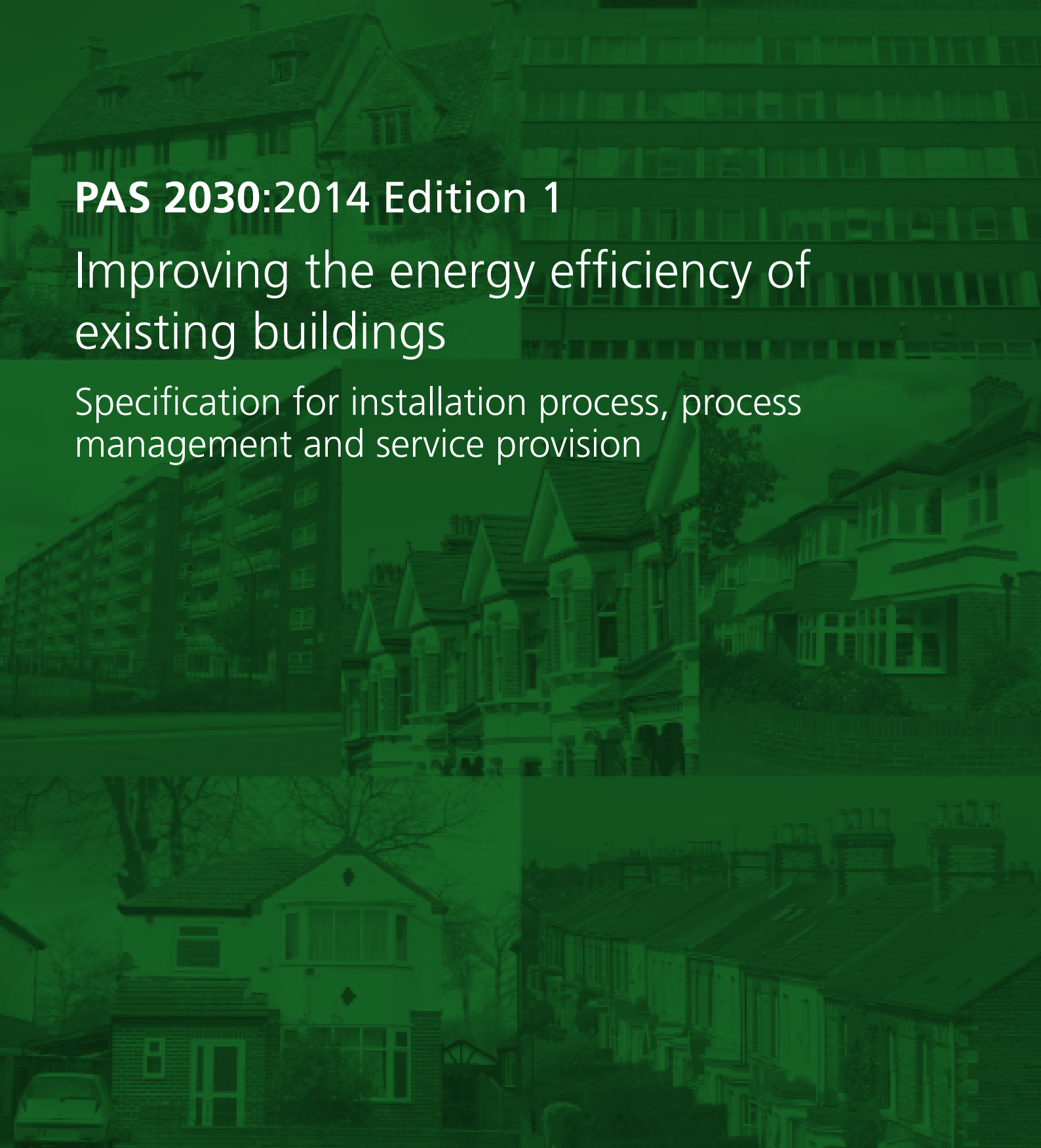




PAS 2030:2014 Edition 1

Improving the energy efficiency of existing buildings

Specification for installation process, process management and service provision



Department
of Energy &
Climate Change



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Contents

	Page
Foreword	iii
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Installation process	4
4.1 Method statement	4
4.2 Energy efficiency measure design specification	4
4.3 Installation location information	4
4.4 Installation methods	5
4.5 Installation equipment and tools	5
4.6 Checking, handling and storage	5
4.7 Provision of installation instructions to operatives	5
4.8 Intermediate inspections	6
4.9 People	6
4.10 Engagement of subcontract installers	6
4.11 Commissioning	6
4.12 Handover	6
4.13 Installation control	7
4.14 Installation documents and record keeping	7
5 Installation process management	8
5.1 Operation and process oversight	8
5.2 Pre-installation survey	8
5.3 Action in respect of Intermediate inspection	9
5.4 Installation process change	9
5.5 Process continuity plan	9
5.6 Process control	9
5.7 Internal audit and corrective action	9
5.8 Installation process records	9
5.9 Business and financial probity	10
6 Service provision	10
6.1 Complaints procedure	10
6.2 Interaction with customers	10
7 Claims of conformity	10
8 Documents essential to the application of the Annexes of this PAS	11
8.1 Use of the identified documents	11
8.2 British Standards	11
8.3 Institution of Gas Engineer and Managers – Standards	12
8.4 Energy Networks Association Engineering Recommendations	12
8.5 UKLPG	12
8.6 Department of Communities and Local Government	12
8.7 CITB	13
8.8 Common Minimum Technical Competence Annexes	13

Annexes

Annex A Energy efficiency measures and types with current and historic PAS 2030 annex references, arranged by measure category	16
Annex B (normative) BFM energy efficiency measures	19
B1 Measure BFM.1 Cavity wall insulation including that installed in party walls	19
B2 Measure BFM.2 Draught proofing	23
B3 Measure BFM.3 Energy efficient glazing and doors including replacement Insulating Glass Units (IGU)	28
B4 Measure BFM.4 - External wall insulation	32
B5 Measure BFM.5 Flat roof insulation	37
B6 Measure BFM.6 Floor insulation	42
B7 Measure BFM.7 Hybrid wall insulation	47
B8 Measure BFM.8 Internal wall insulation	53
B9 Measure BFM.9 Loft insulation	58
B10 Measure BFM.10 Pitched roof insulation	63
B11 Measure BFM.11: Solar Blinds, Shutters and Shading Devices (internal and external)	68
B12 Measure BFM.12: Flexible thermal Lining	73
Annex C (normative) BSM energy efficiency measures (normative)	79
C1 Measure BSM.1 Chillers	79
C2 Measure BSM.2 Condensing boilers, natural gas-fired and liquefied petroleum gas-fired (domestic and non-domestic)	84
C3 Measure BSM.3 oil-fired condensing boilers	90
C4 Measure BSM.4 Flue-gas heat recovery devices	95
C5 Measure BSM.5: Heating system insulation (ducting, pipes and cylinders)	99
C6 Measure BSM.6 Heating, hot water system, air conditioning or ventilation controls and components	104
C7 Measure BSM.7 Hot water systems	110
C8 BSM.8 Mechanical Ventilation and Heat Recovery	116
C9 Measure BSM.9 Radiant heating (non-domestic)	121
C10 Measure BSM.10.1 Under-floor heating	127
C11 Measure BSM.11 Warm-air heating systems (domestic and non-domestic)	132
C12 BSM.12 Water efficient taps and showers	137
Annex D (normative) BSE energy efficiency measures	142
D1 Measure BSE.1 Electric storage heaters (including electric warm air heating units that incorporate heat storage)	142
D2 Measure BSE.2 Lighting fittings, lighting systems and lighting system controls	147
D3 Measure BSE.3 Variable speed drives for fans and pumps	151
Annex E (informative) Example installation project information collation form	154

List of figures

Figure 1 – Green Deal overview – Key stakeholder relationships	vi
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List of tables

Table A.1 – Category BFM (Building Fabric Measures)	16
Table A.2 – Category BSM (Building Services Mechanical)	17
Table A.3 – Category BSE (Building Services Electrical)	18
Table B.1 – Measure specific requirements for cavity wall insulation including that for party walls (BFM.1)	19
Table B.2 – Measure-specific requirements for draught proofing (BFM.2)	23
Table B3 – Measure-specific requirements for energy efficient glazing and doors (BFM.3)	28
Table B.4 – Measure-specific requirements for external wall insulation (BFM.4)	32
Table B5 – Measure-specific requirements for flat roof insulation (BFM.5)	37
Table B6 – Measure-specific requirements for floor insulation (BFM.6)	42
Table B7 – Measure-specific requirements for hybrid wall insulation (BFM.7)	47
Table B8 – Measure-specific requirements for internal wall insulation (BFM.8)	53
Table B9 – Measure specific requirements for loft insulation (BFM.9)	58
Table B10 – Measure-specific requirements for pitched roof insulation (BFM.10)	63
Table B11 – Solar Blinds, Shutters and Shading Devices (BFM.11)	68
Table B12 – Flexible thermal lining (BFM.12)	73
Table C1 – Measure-specific requirements for chiller units (BSM.1)	79
Table C2 – Measure-specific requirements for gas-fired condensing boilers (BSM.2)	84
Table C3 – Measure-specific requirements for oil-fired condensing boilers (BSM.3)	90
Table C4 – Measure-specific requirements for flue-gas recovery devices (BSM.4)	95
Table C5 – Measure-specific requirements for heating system insulation (including ducting, pipes and cylinders) (BSM.5)	99
Table C6 – Measure-specific requirements for Heating, hot water system, air conditioning or ventilation controls and components (BSM.6)	104
Table C7 – Measure-specific requirements for hot water systems (BSM.7)	110
Table C8 – Measure-specific requirements for Mechanical Ventilation and Heat Recovery (BSM.8)	116
Table C9 – Measure-specific requirements for Radiant heating (BSM.9)	121
Table C10 – Measure-specific requirements for under-floor heating (BSM.10)	127
Table C11 – Measure-specific requirements for gas and/or oil-fired warm-air heating systems (domestic and non-domestic) (BSM.11)	132
Table C12 – Water efficient taps and showers (BSM.12)	137
Table D1 – Measure-specific requirements for Electric storage heaters (BSE.1)	142
Table D2 – Measure-specific requirements for Lighting fittings, lighting systems and lighting system controls (BSE.2)	147
Table D3 – Variable speed drives for fans and pumps (BSE.3)	151

Foreword

This revision of PAS 2030:2012 has been facilitated by BSI Standards Limited in response to comments submitted by users of the earlier specifications and to changes to the list of energy efficiency measures (EEM) included under the Green Deal. This PAS continues to provide a specification for the installation of such measures, using specified products and systems in the installation of EEM as recognized in the UK Government's Standard Assessment Procedure (SAP) in relation to the Green Deal and the Green Deal Code of Practice, in existing buildings. This will be particularly but not exclusively where such installation is undertaken within the remit of the United Kingdom Green Deal Financing Mechanism.

