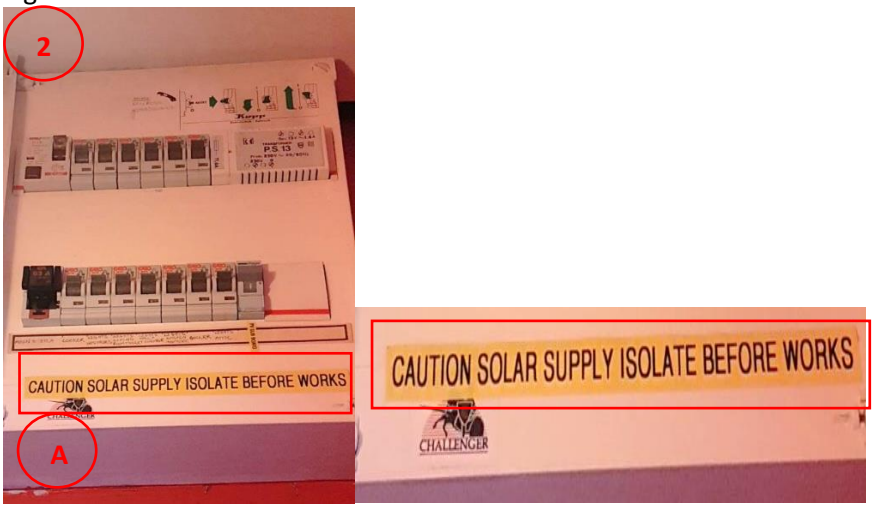


Fig 11

Heat Pump

The following is a guide of the photos that contractors should provide for the following heat pump types:

- AW - Air to Water
- GW - Ground to Water (horizontal and Vertical)
- WW - Water to Water
- AA - Air to Air
- EAW - Exhaust Air to Water

Checklist Code	Measure Sub-heading	Description	Severity	Evidence Source	What certificate, document / photo is required?
HP1, SD1, HP2, SD2	System Details	Does not have ability to provide 100% space heating	SEV 1	Document	Radiator schedule from the room by room calculations.
HP5, SD5, HP7, SD7	System Details	Unit less than required unit efficiencies and or No data plate/CE mark (outdoor and indoor unit)	SEV 1	Photo	Photo of data plate for outdoor unit and indoor unit where applicable.
OU1, OU3, OU5, OU6	Outdoor unit	Site incorrectly - Evidence that it is not as per manufacturer's instructions. The Unit mounted on an unstable structure and Evidence unit, unstable, poorly fixed to ground. Fixing - Evidence that unit poorly fixed to wall. Electrical supply not isolated by Rotary switch.	SEV 1	Photo	Photo of the outdoor unit capturing: Data label surrounding area Condense outlet Pipework Pipe insulation Electrical Isolator Bracketing system Safety valve where applicable No obstructions to airflow
RP4	Refrigerant Pipework	No pipe Insulation present	SEV 1	Photo	Broad photo of refrigerant pipes capturing; Insulation, Bracketing
CH1, CO1, CH2, CO2, CH3, CO3 CH4, CO4	Commissioning and Handover	Commissioning documents, RECI, F-Gas Certificates not available / correct.	SEV 1	Document, photo	PDF documents to be uploaded, Commissioning RECI certificate, F-Gas Certificate.