The development of this PAS was sponsored by the Department for Energy and Climate Change (DECC).

Mr Tom Lock of the Energy Saving Trust Limited the Technical Author for the first edition of PAS 2030, has also participated in the preparation of this third edition.

Recognition is given to the following organizations that, through nomination of experts have assisted with the development of edition 1 and/ or edition 2 of this specification through direct technical input and through the provision of liaison with other bodies not directly represented on the group:

- Asset Skills
- Association of British Certification Bodies
- Bathroom Manufacturers Association
- British Blind and Shutter Association
- British Board of Agrément
- British Electrotechnical and Allied Manufacturers Association
- British Gas
- British Pump Manufacturers Association
- British Standards Institution Consumer & Public Interest Network
- Building and Engineering Services Association
- Carillion
- Chartered Institution of Building Services Engineers
- Construction Products Association
- CITB
- Cotherm UK
- Department of Communities and Local Government
- Electrical Contractors Association
- Energy Retailers Association
- Energy Saving Trust
- Federation of Master Builders
- Federation of Environmental Trade Associations
- Gemserv
- Glass and Glazing Federation
- Grundfos UK
- Hot Water Association
- Insulated Render and Cladding Association
- Kingfisher
- Kingspan Insulation Limited
- Lighting Industry Association
- MCS Standards Management Group
- National Insulation Association
- Royal Institute of British Architects
- Scottish Energy Installers Alliance
- Summit Skills
- The Association of Controls Manufacturers
- United Kingdom Accreditation Service
- University College London.

Comments from other parties were also sought by BSI, particularly through the Expert Review and Public Comment process, which took place during November 2013. The expert contributions from all the organizations and individuals consulted in the development this PAS are gratefully acknowledged.

Publishing information

This PAS has been prepared and published by BSI, which retains its ownership and copyright. BSI reserves the right to withdraw or amend this document on receipt of authoritative advice that it is appropriate to do so. Once published, this PAS will be reviewed at intervals not exceeding two years, and any amendments arising from the review will be published as an amended Publicly Available Specification and publicized in *Update Standards*.

Use of this document

It has been assumed in the preparation of this PAS that the execution of its provisions will be entrusted to a competent person or persons for whose use it has been produced.

This PAS is not to be regarded as a British Standard, European Standard or International Standard. In the event that this PAS is put forward to form the basis of a full British Standard, European Standard or International Standard, it will be withdrawn.

Presentational conventions

The provisions of this PAS are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall". Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material, e.g. Notes, are presented in italic type, and do not constitute a normative element.

Contractual and legal considerations

Attention is drawn to the fact that the Green Deal Code of Practice requires installers of energy efficiency measures installed under the Green Deal Financing Mechanism to be certified as conforming to this PAS.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Attention is drawn to the principle, applicable in British Standards generally, that they do not require actions that are the subject of legal requirement. Therefore, this PAS does not include, for example, requirement to observe Health and Safety, Building Regulations, Gas Safety Regulations, Water Regulations, etc. with which it is assumed users of this PAS will be in compliance.

Compliance with this PAS does not in itself confer immunity from legal obligations.

Introduction

This revision of PAS 2030 continues to provide a specification for the installation of energy efficiency measures (EEM) in existing buildings although the list of EEM to which it relates has again been changed in line with changes to the list of measures eligible under the Green Deal. In addition, some changes have been made to the core text of the PAS in response to comments received from users during the first 2 years of application. These are however, mainly matters of clarification or simplification and the basic methodology of the PAS remains unchanged.

The primary objective for the PAS remains as the provision of a robust, uniformly applicable specification that will assist installers that comply with its requirements in full to demonstrate that their installation processes are capable of providing installation of energy efficiency improvement measures to specification and in accordance with the customer's expectations.

This PAS has been produced to work alongside, but not exclusively in connection with, the Green Deal Financing Mechanism. The Green Deal is the Coalition Government's policy for improving the energy efficiency of buildings in Great Britain. It is a market framework based on a key principle that some energy efficiency related changes to properties pay for themselves, in effect, through the resulting savings on fuel bills.

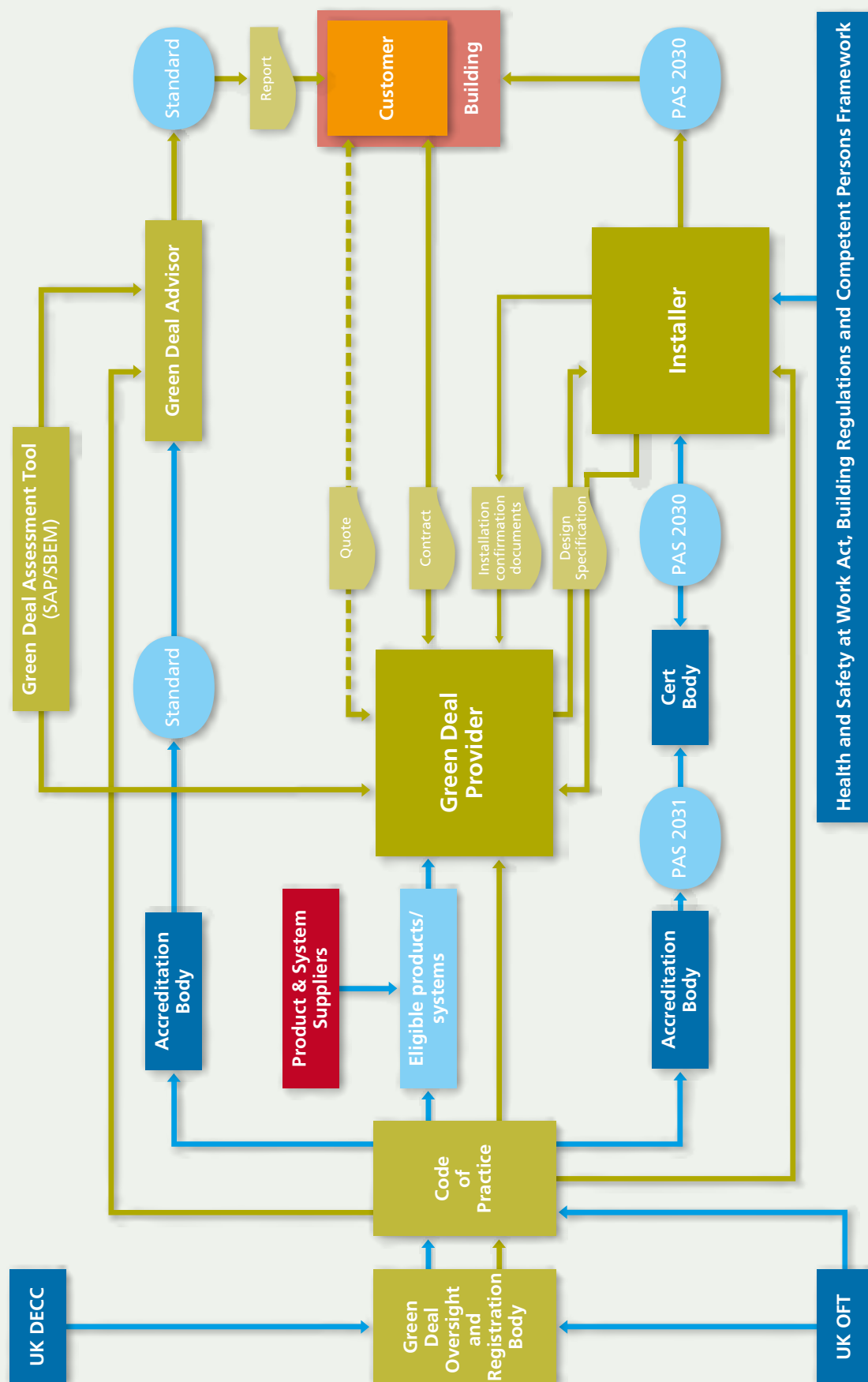
The Green Deal creates a financing mechanism that will allow a range of energy efficiency measures to be installed in both dwellings and non-dwellings at no upfront cost. DECC is using this PAS:

- to set the requirements for the installation of the measure(s) under the Green Deal and in accordance with the requirements of the Green Deal Code of Practice; and
- as a good practice benchmark for installations carried out on their flagship policy.

This PAS is primarily intended for the installer of energy efficiency measures, but other parties may also find it useful (e.g. Green Deal Providers).

Each of the energy efficiency measures eligible under the Green Deal is provided for in a measure-specific Annex to this PAS. Compliance with this PAS requires that for each installation, the installer has to meet all the requirements of Clauses 1 to 8 of PAS 2030 together with those set out in the Annex relevant to each measure to be installed.

It is expected that the list of eligible measures will continue to change over time and therefore a procedure has been agreed that will facilitate the amendment of the PAS to align with any such changes twice each year (April and October). It is therefore envisaged that PAS 2030 could be published in two editions each calendar year, for the foreseeable future.



1 Scope

PAS 2030:2014 Edition 1 continues to set out requirements for the installation of energy efficiency measures (EEM) in existing buildings used for both dwelling and non-dwelling purposes. It is intended for use by any entity undertaking the installation of any products and/or systems designed to improve the energy efficiency of existing buildings but particularly where those products and systems are to be installed within the remit of the United Kingdom Green Deal Financing Mechanism. For those installations funded under the Green Deal this PAS should be read in conjunction with the relevant sections of the Green Deal Code of Practice.

This PAS includes requirements in respect of installation processes, process management and service provision and includes criteria relating to installation methods, equipment, tools, product or system and material suitability, the commissioning of installed measures and the training, skills and competence of the people undertaking such installation.

This PAS is constituted of core requirements to be met by any entity claiming conformance to it, supplemented by Annexes setting out additional requirements for each measure type. This PAS requires claims of conformance to be in respect of the core requirements and all Annexes relevant to the installation to be undertaken by the claiming entity.

Annex A provides detail of the PAS 2030 Annex structure and its relationship to the list of eligible measures. This annex also provides cross-reference to the annex references for equivalent measures in the original version (PAS 2030: 2012 Edition 1).

Annexes B, C & D provide specific requirements relating to particular energy efficiency measures for application by installers undertaking installation of those measures. These Annexes also include requirements in respect of the provision of information to customers.

This PAS does not include requirements for the technical specification of the energy efficiency measures to be installed.

This PAS no longer includes requirements for the installation of measures for the micro-generation of energy in respect of which the Green Deal Code of Practice requires compliance with the Microgeneration Certification Scheme.

This PAS does not include requirements relating to the certification of PAS 2030 compliance by independent third parties which subject is covered by PAS 2031:2012, developed in conjunction with this PAS.

2 Normative references

Green Deal Code of Practice

NOTE *The application of this PAS requires users to select measure-specific Annexes that are relevant to the measure to be installed from the range of Annexes provided. Because of this all other normative references are Annex specific. Clause 8 lists all documents that are considered indispensable for the application of particular Annexes.*

3 Terms and definitions

The following terms and definitions are considered indispensable to the understanding and application of this PAS.

3.1 competence

having the necessary technical knowledge, skill and experience for the nature of the installation process undertaken

3.2 competence currency

period for which competence is to be considered as adequate without further training and/or knowledge acquisition

3.3 competence ratio

number of operatives below the required threshold and/or specialist competence level permitted to work on an EEM installation of a particular type relative to the number of operatives who meet the required threshold and/or specialist competence level working on the same installation

3.4 commissioning

activities that ensure that the installed measure operates within the boundaries and conditions of the design specification

3.5 customer

property owner, landlord and/or tenant of a building at which energy efficiency measures are being installed

NOTE Attention is drawn to the fact that in this PAS, the term customer refers to the recipient of an energy efficiency measure installation project. For an installation under the Green Deal that customer will have a direct business relationship with a Green Deal Provider (GDP) and not with the installer undertaking the placement of measures in the building of which they are owner, landlord or tenant. In this context, the installer is acting as an agent of the relevant GDP. The Customer could be referred to as the occupier in other Green Deal-related documents.

3.6 (EEM) product

item eligible for installations financed under the Green Deal that is not made available as an (EEM) system

NOTE (EEM) products and/or systems (see 3.8) eligible under the Green Deal will be required to meet any conditions set in Annex D of the Green Deal Code of Practice.

3.7 (EEM) specifier

entity providing EEM design and/or specification services to customers in relation to products/systems eligible for installations financed under the Green Deal

3.8 (EEM) system

combination of particular products, installation equipment and materials, installation method and performance objectives eligible for installation under the Green Deal

3.9 energy efficiency measure (EEM)

planned work undertaken to improve the energy performance of a building by saving or generating energy

3.10 Green Deal Provider (GDP)

entity fulfilling the role of EEM specifier for products/systems eligible for installations financed under the Green Deal

NOTE 1 The Green Deal Provider will also have responsibilities relating to the financing of the EEM to be installed.

NOTE 2 PAS 2030 refers throughout to "EEM specifier" as the entity providing EEM design and/or specification services to customers. For installations carried out under the Green Deal, the term Green Deal Provider is to be substituted wherever EEM specifier appears.

3.11 installer

entity undertaking the physical placement of an energy efficiency measure(s) in an existing building

3.12 installation

location, placement and/or fixing of an energy efficiency measure in, or connected to, an existing building excluding any related work to enable the installation of the measure

3.13 operative

person employed by the installer, either directly or under a subcontract arrangement, to undertake installation tasks on an energy efficiency measure in accordance with the relevant method statement and the related requirements of this PAS

***NOTE** Individuals employed to provide labouring, carrying or loading/unloading capability do not constitute operatives in the terms of this PAS.*

3.14 pre-installation survey

inspection and assessment undertaken by, or on behalf of, the installer prior to commencement of installation, to confirm that the design specification provided by the EEM specifier is appropriate for and can be fulfilled at the location specified and that the proposed installation will not result in non-compliance with statutory requirements and/or industry best practice.

***NOTE** The application of this survey to particular measures is addressed through the pre-installation requirements and the surveyor competence requirements in the measure-specific Annexes.*

3.15 supervision

provision of operational oversight by an operative who meets the required threshold and/or specialist competence level required for the installation of a particular EEM type and is authorized by the installer to do so

4 Installation process

4.1 Method statement

Prior to commencement of any installation work the installer shall, unless otherwise made available by the EEM specifier, define and record in a method statement the installation process for each energy efficiency measure to be installed under the scope of this PAS. The method statement shall include and take account of the elements specified in 4.2 to 4.12 of this PAS:

This method statement shall also include reference to any other measures already installed or to be installed at the same location that may have an impact on the installation or operation of the product(s) or system and the arrangements to be made for co-operation between installers (4.3a).

4.2 Energy efficiency measure design specification

4.2.1 Obtaining a copy of the design specification

The Installer shall obtain from the EEM specifier, a location specific design specification for each energy efficiency measure to be installed including the products / system specified for that installation.

NOTE 1 Attention is drawn to the requirement of this PAS that a pre-installation survey be undertaken by the installer prior to commencement of the installation (see 5.2). It is essential that in the event that the survey finds that the specified EEM cannot be satisfactorily installed in accordance with the design specification provided, the installer refers the matter back to the issuing EEM Specifier.

NOTE 2 Installers may have an input to the design process, but this is a matter for arrangement between EEM Specifiers and installers and is outside the scope of this PAS.

4.2.2 Identification of the relevant measure-specific annexes and measure types

The installer shall identify and record in the method statement, the measure specific annex(es) of this PAS, including any reference to measure type that could limit the scope of required competence, relevant to the design specification for each installation to be undertaken. The Installer shall make provision in the method statement to implement the requirements set out in those annexes

4.3 Installation location information

When not already provided, the installer shall obtain the information listed in a) to g) of this clause to enable the effective installation of the measure(s) at the specified location, to the required standard:

- a) details of other EEM or work that could adversely impact the energy efficiency of the building, installed or to be installed at the same location;
NOTE This is to enable cooperation with installers or others engaged in the installation of other measures to ensure mutual efficiency and effectiveness of EEM performance and avoid potential conflict between their respective working procedures and timing.
- b) installation instructions and requirements to be applied including those for any required interrelationship between measures;
- c) customer requirements and expectations to be met by the installer, including, for example timing, access to the premises, storage of materials and tools and use of toilets and other facilities;
- d) confirmation that all necessary permissions have been obtained and any constraints made known, including any arising from EEM product or systems related conditions set in Annex D of the Green Deal Code of Practice;
NOTE This should include information in respect of any properties covered by the Town and Country Planning Act 1990 and in particular historic or listed properties covered by the Listed Buildings and Conservation Areas Act 1990 or the Ancient Monuments and Archaeological Areas Act 1979.
- e) information that is to be provided by the installer to the customer;
- f) confirmation that the necessary guarantees and warranties are in place;
- g) detail of the terms and conditions included in guarantees and warranties, including any specific installation requirements or limitations that may affect their validity.

The installer shall not commence the installation until the information in a) to g) has been obtained. For installations under the Green Deal this information shall be requested from the GDP or written confirmation obtained from the relevant GDP that particular items of information are not necessary, e.g. in respect of specific customer requirements.

4.4 Installation methods

The method(s) for the installation of the EEM(s) shall originate from the product/system specification sheets or other such guidelines and information provided by the product or system manufacturer, supplier or EEM specifier for this purpose. Preference shall be given to material provided by the manufacturer or set out in the relevant Annex in this PAS.

Where an installation method is not provided with the product or system, the installer shall, prior to commencing the installation, contact the manufacturer, supplier or EEM specifier, as applicable, to obtain the required information.

In the event that installation methods cannot be obtained, commencement of the installation shall be deferred until the required alternative or customised method has been agreed and issued to the installer by the EEM specifier.

4.5 Installation equipment and tools

4.5.1 Availability

Equipment appropriate to the installation process to be undertaken shall be available to operatives at the time of installation.

NOTE *Attention is drawn to the existence of health and safety at work legislation in relation to the provision and use of tools and equipment.*

4.5.2 Suitability and capability

The selection and use of equipment and tools shall be defined and relevant to the installation process being undertaken, as provided for in the methods obtained under 4.4.

4.5.3 Calibration

4.5.3.1 Equipment requiring calibration shall be calibrated in accordance with the manufacturer's instruction or verified at intervals determined by the installer prior to use. The interval between such calibrations shall not exceed that recommended by the equipment manufacturer. Where equipment requiring calibration is hired, copies of calibration certificates shall be obtained and retained as a record.

4.5.3.2 Calibration and verification records for equipment, gauges, measuring and test equipment shall include:

- a) equipment identification, including the measurement reference standard against which the equipment is calibrated;

- b) any out-of-specification readings when equipment is submitted for calibration;
- c) a statement of conformity to specification after each calibration or verification.

4.5.3.3 In the event that the installer has reason to believe that a calibrated item may be out of calibration (e.g. the item has been dropped or mistreated), the installer shall have in place instruction that operatives cease using the item immediately and arrangement for its recalibration or replacement at the earliest practicable time. The installer shall record the date and time of all instances where recalibration or replacement is required during an installation, and take action to confirm any measurements that may have been made while the item was out of calibration.

4.5.4 Equipment and tool maintenance

4.5.4.1 Equipment required to carry out the installation processes shall be identified and resources provided for equipment and tool maintenance.

4.5.4.2 All equipment and tools used for installation work shall be maintained in a fit-for-purpose and safe condition.

4.6 Checking, handling and storage

The installer shall operate a procedure to ensure that they are aware of any particular handling instructions and storage conditions for the measure(s)/products or systems that they are installing under the scope of this PAS and that those requirements are effectively implemented.

4.7 Provision of installation instructions to operatives

The installer shall make available to the operative(s) for every installation undertaken the necessary product/system specifications, work instructions, installation methods and relevant standards, repair requirements and location-specific information to enable the installation to be completed to the specification provided by the EEM specifier.

Location-specific information shall include at least the following:

- a) installation times agreed by the customer and any commitments made;
- b) known special needs/expectations in respect of the customer;
- c) notification of any interrelationship between

measures and measure installation at the same location, particularly in respect of the mutual efficiency and effectiveness of measures, working procedures and timing.

***NOTE** For measures to be installed under the Green Deal, it is expected that much of the above information will have been made available by the GDP (4.3).*

4.8 Intermediate inspections

The installer shall include in the method statement the necessary facility to accommodate any intermediate inspections required by external parties.

4.9 People

4.9.1 Selection, training and work assignment

The installer shall establish and operate procedures to:

- a) determine the skills and competence levels required by operatives to undertake the required installation tasks;
- b) recruit and retain a sufficient number of operatives possessing the required skills at the required level of competence, or capable of acquiring those attributes with appropriate training, as specified in the relevant measure-specific Annex;
- c) provide or arrange access to any training required;
- d) assign operatives to installation projects commensurate with the levels of skill and competence specified in the relevant measure-specific Annex and maintain a record of the operatives assigned to and working on each project;
- e) ensure that operatives undertaking installation tasks are informed of and understand the importance of their installation activities and how they contribute to the achievement of the efficiencies specified;
- f) assess the effectiveness of procedures operated under a), b), c), d) and e);
- g) maintain records of current capability, training, competence and identified route to competence for each operative.