CH8, CH9, CO9	Commissioning and Handover	No facility to support legionella prevention	SEV 1	Document, photo	Manufacturers datasheets, manual and photo of indoor unit
WP2	Water Pipework	No pipe Insulation in unheated space or outdoors	SEV 1	Photo	Photo of indoor unit, outdoor unit and surrounding pipework.
WP5	Water Pipework	Evidence Pressure relief valve not pipped to safe and visible area	SEV 1	Document, photo	Photo of the safety valve and pipework terminal.
E1, EL1, E6, EL6	Electrical	Earthing / bonding not to required standards Mains not isolated by Rotary switch	SEV 1	Photo	Photos of indoor unit, outdoor unit/hot water cylinder and associated pipework. Photo of the rotary switch
CP1	Condensate Pipework	Condensate discharge potential safety issue	SEV 1	Photo	Photo of the outdoor unit capturing: surrounding area Condense outlet Condense termination
RS5	Room Stat / Sensors	No room stat fitted where applicable	SEV 1	Photo	Photo of room thermostat(s)
IH4, HT4, IT4	Immersion Heater Timer	Unsuitable immersion timer fitted	SEV 1	Document, photo	Document, photo of the indoor unit datasheet/ immersion timer /Programmer/Inbuilt controller.
HW1, TI1	Hot Water Tank Insulation	Cylinder insulation not in place	SEV 1	Document, photo	Document, photo of the hot water cylinder/indoor unit datasheet.
SP2, SH2	Space Heating	Evidence Installed heat emitters not as designed	SEV 1	Photo	Photo of radiators per zone and rad schedule.
PC1, PI1, IC1	Programmer/ Inbuilt Controller	Non fitted	SEV 1	photo	Photo Programmer/Inbuilt controller.
SH1, WZ1, SH2, WZ2	Space and Hot Zones	No separate Hot Water. No separate Space Heating	SEV 1	Photo	Photos of programmer, zone valves and hot water cylinder with associated pipework.
AA IU1, AA IU3	Air to Air systems Indoor Unit	Evidence not as per manufacturer's instruction. Evidence Indoor unit insecurely fixed	SEV 1	Document, photo	Photo of the indoor unit, surrounding pipework and datasheet.
SM1, SIM1	Split Indoor Model	Evidence Model inaccessible	SEV 1	Document, photo	Wide angle photo of the indoor unit
WW CS3	Cylinder Stat/Sensor	Poor location	SEV 1	Document, photo	Photo of the indoor unit & data sheet/ hot water cylinder with stat

EAW PD1, EAW PD2	Exhaust Air Heat Pump Ductwork	Evidence not fitted but required. Evidence No duct lagging present in unheated space	SEV 1	Document, photo	Photo of the fan unit capturing Close up with data label Surrounding area including ducting and spur
HP2	System Details	Not to scheme requirements (High Risk)	SEV 1	Document, photo	All photos and documents above will be used to review these questions.
CH3	Commissioning and Handover	Technician not F-gas registered where required	SEV 1	Document, photo	
CH4	Commissioning and Handover	No F-gas Cert present where required	SEV 1	Document, photo	

HP1/SD1, HP2/SD2, HP5/SD5 & HP7/SD7 - SYSTEM DETAILS

Please provide evidence to demonstrate the following.

1. Photo/PDF Radiator schedule from the room by room calculations. See Fig 1

2. Photo of data plate for indoor unit/cylinder. See Fig 2

3. Photo of data plate for outdoor unit (where applicable). See Fig 3

Design Details 1

Please specify below all details of the Heat distribution system as designed and installed.
Instructions on how to fill in the spreadsheet is provided in the "Guidance" tab. These instructions and the documents referred to need to be read carefully before filling in the data.

Additional lines can be inserted as required

Room	Room Heat Loss [W]	Type of emitter	Manufacturer	Model	Single heat emitter output [W]	No of	Total heat emitters output [W]	ΔT for heat output	W/m2 (UF)	Supply Air temperature	Note
Kitchen	980	Underfloor			1200	N/A	1200	10	50	N/A	Please specify the W/m2 of underfloor heating syste
Living Room	1100	Radiator			620	2	1240	20	N/A	N/A	Please specify the ΔT for output specification
WC	320	Radiator			410	1	410	20	N/A	N/A	Please specify the ΔT for output specification
Hall	270	Radiator			410	1	410	20	N/A	N/A	Please specify the ΔT for output specification
Bedroom 1	560	Radiator			620	1	620	20	N/A	N/A	Please specify the ΔT for output specification
Bedroom 2	570	Radiator			620	1	620	20	N/A	N/A	Please specify the ΔT for output specification
Bedroom 3	610	Radiator			620	1	620	20	N/A	N/A	Please specify the ΔT for output specification
Bathroom	320	Radiator			410	1	410	20	N/A	N/A	Please specify the ΔT for output specification

Total Heat Loss	4730	Watts
Area of Dwelling	100	m2
HLI (Design)	1.97	W/K/m2

Total Output	5530	Watts

Guidance | Designer_Installer Sign Off | Heating Design

Fig 1

Fig 2

Fig 3

OU1, OU3, OU5 & OU6 - OUTDOOR UNIT

Please provide evidence to demonstrate the following.