***NOTE** Attention is drawn to the requirements relating to the employment and registration of competent operatives in the Green Deal Code of Practice and to the fact that these will need to be taken into account in any certification assessment that may be undertaken in respect of the application of PAS 2030.*

4.9.2 Installation supervision

The installer shall assess the respective skills and competence of operatives assigned to the installation tasks required for each installation and provide a level of supervision in accordance with the competence ratio provided in the relevant measure-specific Annex of this PAS. Supervision shall include monitoring and inspecting operatives on site to ensure that they routinely comply with the requirements of PAS 2030 and that measures are installed at the designated location, in accordance with the design specification of the EEM specifier.

4.10 Engagement of subcontract installers

The installer shall ensure that arrangements to subcontract any part of an installation to another installer include requirements that the subcontractor complies with all requirements of this PAS that are relevant to the installation-related tasks to be undertaken. The installer shall retain responsibility for compliance with all requirements of this PAS for all work that is carried out under a subcontract.

***NOTE** For work undertaken in respect of a Green Deal Plan or under the Energy Company Obligations (ECO) these requirements include those imposed by the Green Deal Code of Practice*

4.11 Commissioning

Where otherwise not covered by a measure-specific requirement, it shall be the responsibility of the installer to ensure the installed measure(s) is commissioned, in accordance with the manufacturer's instructions and the design specification and in conformance with any relevant statutory regulations. Record shall be made of commissioning action undertaken, including any performance measurement results, and for installations under the Green Deal a copy made available to the GDP.

4.12 Handover

When the measure is fully installed and commissioned, and with any operationally material defects corrected, the installer shall undertake a handover procedure with the customer as follows:

Where the installation is being funded under the Green Deal, the installer shall obtain instructions for the handover process from the GDP and undertake the handover accordingly.

Where the installation is outside the remit of the Green Deal Financing Mechanism, the installer shall prepare and work to a handover procedure including, but not limited to, the provision of information on:

- a) the safe operation of the installed measure, which could include operable components (e.g. windows, including any restrictor hardware), electrical equipment, mechanical equipment and associated control devices (e.g. boilers and heating controls). Where practicable, this shall include both demonstration and a visual check that the person receiving the instruction is able to operate components and controls;
- b) the care of the installed measure to avoid detrimental effects (e.g. avoidance of penetrating air barriers by inserting fixings into internally insulated walls, regular cleaning and replacement of air filters in mechanical ventilation systems);
- c) the regular maintenance of the installation to ensure that it operates safely, efficiently and effectively. Such maintenance shall be in accordance with the requirements of any guarantees or warranties provided by the manufacturer and/or the EEM specifier or the installer;
- d) the efficient operation of the installation to facilitate the delivery of the expected reduction in energy use.

Prior to conducting the handover process the installer shall ensure that the operatives undertaking the handover are competent to do so and have access to adequate knowledge on the measures involved in the installation together with the behaviour required for their safe, efficient and effective operation and maintenance. Information provided in the handover process shall be clear, structured, relevant and appropriate.

Where the handover is to be undertaken by the GDP, the installer shall supply such information and guidance as may be requested in advance of the handover and shall make arrangements to provide handover support as required. In advance of the handover the installer shall agree with the GDP the information and guidance to be provided to the customer. In advance of the handover, the installer shall agree with the GDP the information and guidance to be left with the customer, including documentation relating to any defects liability periods.

The handover process shall where practicable, involve a physical viewing of the installed measure and an explanation of its function and operation, including where appropriate demonstrations of the operation of

components, devices and controls. The use of any user guides, maintenance manuals and other documents necessary for the safe, efficient and effective care, operation and maintenance of the installed measures, shall also be explained. All guides, manuals and other relevant documentation shall be provided to the customer(s) and/or located adjacent to the installed measures where appropriate and convenient to do so. The Installer shall retain or ensure access to copies of these documents and for installations under the green deal, supply copies to the GDP if requested to do so.

4.13 Installation control

The installer shall have in place and operate a documented installation control procedure appropriate for validating that the installations undertaken conform to the EEM specifier's specification and/or the relevant installation methods. Record of the installation control outcomes for each installation undertaken shall be made and signed off by a person authorized to do so on behalf of the installer.

4.14 Installation documents and record keeping

The installer shall have in place and operate a documented procedure to demonstrate that the information contained in the method statement (4.1) for each installation is available to, and has been used by, the operatives undertaking that installation.

Records relating to the use of work instructions, relevant installation methods and constituent tasks shall include the nature and timing of any changes to installation related activities that may be authorized (5.4).

5 Installation process management

5.1 Operation and process oversight

The installer shall have in place, and operate, procedures designed to ensure that installation processes are undertaken and completed so as to meet the design specification issued by the EEM specifier to the satisfaction of the customer and in accordance with the requirements of this PAS.

5.2 Pre-installation survey

5.2.1 Undertaking the survey

The installer shall undertake a pre-installation survey at the designated location on the basis of the installation method statement prepared under 4.1, using a competent surveyor as defined in the relevant measure-specific Annex of this PAS.

The survey shall be undertaken at a level of detail sufficient to confirm that the specified EEM can be safely and effectively installed at the designated location paying particular attention to potential moisture build-up as a result of the installation and taking into account the functionality and/or safety of installed services (gas, electricity, water, telecommunications, etc.); The survey shall include any specific pre-installation survey requirements from the relevant measure-specific Annex of this PAS.

The suitability and completeness of the method statement (4.1) shall be checked as part of the pre-installation survey. In the event that the method statement is found to be inadequate, the findings of the pre-installation survey shall be used to inform the correction or further development of the method statement.

The suitability and completeness of the design specification (4.2) shall be reviewed as part of the pre-installation survey. Where the pre-installation survey identifies that the design specification could be inadequate or inappropriate, the detail of those findings shall be made known to the EEM specifier.

Before conclusion of the pre-installation survey, the installer shall confirm with the customer that:

- the nature and extent of the specified installation is known to the customer and is in line with that customer's expectations
- the arrangements made for site access and installation materials storage are adequate and appropriate for the installation to be undertaken.

Record of the survey and its findings, including these customer-related issues, shall be made by the surveyor and retained by the installer, with copy being made available to the GDP when required.

NOTE 1 *The pre-installation survey could be included as a first stage of an installation visit provided provision is made for actual installation not to proceed until any identified problems have been resolved.*

NOTE 2 *Attention is drawn to the need to comply with applicable statutory requirements e.g. building regulations.*

NOTE 3 *Attention is drawn to the need for the pre-installation survey to note any potential risk in relation to the ongoing performance of installed services so as to enable liaison with measure specifiers and/or service providers where relevant.*

5.2.2 Safety alarms

Where carbon monoxide (CO) or other safety alarm(s) have already been installed at the designated location, the surveyor shall ascertain by enquiry of the customer whether or not they have been tested in accordance with the alarm system design specification and/or the manufacturers instructions and include report of the customer's response in the survey record.

NOTE *For installations under the Green Deal, further requirements in respect of CO and other safety alarms are included in the Green Deal Code of Practice.*

5.2.3 Presence of protected species

In the event that species (e.g. bats, birds, butterflies, dormice) or plants that could be subject to special protection are found to be present at the designated location, the surveyor shall include report of that presence in the survey record and make the presence known to the GDP and installer.

5.2.4 Action in response to survey findings

In the event that the survey findings reveal potential installation problems, the installer shall notify the EEM specifier and any relevant statutory authorities, and work with the EEM specifier as necessary to develop a mutually agreed solution. Installation shall not commence until such solution has been agreed. The installer shall always obtain the written agreement of the EEM specifier to any introduction of changes to the defined installation process.

5.3 Action in respect of Intermediate inspection

Where an intermediate inspection (4.8) is required by particular measures as part of the overall installation process, the installer shall establish and operate procedures to ensure that work that might impede subsequent inspection cannot continue until the intermediate inspection has been completed and clearance to continue issued.

5.4 Installation process change

5.4.1 Introduction of new or modified method statement and/or installation methods

Any variation to the method statement and/or installation methods shall be defined, documented and agreed with the EEM specifier before proceeding.

5.4.2 Compatibility of installation process change

Any change to an installation process shall be accompanied by a review of related tasks and methods to ensure compatibility with the installation of other measures being installed at the same premises.

5.4.3 Internal feedback

Installers shall encourage internal feedback from installation operatives and surveyors on the installation process, positive or negative. Any feedback received shall be documented and acknowledged prior to being investigated and corrected where judged beneficial. Any decision not to take corrective action in relation to negative feedback shall be documented, including the reasons for reaching the decision.

5.5 Process continuity plan

When not otherwise arranged by the EEM specifier, the installer shall have in place and operate arrangements that, in the event of an unforeseen circumstance that prevents the installer completing an installation, all uncompleted installations can be transferred to another installer and completed in accordance with the relevant design specification and in accordance with this PAS.

***NOTE** For installations carried out under the Green Deal, the Code of Practice requires that, in the above circumstances, responsibility for completion of the installation reverts to the relevant GDP.*

5.6 Process control

The installer shall have in place and operate a documented installation process control procedure capable of demonstrating that the requirements of this PAS have been met for each installation undertaken,

including the completion of the installation control procedure (4.13). Record of the application of the installation process control procedure shall be maintained for each installation and signed off by a competent person authorized to do so on behalf of the installer.

5.7 Internal audit and corrective action

5.7.1 Procedure

A procedure for internal auditing of installation processes by the installer shall be established, implemented and documented to ensure that over the course of a twelve month period each type of installation process undertaken is audited at least once to check conformity to the requirements of this PAS. Record of such audit and any resulting actions shall be made and retained.

***NOTE** It is recommended that installers carrying out large numbers of installations of the same type consider undertaking audits more frequently on a percentage basis, in preference to the maximum interval specified above.*

5.7.2 Investigation

The cause and consequences of issues raised during internal audit (5.7.1) shall be identified, systematically examined and the findings documented.

5.7.3 Corrective action

Corrective action shall include rectification of the particular occurrence identified under 5.7.2 and initiation of measures to prevent recurrence.

5.7.4 Verification of corrective action

The effectiveness of corrective actions undertaken (5.7.3) shall be assessed by the installer and outcomes documented.

5.8 Installation process records

The installer shall establish and maintain records containing at least the information identified in a) through j) of this Clause, in relation to each installation undertaken for which compliance with this PAS is claimed. Installation process records shall be retained for not less than six years and shall be made available to the installer's PAS 2030 certification body or the relevant EEM Specifier, when requested.

- a) location of the installation;
- b) type of measure(s) installed;
- c) dates of installation commencement, completion and commissioning;

- d) identification of specific products/systems installed;
- e) details of any problems encountered, corrections agreed and remedial work undertaken;
- f) name(s) of operatives undertaking the installation and their competence level;
- g) results of performance testing carried out;
- h) commissioning records;
- i) relevant installation certificates;
- j) confirmation that the installation process has been undertaken in accordance with this PAS shall be prepared for each installation and signed off by a competent person authorized to do so on behalf of the installer.

NOTE In addition to the sign-off procedures required under 5.6 and 5.8, the GDP may be required or may choose to undertake a separate validation and sign-off process.

5.9 Business and financial probity

The installer shall have adequate arrangements including insurance at an appropriate level, to cover liabilities arising from its operations and/or activities undertaken under the scope of this PAS and have the financial stability and business resources likely to sustain the operation of an EEM installation service.

6.2 Interaction with customers

The installer shall have in place and operate a procedure to instruct each operative likely to have direct contact with customers, as to how to act in response to an approach from customers especially, but not exclusively, in respect of:

- a) pre-notified customer requirements and expectations particularly issues of work timing and access;
- b) agreed customer service requirements;
- c) customer questions or requests for information;
- d) customer request for additional measure-related work extending beyond the installation process definition;
- e) customer complaint or other customer feedback in respect some aspect of the installation or installation process;
- f) meeting the installers general responsibility for observing the customer service principles and requirements set out in the Green Deal Code of Practice for GDPs.

NOTE Attention is drawn to the accredited unit *Understand the Principles of Customer Service (MI/503/8827)* which forms part of the Sustainable Energy Efficiency qualification suite initiated by the Green Skills Alliance, and also to relevant sections of the *Trainer Resource Manual for Sustainable Energy Efficiency (TRP 152/SE)*, which may be of assistance in meeting the requirements of this clause.

6 Service provision

6.1 Complaints procedure

The installer shall have in place and operate a documented complaints procedure appropriate for:

- a) receiving, recording, acknowledging and resolving all complaints from customers. For installations under the Green Deal, the procedure shall include the procedure for transferring the complaint to the relevant GDP. For complaints about the installation, this procedure shall include taking steps to confirm that the complaint has been addressed by the GDP and the issue resolved.
- b) receiving, recording and addressing complaint from a GDP. The record shall include actions taken to resolve issues that have been the subject of complaint and of the outcome, including evidence that the GDP making the complaint is satisfied with the outcome.

7 Claims of conformity

The installation of each energy efficiency measure claimed to be in compliance with the requirements of this PAS shall be supported by a declaration of conformity to this PAS, issued to the customer and expressed in the form:

The installation of [energy efficiency measure] at [location of installation] and handed over on [date of handover] has been undertaken by [name of installer] using an installation process complying with PAS 2030:2014, including Annex(es) [insert references to relevant measure-specific Annex(es)].

NOTE The inclusion of reference to PAS 2030:2014 in relation to a particular installed measure represents the installer's declaration that the installation process used meets the requirements of this PAS. The accuracy of the claim is solely the claimant's responsibility and is not to be confused with third-party certification of conformity.

8 Documents essential to the application of the Annexes of this PAS

8.1 Use of the identified documents

The documents listed in 8.2 to 8.8 are cited in one or more of the measure-specific Annexes of this PAS and shall be used as required in the application of any Annex in which they are cited. For dated references, only the edition cited shall apply. For undated references, the latest edition of the referenced document (including any amendments) shall apply.

8.2 British Standards

BS 5410-1, *Code of practice for oil firing – Part 1: Installations up to 45 kW output capacity for space heating and hot water supply purposes.*

BS 5410-2, *Code of practice for oil firing – Part 2: Installations of 45 kW and above output capacity for space heating, hot water and steam supply service.*

BS 5440-1, *Flueing and ventilation for gas appliances of rated input not exceeding 70kW net (1st, 2nd, 3rd family gases) – Specification for installation of gas appliances to chimneys and for maintenance of chimneys.*

BS 5440-2, *Flueing and ventilation for gas appliances of rated input not exceeding 70 kW net (1st, 2nd and 3rd family gases) – Part 2: Specification for the installation and maintenance of ventilation provision for gas appliances.*

BS 5482-1, *Code of practice for domestic butane and propane gas burning installations – Part 1: Permanent dwellings.*

BS 5864, *Installation and maintenance of gas-fired ducted air heaters of rated heat input not exceeding 70 kW net (2nd and 3rd family gases). Specification.*

BS 5970 *Code of practice for thermal insulation of pipework and equipment in the temperature range of -100°C to +870°C*

BS 6644, *Specification for installation of gas-fired boilers of rated inputs between 70 kW (net) and 1.8 MW (net) (2nd and 3rd family gases).*

BS 6798, *Specification for installation and maintenance of gas-fired boilers of rated input not exceeding 70 kW net.*

BS 6891, *Installation of low pressure gas pipework of up to 35 mm (R1 1/4) in domestic premises (2nd family gas). Specification (including amendments).*

BS 6896, *Specification for installation and maintenance of gas-fired overhead radiant heaters for industrial and commercial heating (2nd and 3rd family gases)*

BS 7593, *Code of practice for treatment of water in domestic hot water central heating systems.*

BS 7671: *Requirements for electrical installations. IET Wiring Regulations.*

BS 8558, *Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings*

BS 8660-1, *Gas-fired micro-cogeneration appliances of rated thermal input not exceeding 70 kW net – Part 1: Specification for selection, installation, inspection, commissioning, servicing and maintenance of Stirling engine micro-cogeneration appliances.*

BS EN 378-1 *Refrigerating systems and heat pumps. Safety and environmental requirements. Basic requirements, definitions, classification and selection criteria*

BS EN 378-3 *Refrigerating systems and heat pumps. Safety and environmental requirements. Installation site and personal protection.*

BS EN 378-4 *Refrigerating systems and heat pumps. Safety and environmental requirements. Operation, maintenance, repair and recovery.*

BS EN 806-1 *Specifications for installations inside buildings conveying water for human consumption. General*

BS EN 806-4 *Specifications for installations inside buildings conveying water for human consumption. Installation*

BS EN 806-5 *Specifications for installations inside buildings conveying water for human consumption. Operation and maintenance*

BS EN 1264-1: *Water based surface embedded heating and cooling systems–Part 1: Definitions and symbols*

BS EN 1264-2: *Water based surface embedded heating and cooling systems– Part 2: Floor heating: Prove methods for the determination of the thermal output using calculation and test methods*

BS EN 1264-3: *Water based surface embedded heating and cooling systems–Part 3: Dimensioning*

BS EN 1264-4: *Water based surface embedded heating and cooling systems – Part 4: Installation.*

BS EN 1264-5: *Water based surface embedded heating and cooling systems– Part 5: Heating and cooling surfaces embedded in floors. Determination of the thermal output*

BS EN 12828: *Heating systems in Buildings. Design for water based heating systems*

BS EN 12831: *Heating systems in Buildings: Method for calculation of the design heat load*

BS EN 13120: *Internal blinds – Performance requirements including safety*

BS EN 13410: *Gas fired overhead radiant heaters. Ventilation requirements for non-domestic premises*

BS EN 13561: *External blinds – Performance requirements including safety*

BS EN 13659: *Shutters – Performance requirements including safety*

BS EN 14336: *including Corrigendum January 2009 Heating systems in buildings – Installation and commissioning of water based systems*

BS EN 15316-4-8: *Heating systems in buildings*

BS EN 16484: *Building automation and control systems (BACS). Project specification and implementation*

BS EN 62446: *Grid connected photovoltaic systems. Minimum requirements for system documentation, commissioning tests and inspection.*

8.3 Institution of Gas Engineer and Managers – Standards

Available from <http://www.igem.org.uk/technical-standards/igem-standards.aspx>

IGEM UP/1, 1A & 1B, *Strength testing, tightness testing and direct purging each standard covers industrial commercial and domestic testing and purging requirements.*

IGEM/UP/2, Edition 2, *Installation of pipework on industrial and commercial premises.*

IGEM/UP/7, Edition 2, *Gas installations in timber-framed and light steel buildings.*

IGEM UP/10, Edition 3, *Installation of flued gas appliances in industrial and commercial premises incorporating specific requirements for appliances fired by bio-fuels.*

8.4 Energy Networks Association Engineering Recommendations

(available from www.energynetworks.org/electricity/engineering/distributed-generation.html)

G59/2, *Distributed Generation Connection Guide – A guide for connecting generation that falls under G59/2 to the distribution network.*

G83/1-1, Stage 1: *Distributed Generation Connection Guide – A guide for connecting generation that falls under G83/1-1 STAGE 1 to the distribution network.*

G83/1-1, Stage 2: *Distributed Generation Connection Guide – A Guide for connecting generation that falls under G83/1-1 STAGE 2 to the distribution network.*

Recommendations for the Connection of Small-scale Embedded Generators (up to 16 A per phase) in Parallel with Public Low-voltage Distribution Networks

8.5 UKLPG

(available from www.uklpg.org/shop/codes-of-practice/)

Code of Practice 22, *Design installation and testing of LPG Piping Systems.*

8.6 Department of Communities and Local Government

Non-Domestic Building Services Compliance Guide (available from www.planningportal.gov.uk/uploads/br/non-domestic_building_compliance_guide_2013.pdf)

Domestic Building Services Compliance Guide (available from www.planningportal.gov.uk/uploads/br/domestic_building_compliance_guide_2013.pdf)

8.7 CITB

General requirements and guidance for the installation of cold roof loft insulation

<http://cutcarbon.info/media/53691/general-requirements-guidance-loft-insulation-september-2013.doc>

8.8 Common Minimum Technical Competence Annexes

CMTC Annexes 2-19 may be downloaded free of charge from:

<https://www.gov.uk/competent-person-scheme-current-schemes-and-how-schemes-are-authorised#minimum-technical-competence-mtc-requirements-for-competent-person-schemes> <http://www.summitskills.org.uk/public/cms/File/Corporate Documents/Complete CMTC Document Dec 11 v3 0.pdf>

CMTC Annex 2A – Common Process for HW, CW and 'Wet' Heating Systems (Domestic)

CMTC Annex 2B – Common Processes for HW, CW and 'Wet' Heating Systems (Non-domestic)

CMTC Annex 2C – Common Processes (Compressed Gas Welded Pipework)

CMTC Annex 2D – Common Processes (Manual Arc Welded Pipework)

CMTC Annex 4A – Oil Appliance Installation (Domestic)