1. Wall Mounted unit. See Fig 4
   a. Photo of the outdoor unit and surrounding area.
   b. Photo of the condense outlet.
   c. Photo of the bracketing system.
   d. Photo of the electrical isolator.
   e. Photo of pipework and pipework insulation.

2. Floor Mounted unit. See Fig 5
   a. Photo of the outdoor unit and surrounding area.
   b. Photo of the condense outlet.
   c. Photo of the bracketing system.
   d. Photo of the electrical isolator.
   e. Photo of pipework and pipework insulation.

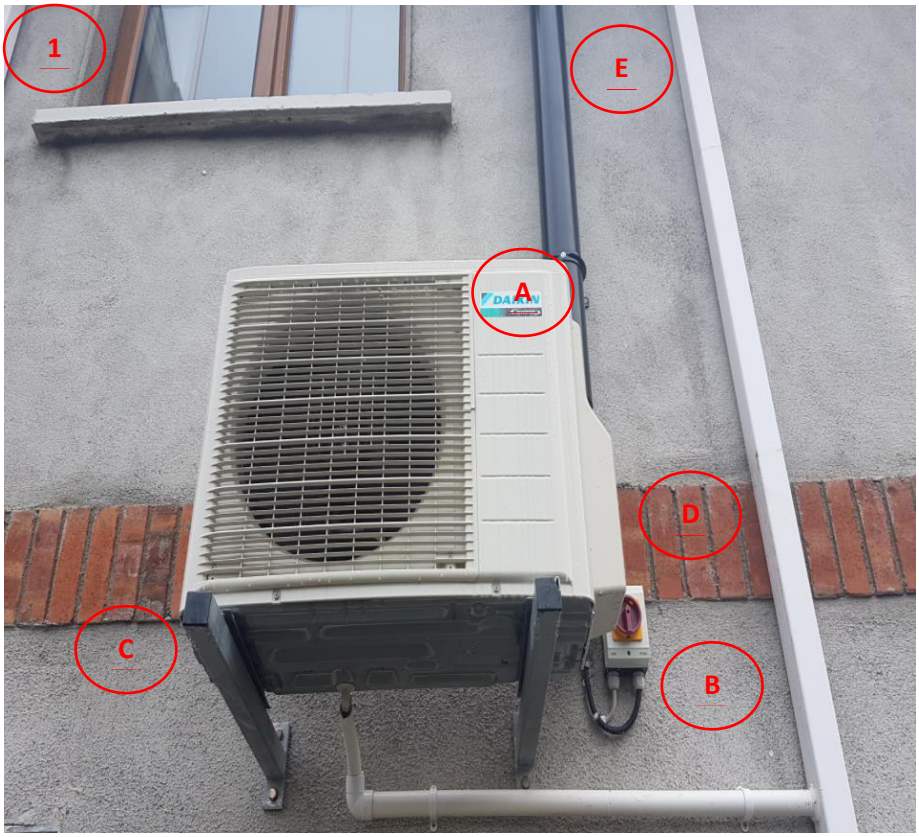


Fig 4

Fig 5

RP4 - REFRIGERANT PIPEWORK

Please provide evidence to demonstrate the following.

1. Photo capturing the insulated refrigerant pipework from the outdoor unit to where the pipes enter the building. See Fig 6

Fig 6

2. Photo capturing the horizontal insulated refrigerant pipework with brackets from where they enter the building towards the indoor unit. See Fig 7

Fig 7

3. Photo capturing the insulated refrigerant pipework as they connect to the indoor unit. See Fig 8

Fig 8

WP2 - WATER PIPEWORK

Please provide evidence to demonstrate the following.

1. Photo of the back of the outdoor unit, clearly showing pipework insulation and brackets. See Fig 9

2. Photo of the indoor unit/cylinder. See Fig 10

3. Safety valve. See Fig 11

4. Safety valve discharge point. See Fig 12

Fig 9

Fig 10

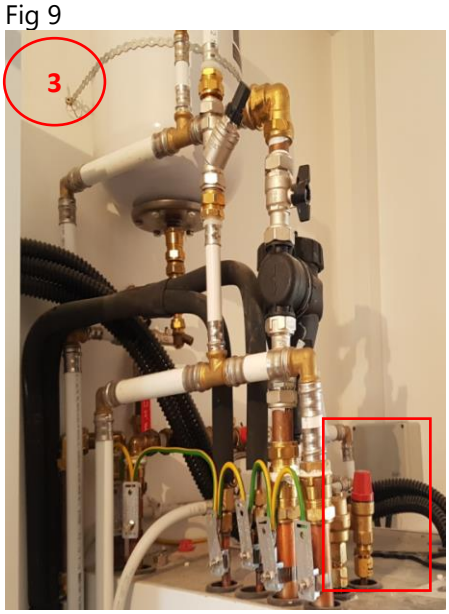


Fig 11

Fig 12

E1 & EL1 - ELECTRICAL

Please provide evidence to demonstrate the following.

1. Earth bonding at indoor unit, cross bonded to all metal pipework services including refrigerant pipework. (split system). See Fig 13 & 14

Fig 13

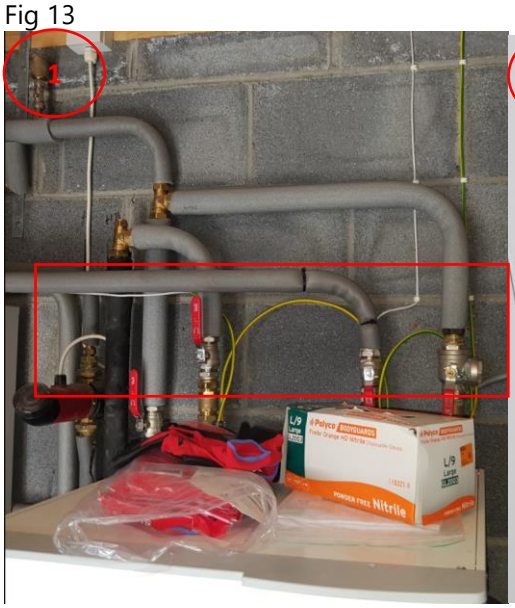


Fig 14

2. Electrical Isolator. See Fig 15 & 16

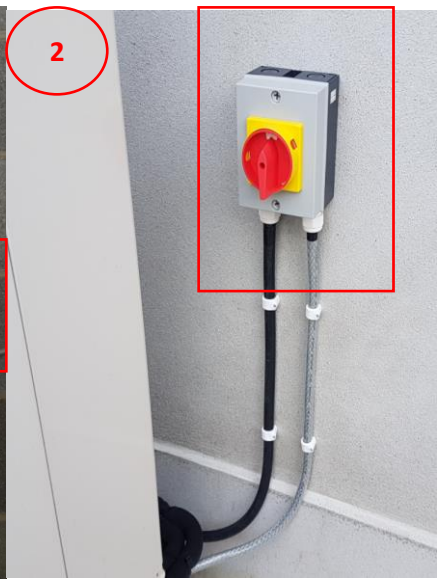


Fig 15

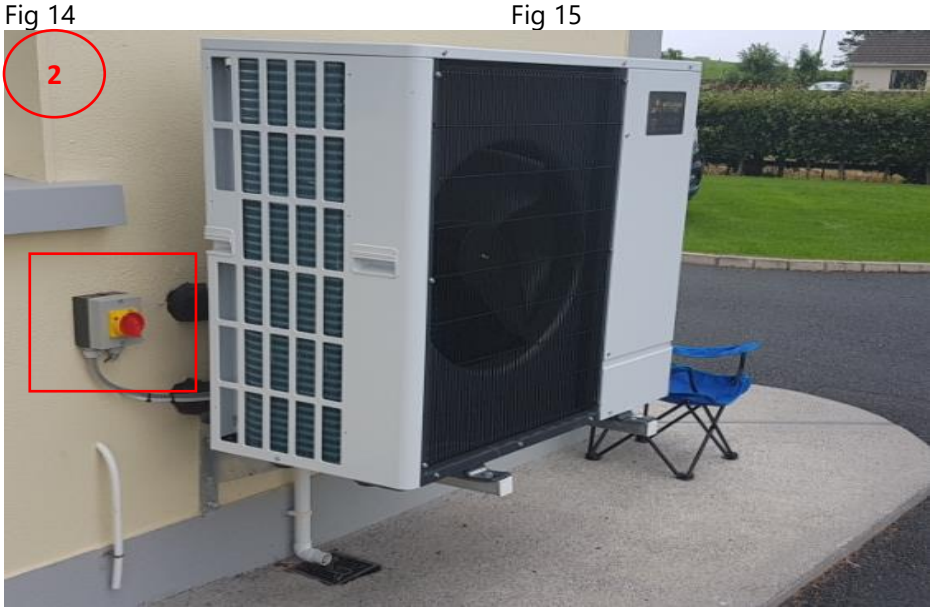


Fig 16

CP1 - CONDENSATE PIPEWORK

Please provide evidence to demonstrate the following.