CMTC Annex 4B – Oil Appliance Installation (Non-domestic)

CMTC Annex 4C – Oil Storage and Tank Systems

CMTC Annex 6A – Backflow Prevention

CMTC Annex 7A – Cold Water Systems (Domestic)

CMTC Annex 7B – Cold Water Systems (Non-Domestic)

CMTC Annex 9A – Hot Water Systems (Domestic)

CMTC Annex 9B – Unvented Hot Water Storage Systems

CMTC Annex 9C – Hot Water Systems (Non-domestic)

CMTC Annex 10A – 'Wet' Heating Systems (Domestic)

CMTC Annex 10B – Underfloor Heating

CMTC Annex 10C – 'Wet' Central Heating systems (Non-domestic)

CMTC Annex 10D – Warm Air Heating (Domestic)

CMTC Annex 10E – Warm Air Heating (Non-Domestic)

CMTC Annex 13A – Energy Efficiency (Domestic)

CMTC Annex 13B – Energy Efficiency (Non-domestic)

CMTC Annex 15A – Domestic Ventilation Systems Installation

CMTC Annex 15B – Mechanical Ventilation Systems Installation

CMTC Annex 15C – Air Handling Unit (Non-domestic)

CMTC Annex 15D – Plastic Ductwork Systems

CMTC Annex 15E – Fire-rated Ductwork Systems

CMTC Annex 16A – Air Conditioning Installation

The following annexes are available from:

<http://www.cutcarbon.info/training/common-minimum-technical-competencies-for-green-deal-competent-person-schemes.aspx?lang=en>

CMTC Annex BSS 1 – Install Door Systems, Blinds and Shutters

CMTC Annex CWI 1 – Determine the Suitability of the Building for Cavity Wall Insulation

CMTC Annex CWI 2 – Install Cavity Wall Insulation

CMTC Annex DP 1 – Determine the Suitability of a Building for Draught Proofing Work

CMTC Annex DP 2 – Install Draught Proofing to Doors, Windows and Access Hatches

CMTC Annex EWI 1 – Determine the Suitability of the Building for External Wall Insulation

CMTC Annex EWI 2 – Install External Wall Insulation

CMTC Annex EWI 3 – Apply Surface Finishes to External Wall Insulation

CMTC Annex HSI 1 – Determine the Suitability of a Building for Heating System Pipework and Cylinder Insulation

CMTC Annex HSI 2 – Install Insulation to Heating System Pipes and Cylinders

CMTC Annex INS 1 – Determine the Suitability of a Building for Roof, Loft or Floor Insulation Work

CMTC Annex INS 2 – Install Insulation to Framed Sections of Buildings

CMTC Annex IWI 1 – Determine the Suitability of a Building for Internal Wall Insulation Work

CMTC Annex LFT 1 – Install Loft Insulation

The following fenestration annexes are available from

<https://www.gov.uk/competent-person-scheme-current-schemes-and-how-schemes-are-authorised#minimum-technical-competence-mtc-requirements-for-competent-person-schemes>

Fenestration minimum technical competencies for surveyors

Fenestration minimum technical competencies for installers

PAS 2030:2014 Edition 1 – Improving the energy efficiency of existing buildings – Measure-specific annexes and installation project information collation form

Annex A

Energy efficiency measures and types with current and historic PAS 2030 annex references, arranged by measure category.

A1 Introduction

In this revision PAS 2030 additional energy efficiency measures have been added to the scope of the PAS, to reflect changes in the scope of the Green Deal but in line with the commitment made in the 2012 edition, the overall structure of the measure

specific annexes remains as in that edition. Tables A1, A2 and A3 continue to provide the reference for the relevant annex for each measure in this new edition of PAS 2030 alongside the corresponding annex reference from the original 2011 PAS, to assist cross referencing between the two.

Table A.1 – Category BFM (Building Fabric Measures)

Measure	Measure type	Measure reference	Current Annex	2012 Edition 1 Annex
Cavity wall insulation including that installed in party walls	As measure	BFM.1	B1	H
Draught proofing	As measure	BFM.2	B2	O
Energy efficient glazing and doors including replacement insulating glass units (IGU)	As measure	BFM.3	B3	R
External wall insulation	1. Site rendered external wall insulation systems	BFM.4.1	B4	M
	2. Pre-finished external wall insulation systems	BFM.4.2		
Flat roof insulation	As measure	BFM.5	B5	K
Floor Insulation	As measure	BFM.6	B6	P
Hybrid wall insulation	As measure	BFM.7	B7	N
Internal wall insulation	As measure	BFM.8	B8	L
Loft insulation	1. Roll insulation	BFM.9.1	B9	I
	2. Blown insulation	BFM.9.2		
Pitched roof insulation	As measure	BFM.10	B10	J
Solar blind, shutters and shading devices (internal and external)	1. Mechanically operated devices	BFM.11.1	B11	None
	2. Electrically operated devices	BFM.11.2		
Flexible thermal linings	As Measure	BFM.12	B12	None

Table A.2 – Category BSM (Building Services Mechanical)

Measure	Measure type		Measure reference	Current Annex	2012 Edition 1 Annex
Chillers	As measure		BSM.1	C1	None
Condensing boilers, natural gas-fired and liquefied petroleum gas-fired (domestic and non-domestic)	As measure		BSM.2	C2	A
Condensing boilers, oil-fired (domestic and non-domestic)	As measure		BSM.3	C3	B
Flue gas heat recovery devices	Devices for use with gas-fired condensing boilers (domestic scale)		BSM.4	C4	E
Heating system insulation	As measure		BSM.5	C5	Q
Heating, hot water system, air conditioning or ventilation system controls and components	1.	Heating and hot water system controls (domestic)	BSM.6.1	C6	C (extended)
	2.	Heating and hot water system controls (non-domestic)	BSM.6.2		
	3.	Air conditioning controls	BSM.6.3		
	4.	Ventilation controls	BSM.6.4		
	5.	Low energy circulator pumps	BSM.6.5		
	6.	Low temperature radiators and fan convectors	BSM.6.6		
Hot water systems	1.	Domestic hot water systems	BSM.7.1	C7	None
	2.	Non-domestic hot water systems	BSM.7.2		
Mechanical ventilation with heat recovery	1.	Domestic ventilation systems with heat recovery	BSM.8.1	C8	None
	2.	Non-domestic ventilation systems with heat recovery	BSM.8.2		
Radiant heating	Natural gas-fired and liquefied petroleum gas-fired radiant heating systems.		BSM.9	C9	None
Underfloor heating	Hydraulic (wet) systems*		BSM.10	C10	D
Warm-air heating	1.	Natural gas-fired and liquefied petroleum gas-fired warm air heating systems	BSM.11.1	C11	F (extended)
	2.	Oil-fired warm air heating systems	BSM.11.2		
		<i>NOTE: Electric warm air heating systems are included under the measure electric storage heaters (see Annex D1)</i>			
Water efficient taps and showers	As measure		BSM.12	C12	None

Table A.3 – Category BSE (Building Services Electrical)

Measure	Measure type	Measure reference	New Annex	2012 Edition 1 Annex
Electric storage heaters (including electric warm air heating units that incorporate heat storage)	Domestic electric storage heaters	BSE.1.1	D1	G (extended)
	Non-domestic electric storage heaters	BSE.1.2		
	Domestic electric storage heaters with warm air heat distribution	BSE.1.3		
	Non-domestic electric storage heaters with warm air heat distribution	BSE.1.4		
Light fittings, lighting systems and lighting system controls	Domestic	BSE.2.1	D2	S and T (merged)
	Non-domestic	BSE.2.2		
Variable speed drives for fans and pumps (non-domestic)	As measure	BSE.3	D3	None

A2 Explanation of PAS 2030 Annex referencing system.

EEM included in PAS 2030 are organised in three groups, building fabric measures (BFM), building services mechanical (BSM and building services electrical (BSE). These groups are each presented in an annex referenced as Annex B for BFM, Annex C for BSM and Annex D for BSE. Within these annexes, the related measures are each allocated a separate sub-annex e.g. B1, B2, B3 etc. Referencing within each sub-annex is as follows:

Annex B (normative) BFM energy efficiency measures

B1 Measure BFM.1 Cavity wall insulation including that installed in party walls

B, C, D There are three annexes each presenting a single category of energy efficiency measures (e.g. BFM, BSM, BEM).

B1, B2, C1, D1 etc Measure specific sub-annex reference, presented alongside title.

B1.1, B1.2, B1.3 etc – Measure focussed requirements clauses within each sub-annex B1.

Table B1 – table of required technical, competence and other requirements for sub-annex B1.

B1-I1, B1-I2, B1-I3 B1-I4 etc – line references within the table B1.

Annex B (normative)

BFM energy efficiency measures

B1 Measure BFM.1 Cavity wall insulation including that installed in party walls

B1.1 Additional installation requirements

When installing cavity wall insulation, in addition to meeting the core requirements set out in Clauses 4 to 7 of this PAS, the installer shall also work to any standards, specifications, instructions or guidance identified in **B1-I1** of **Table B.1**.

B1.2 Pre-installation survey requirements

Prior to commencing the physical installation of the cavity wall insulation on site, the installer shall undertake a pre-installation survey in accordance, as a minimum, with the requirements set out in **B1-I2** of **Table B.1**.

B1.3 Surveyor competence

When undertaking a pre-installation survey in respect of the installation of cavity wall insulation, the installer shall employ or contract only a surveyor meeting the competence requirements of **B1-I3** of **Table B.1**.

B1.4 Operative competence

When installing cavity wall insulation, the installer shall employ or contract only operatives with the required level of competence attained through one of the permitted routes (**B1-I4** of **Table B.1**), at the competency ratio specified in **B1-I6** of **Table B.1**.

B1.5 Provision of information in respect of cavity wall insulation

At the time of handover of the cavity wall insulation to the customer, the installer shall ensure that the information identified at **B1-I7** of **Table B.1** is provided to the customer as part of the handover process required in **4.12**.