1. Condensate pipework run to gully. See Fig 17

Fig 17

2. Condensate pipework run to rainwater downpipe. See Fig 18

Fig 18

RS5 - ROOM STAT / SENSORS TI1 – HOT WATER TANK INSULATION

Please provide evidence to demonstrate the following.

1. Wide angled photo to include. See ig 19
   a. Thermostat location.
   b. Heat emitter and valves.

2. PDF of the product installation manual to demonstrate insulation value of the cylinder and the facility for legionella prevention. See Fig 20

Fig 19

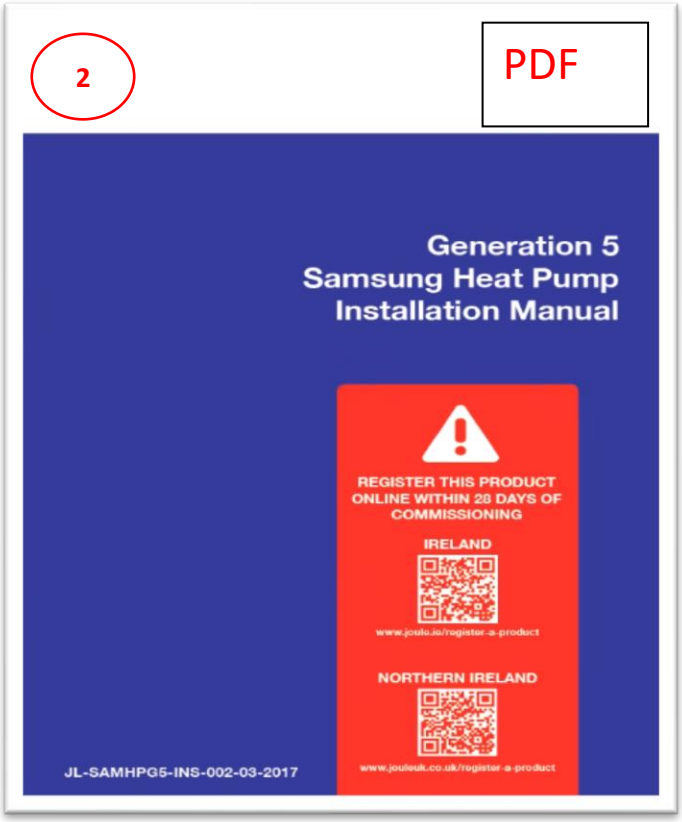


Fig 20

IH4, HT4 & IT4 - IMMERSION HEATER TIMER HW1 & TI1 – HOT WATER TANK INSULATION

Please provide evidence to demonstrate the following.

1. Photo of the indoor unit/cylinder. See Fig 20
    a. Immersion and timer installed.

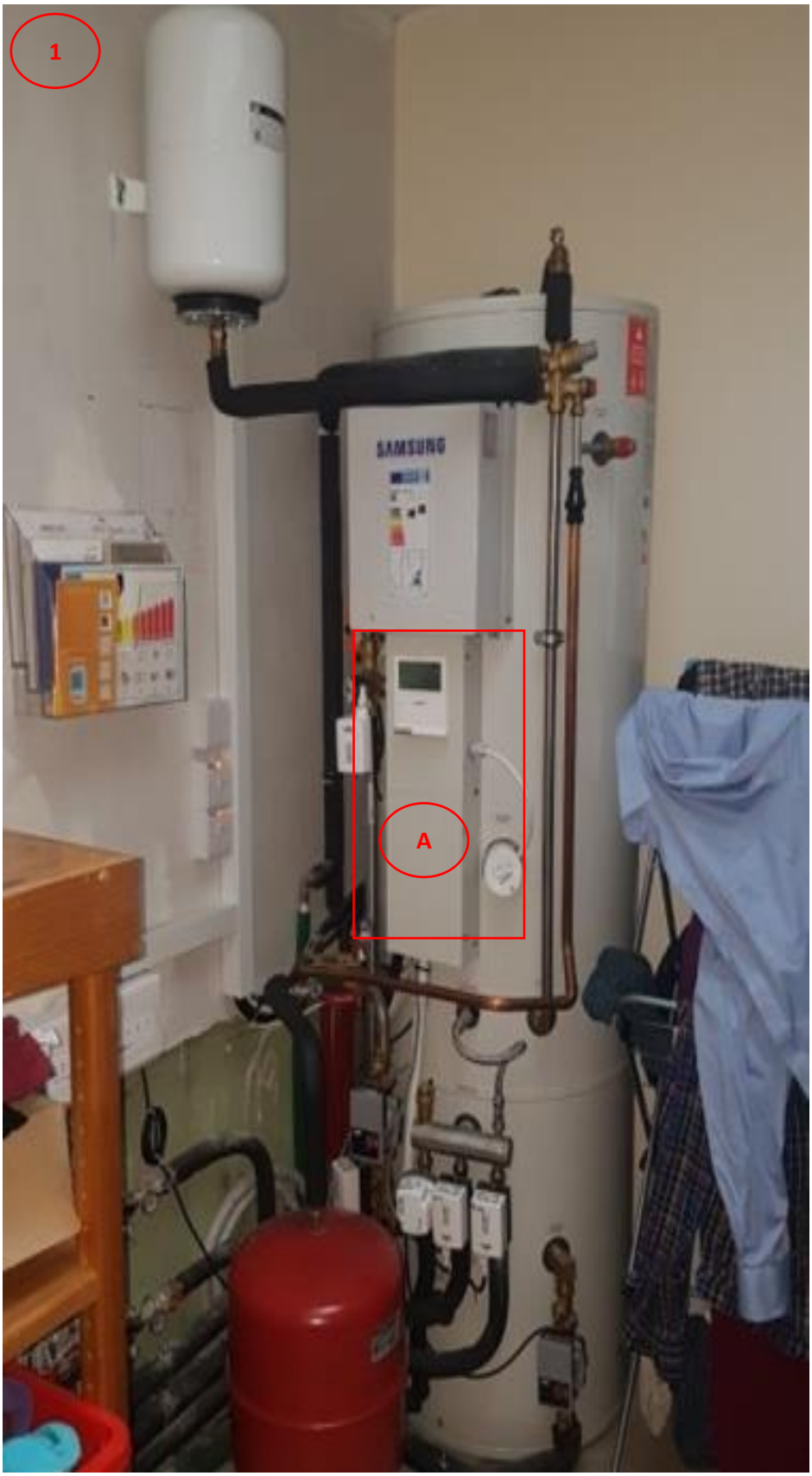


Fig 21

PC1, PI1 & IC1 - PROGRAMMER/ INBUILT CONTROLLER

Please provide evidence to demonstrate the following.

1. Specific heating controllers as per the specified heat pump. See Fig 22 & 23

Fig 22

Fig 23

AAIU1 & AAIU3 - AIR TO AIR SYSTEMS INDOOR UNIT

Please provide evidence to demonstrate the following.

1. Wide angle photo to show there are no air flow obstructions to the indoor unit. See Fig 24

2. PDF copy of the product installation manual. See Fig 25

Fig 24

Fig 25

EAWPD1 & EAWPD2 - EXHAUST AIR HEAT PUMP DUCTWORK

Please provide evidence to demonstrate the following.

1. Photo of the fan unit capturing, wide angled view. See Fig 26

2. Photo of the data label. See Fig 27

3. Surrounding area including ventilation pipework. Ducting and the fused spur. See Fig 28

Fig 26

Fig 27

Fig 28

CH1, CO1, CH2, CO2, CH3, CO3, CH4, CO4, CH8, CH9, CO9 - COMMISSIONING AND HANDOVER DOCUMENTS

Please provide evidence to demonstrate the following.

1. PDF documents to be uploaded. See Fig 29

1 All Documents below **must** be provided,

1. Invoices ✓
2. User and installation manuals ✓
3. Commissioning certificate ✓
4. Safe Electric Completion certificate ✓
5. DEAP Heat Pump Designer/Installer forms,
   - I. Heating Design tab ✓
   - II. Eco-design datasheet ✓
   - III. Ground and Water collector plans (as built) ✓

Fig 29