Table B1 – Measure specific requirements for cavity wall insulation (BFM.1)

Measure description		Cavity Wall Insulation including that installed in party walls.
Measure type		As measure description (no sub-division)
B1-I1	Additional installation requirements to those in the core of this PAS (Clauses 4 to 7)	As required in Clause 4.4, the methods used for the installation of cavity wall insulation (CWI) products or systems shall be as specified by the supplier, where provided. The installer responsibilities include preparation of the site and finishing work, incorporating: • identification of essential ventilation openings that require sleeving or safeguarding before installation; • the position of all flues whether or not they are in service and measures that must be taken to safeguard their proper functioning; • ensuring that upon completion of the installation or at the end of each working day, if the installation takes longer than one day, the operatives investigate and confirm the proper functioning of all ventilation openings and flues. NOTE 1: Where a specialist operative is new to the role, it may be appropriate for a lower competency ratio to be applied. The relevant installation methods will have been included under current certification issued by a product certification body, with respect to the product/system to be installed, against UK requirements and regulation and the installer should be aware that training from the supplier or training acceptable to the supplier may be necessary before an application for assessment/certification is made to a certification body. NOTE 2: Attention is drawn to the need, where relevant, for all cavity wall insulation installation work to comply with the current Building Regulations that apply in the UK country in which the installation is being carried out. In particular, compliance in relation to the following aspects is highlighted: fire safety; resistance to moisture; ventilation; and conservation of fuel and power. Further guidance on the requirements of the Building Regulations in England and Wales is provided in Approved Documents A-P and Regulation 7: Workmanship and Materials. Further guidance on the requirements of the Building Regulations in Scotland is provided in the Domestic Technical Handbook and Non-domestic Technical Handbook. NOTE 3: Where the installation is to include party walls, the Installer should confirm with the EEM specifier that any necessary notices of work to be undertaken has been issued (e.g. any notice required under the Party Wall etc. Act 1996 – for more information see https://www.gov.uk/party-wall-etc-act-1996-guidance).

Table B1 – continued

B1-I2	Pre-installation survey requirements	As a minimum the pre-installation survey: • shall investigate and assess if the CWI installation work will: • result in non-compliance with the Building Regulations, e.g. in relation to workmanship; materials; structural stability; fire safety; resistance to moisture; • result in unsafe operation of a combustion appliances; • compromise the functionality of existing ventilation ducts/systems; • compromise the functionality and/or safety of existing services (gas, electric, water, telephone, etc.); • shall identify: • if the proposed installation would be non-compliant with any requirements stated by the supplier; • if the type and condition of the building structure is suitable for the works to commence; • the extent of the cavity to be filled; • if the site layout or conditions will impair the execution of the works; • if relevant checks have been undertaken to determine if asbestos containing materials are present.	
B1-I3	Surveyor competence requirements	Competence required	Route(s) to competence
		The requirements as defined in Common Minimum Technical Competence Annex CWI 1 – Determine the Suitability of a Building for Cavity Wall Insulation Work (including knowledge of the building type and construction concerned) and, where relevant, any specific competence requirements specified by the supplier.	England, Wales and Scotland As defined within Common Minimum Technical Competence Annex CWI 1 to include the following route options: 1) relevant QCF/SCQF qualifications or qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/ SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i>

Table B1 – continued

		3) member of a Building Regulations Competent Person Scheme for the type of work included under the scope of this Annex and on-site inspection of work;; 4) demonstrable knowledge and experience in relation to the competence in Annex CWI 1 gained through industry experience and verified by UKAS accredited certification body through a structured interview and on-site inspection of work; and evidence of product or system supplier surveyor approval, where relevant.
B1-l4	Operative threshold competence requirements	Competence required
		Health and safety competence in accordance with Construction Skills National Occupational Standard Unit COSVR 641 – <i>Conform to general workplace health, safety and welfare.</i> Route(s) to competence England, Wales and Scotland 1) Relevant QCF/SCQF qualification unit that covers the competence requirements in COSVR 641. 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) Demonstrable experience in relation to the competence in COSVR 641 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work.
	Operative specialist competence requirements	Competence required
		The knowledge requirements (including knowledge of the building type and construction concerned) as defined in the following Common Minimum Technical Competence Annex CWI 2 Installation of Cavity Wall Insulation. Annex CWI 2 is derived from, and is cross-referenced to, the following Construction Skills National Occupational Standard Unit COSVR 450 – <i>Install cavity wall insulation.</i> and, in addition, where relevant, specific training and/or competence requirements specified by the supplier. Route(s) to competence England, Wales and Scotland As defined within Common Minimum Technical Competence Annexes CWI 2 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery.

Table B1 – continued

		NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible. 3) member of a Building Regulations Competent Person Scheme for the type of work included under the scope of this Annex and on site inspection of work; 4) demonstrable knowledge and experience in relation to the competence in Annex CWI 2 gained through industry experience and verified by UKAS accredited certification body through a structured interview and on-site inspection of work; and evidence of product or system supplier approval, where relevant.
B1-I5	Current competency	To be verified by the installer in accordance with B1-I4 of Table B1 at no greater than 12-monthly intervals through examination of personnel records and inspection of work carried out on site. Where safety- or technical-critical revisions are made to the competency requirements in B1-I4 of Table B1, including any revisions to the cross-referenced documents, installers shall meet the requirements of the revisions within the time period stated at the time the revisions are introduced. NOTE 1: Initial and ongoing office and on-site surveillance to be carried out by UKAS accredited inspection bodies to ensure the requirements of the designer/supplier are met with regard to regulatory compliance. Inspection frequency shall be at least 1% of all site work undertaken NOTE 2: The time period for meeting the requirements of the revisions should be set in consultation with the UKAS accredited certification body(ies) and take account of the nature and level of risk associated with the reason(s) for the revisions.
B1-I6	Competence ratio	For each installation task to be undertaken, the installer shall employ or subcontract at the particular location, at least one carded operative that meets the operative competence requirements in full as specified in B4-I1 of Table B1. For each installation, the competence ratio (see 3.4) shall be determined by the installer in relation to the: a) range, scale, geographical spread and complexity of the work being undertaken; b) supervision and experience of the individual that meets the operative competence requirements for the relevant tasks and the experience of the individuals being supervised. NOTE: Where a specialist operative is new to the role, it may be appropriate for a lower competency ratio to be applied. For each installation task to be undertaken at a particular location the individual(s) that meet(s) the specialist operative competence requirements for that task shall inspect and confirm compliance of all work undertaken in respect of that task, at that location. NOTE: The carded operative must hold a document that shows the identity, currency of competence and authorisation of the operative for production upon request.
B1-I7	Measure-specific information to be handed over to the customer in addition to 4.12	Details of safe use and maintenance of the cavity wall insulation system, as specified by the supplier. Building Regulations compliance certificate where appropriate (or information explaining that a Building Regulations compliance certificate is required and will be provided within 30 days).

B2 Measure BFM.2 Draught proofing

B2.1 Additional installation requirements

When installing draught proofing, in addition to meeting the core requirements set out in Clauses 4 to 7 of this PAS the installer shall also work to any standards, specifications, instructions or guidance identified in B2-I1 of Table 2.

B2.2 Pre-installation survey requirements

Prior to commencing the physical installation of the draught proofing on-site the installer shall undertake a pre-installation survey in accordance, as a minimum, with the requirements set out in B2-I2 of Table B2.

B2.3 Surveyor competence

When undertaking a pre-installation survey in respect of the installation of draught proofing, the installer shall employ or contract only a surveyor meeting the competence requirements of B2-I3 of Table B2.

B2.4 Operative competence

When installing draught proofing, the installer shall employ or contract only operatives with the required level of competence attained through one of the permitted routes (B2-I4 of Table B2), at the competency ratio specified in B2-I6 of Table B2.

B2.5 Provision of information in respect of draught proofing

At the time of handover of the draught proofing to the customer, the installer shall ensure that the information identified at B2-I7 of Table B2 is provided to the customer as part of the handover process required in 4.12.

Table B2 – Measure-specific requirements for draught proofing (BFM.2)

Measure description		Draught Proofing
Measure type		As measure (no sub-division)
B2-I1	Additional installation requirements to those in the core of this PAS (Clauses 4 to 7)	As required in 4.4, the methods used for the installation of draught proofing products or systems shall be as specified by the supplier, where provided. The installer responsibilities include preparation of the site and finishing work. The relevant installation methods will have been included under current certification issued by a product certification body, with respect to the product/system to be installed, against UK requirements and regulation and the installer should be aware that training from the supplier or training acceptable to the supplier may be necessary before an application for assessment/certification is made to a certification body. <i>NOTE 1: Attention is drawn to the need, where relevant, for all draught proofing installation work to comply with the current Building Regulations that apply in the UK country in which the installation is being carried out. In particular, compliance in relation to the following aspects is highlighted: fire safety; resistance to moisture; ventilation; and conservation of fuel and power. Further guidance on the requirements of the Building Regulations in England and Wales is provided in Approved Documents A-P and Regulation 7: Workmanship and Materials. Further guidance on the requirements of the Building Regulations in Scotland is provided in the Domestic Technical Handbook and Non-domestic Technical Handbook.</i>

Table B2 – continued

B2-I2	Pre-installation survey requirements	As a minimum the pre-installation survey shall investigate and determine as far as practicable: • pre-existing damage to the areas that will be accessed by the installation operatives; • the extent of the area and elements to be draught-proofed; • if relevant checks have been undertaken to determine if asbestos-containing materials are present; • if the condition of the elements to be draught-proofed is suitable for the works to commence in relation to: • timbers free from rot and/or infestation; • metal components being free from visible signs of corrosion; • the surfaces that will receive draught-proofing materials being free from grease, etc.; • if the proposed installation would: • be non-compliant with any requirements stated by the designer/specifier; • compromise the functionality of existing ventilation systems in relation to air movement within the building; • result in unsafe operation of combustion appliances (combustion ventilation and or cooling ventilation); • if the site layout or conditions will impair the execution of the works in relation to appropriate access to the property and to the elements to be draught-proofed; • If the installation to be undertaken will result in non-compliance with the Building Regulations, e.g. in relation to workmanship; materials; structural stability; fire safety; resistance to moisture.	
B2-I3	Surveyor competence requirements	Competence required	Route(s) to competence
		The requirements as defined in Common Minimum Technical Competence Annex DP 1 – Determine the Suitability of a Building for Draught Proofing Work.	England and Wales
			As defined within Common Minimum Technical Competence Annex DP 1 to include the following route options:
			1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/ SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i>
			3) member of a Building Regulations Competent Person Scheme for the type of work included under the scope of this Annex and on site inspection of work; 4) demonstrable knowledge and experience in relation to the competence in Annex DP 1 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work.

Table B2 – continued

		Scotland As defined within Common Minimum Technical Competence Annex DP 1 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery; <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/ SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) demonstrable knowledge in relation to the competence in Annex DP 1 gained through industry experience and verified by UKAS accredited certification body through a structured interview and on-site inspection of work.	
B2-l4	Operative threshold competence requirements	Competence required	Route(s) to competence
		Health and safety competence in accordance with Construction Skills National Occupational Standard Unit COSVR 641 – <i>Conform to general workplace health, safety and welfare.</i>	England, Wales and Scotland 1) Achievement of the relevant QCF/SCQF qualification unit that covers the competence requirements in COSVR 641. 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery; <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/ SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) Demonstrable knowledge and experience in relation to the competence in COSVR 641 gained through industry experience and verified by UKAS accredited certification body and on-site inspection of work.

Table B2 – continued

Operative specialist competence requirements	Competence required	Route(s) to competence
	The requirements as defined in Common Minimum Technical Competence Annex DP 2 – Installation of Draught Proofing to Doors, Windows and Access Hatches. Annex DP 2 is derived from, and is cross-referenced to, the following Construction Skills National Occupational Standard Unit COSVR452 – <i>Install draught proofing to openings</i>.	England and Wales As defined within Common Minimum Technical Competence Annexes DP 2 to include the following route options: 1) achievement of the relevant QCF/SCQF qualification/qualification unit and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery; <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) member of a Building Regulations Competent Person Scheme for the type of work included under the scope of this Annex and on site inspection of work; 4) demonstrable knowledge and experience in relation to the competence in Annex DP 2 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work. Scotland As defined within Common Minimum Technical Competence Annexes DP 2 to include the following route options: 1) achievement of the relevant QCF/SCQF qualification/qualification unit and on-site inspection of work;

Table B2 – continued

		2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) demonstrable knowledge and experience in relation to the competence in Annex DP 2 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work.
B2-I5	Current competency	To be verified by the installer, in accordance with B2-I4 of Table B2 at no greater than 12-monthly intervals through examination of personnel records and inspection of work carried out on site. Where safety- or technical-critical revisions are made to the competency requirements in B2-I4 of Table B2, including any revisions to the cross-referenced documents, installers shall meet the requirements of the revisions within the time period stated at the time the revisions are introduced. <i>NOTE 1: Initial and ongoing office and on-site surveillance to be carried out by UKAS accredited inspection bodies to ensure the requirements of the designer/supplier are met with regard to regulatory compliance. Inspection frequency shall be at least 1% of all site work undertaken</i> <i>NOTE 2: The time period for meeting the requirements of the revisions should be set in consultation with the UKAS accredited certification body(ies) and take account of the nature and level of risk associated with the reason(s) for the revisions.</i>
B2-I6	Competence ratio	For each installation task to be undertaken, the installer shall employ or subcontract at the particular location, at least one operative that meets the operative competence requirements for the relevant tasks. For each installation, the competence ratio (see 3.4) shall be determined by the installer in relation to the: a) range, scale, geographical spread and complexity of the work being undertaken; b) supervision and experience of the individual that meets the operative competence requirements for the relevant tasks and the experience of the individuals being supervised. <i>NOTE: Where a specialist operative is new to the role, it may be appropriate for a lower competency ratio to be applied.</i> For each installation task to be undertaken at a particular location the individual(s) that meet(s) the specialist operative competence requirements for that task shall inspect and confirm compliance of all work undertaken in respect of that task, at that location.
B2-I7	Measure-specific information to be handed over to the customer in addition to 4.12	None.

B3 Measure BFM.3 – Energy efficient glazing and doors including replacement Insulating Glass Units (IGU)

B3.1 Additional installation requirements

When installing energy efficient glazing and doors, in addition to meeting the core requirements set out in Clauses 4 to 7 of this PAS, the installer shall also work to any standards, specifications, instructions or guidance identified in B3-I1 of Table B3.

B3.2 Pre-installation survey requirements

Prior to commencing the physical installation of the energy efficient glazing and doors on site, the installer shall undertake a pre-installation survey in accordance, as a minimum, with the requirements set out in B3-I2 of Table B3.

B3.3 Surveyor competence

When undertaking a pre-installation survey in respect of the installation of energy efficient glazing and doors, the installer shall employ or contract only a surveyor meeting the competence requirements of B3-I3 of Table B3.

B3.4 Operative competence

When installing energy efficient glazing and doors, the installer shall employ or contract only operatives with the required level of competence attained through one of the permitted routes (B3-I4 of Table B3), at the competency ratio specified in B3-I6 of Table B3.

B3.5 Provision of information in respect of energy efficient glazing and doors

At the time of handover of the energy efficient glazing and doors to the customer, the installer shall ensure that the information identified at B3-I7 of Table B3 is provided to the customer as part of the handover process required in 4.12.

Table B3 – Measure-specific requirements for energy efficient glazing and doors (BFM.3)

Measure description		Energy Efficient Glazing and Doors including replacement insulating glass units (IGU)
Measure type		As measure description (no sub-division)
B3-I1	Additional installation requirements to those in the core of this PAS (Clauses 4 to 7)	NOTE: Attention is drawn to the need for all energy efficient glazing and doors work to comply with the current Building Regulations that apply in the UK country in which the installation is being carried out. In particular, compliance in relation to the following aspects is highlighted: workmanship; materials; structural stability; fire safety; resistance to moisture; ventilation; conservation of fuel and power. Further guidance on the requirements of the Building Regulations in England and Wales is provided in Approved Documents A-P and Regulation 7: Workmanship and Materials. Further guidance on the requirements of the Building Regulations in Scotland is provided in the Domestic Technical Handbook and Non-domestic Technical Handbook. NOTE: For IGU replacements only safety glazing requirements are applicable.
B3-I2	Pre-installation survey requirements	As a minimum the pre-installation survey shall include: • review contract; • measurement check, include fire egress*; • assessment of structure*; • check for asbestos*; • safety glazing requirements; • check render and decorations condition*; • specialist access equipment; • explanation to building owner. NOTE: *not applicable to IGU replacement.

Table B3 – continued

		And shall investigate and assess if the installation to be undertaken will:	
		result in non-compliance with the Building Regulations, e.g. in relation to workmanship, materials, structural stability, fire safety, resistance to moisture.	
B3-I3	Surveyor competence requirements	Competence required	Route(s) to competence
		Competence in relation to survey requirements listed in B3-I2 of Table B3 in accordance with CMTC annex <i>Fenestration surveying (Windows and Doors)</i>	England and Wales As defined within Common Minimum Technical Competence Annex <i>Fenestration surveying (Windows and Doors)</i>, to include the following route options 1) Achievement of the relevant QCF/ SCQF qualification/ qualification units and evidence of work carried out that demonstrates practical competence; 2) Completion of other aligned training and certification and evidence of work carried out that demonstrates practical competence; Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery; NOTE: <i>Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/ SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) Member of a Competent Person Scheme, meeting the minimum technical competencies for the sector and and evidence of work carried out that demonstrates practical competence; 4) SVQ or NVQ Level 2/3 in Fenestration Installation & Surveying awarded within 5 years of date of application for certification and assessment for knowledge of and compliance with, current Building Regulations and evidence of work carried out that demonstrates practical competence. Scotland 1) Achievement of the relevant QCF/ SCQF qualification/ qualification units and evidence of work carried out that demonstrates practical competence;

Table B3 – continued

		2) Completion of other aligned training and certification and evidence of work carried out that demonstrates practical competence. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery; <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/ SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i>
		3) SVQ or NVQ Level 2/3 in Fenestration Installation & Surveying awarded within 5 years of date of application for certification and assessment for knowledge of and compliance with, current Building Regulations and evidence of work carried out that demonstrates practical competence.
B3-I4	Operative threshold competence requirements	Competence required
		Route(s) to competence
		Competence in accordance with CMTC annex <i>Fenestration installation (Windows and Doors)</i>
		England and Wales 1) Achievement of the relevant QCF/ SCQF qualification/ qualification units and evidence of work carried out that demonstrates practical competence; 2) Completion of other aligned training and certification and evidence of work carried out that demonstrates practical competence. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery; <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/ SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) Member of a Competent Person Scheme, meeting the minimum technical competencies for the sector and evidence of work carried out that demonstrates practical competence; 4) SVQ or NVQ Level 2/3 in Fenestration Installation & Surveying awarded within 5 years of date of application for certification and assessment for knowledge of and compliance with, current Building Regulations and evidence of work carried out that demonstrates practical competence.

Table B3 – continued

		Scotland 1) Achievement of the relevant QCF/ SCQF qualification/ qualification units and evidence of work carried out that demonstrates practical competence; 2) Completion of other aligned training and certification and evidence of work carried out that demonstrates practical competence. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery; <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/ SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) SVQ or NVQ Level 2/3 in Fenestration Installation & Surveying awarded within 5 years of date of application for certification and assessment for knowledge of and compliance with, current Building Regulations and evidence of work carried out that demonstrates practical competence.	
	Operative specialist competence requirements	Competence required	Route(s) to competence
		Competence as specified for threshold operatives with no additional requirements.	As identified for threshold operatives.
B3-I5	Current competency	The installer entity shall demonstrate at no greater than 12-monthly intervals to a certification body competence in accordance with B3-I3 and B3-I4 of Table B3 of their operatives by sample on-site inspection.	
B3-I6	Competence ratio	For each installation task to be undertaken, the installer shall employ or subcontract at the particular location, at least one operative that meets the operative competence requirements for the relevant tasks. For each installation, the competence ratio (see 3.4) shall be determined by the installer in relation to the: a) range, scale, geographical spread and complexity of the work being undertaken; b) supervision and experience of the individual that meets the operative competence requirements for the relevant tasks and the experience of the individuals being supervised. <i>NOTE: Where a specialist operative is new to the role, it may be appropriate for a lower competency ratio to be applied.</i> For each installation task to be undertaken at a particular location the individual(s) that meet(s) the specialist operative competence requirements for that task shall inspect and confirm compliance of all work undertaken in respect of that task, at that location.	
B3-I7	Measure-specific information to be handed over to the customer in addition to 4.12	Building Regulations compliance certificate (or information explaining that a Building Regulations compliance certificate is required and will be provided within 30 days). Relevant operating, maintenance, safety and security documentation relevant to the installation.	

B4 Measure BFM.4 – External wall insulation

B4.1 Additional installation requirements

When installing external wall insulation, in addition to meeting the core requirements set out in Clauses 4 to 7 of this PAS, the installer shall also work to any standards, specifications, instructions or guidance identified in B4-I1 of Table B4.

B4.2 Pre-installation survey requirements

Prior to commencing the physical installation of the external wall insulation on site, the installer shall undertake a pre-installation survey in accordance, as a minimum, with the requirements set out in B4-I2 of Table B4.

B4.3 Surveyor competence

When undertaking a pre-installation survey in respect of the installation of external wall insulation, the installer shall employ or contract only a surveyor meeting the competence requirements of B4-I3 of Table B4.

B4.4 Operative competence

When installing external wall insulation, the installer shall employ or contract only operatives with the required level of competence attained through one of the permitted routes (B4-I4 of Table B4), at the competency ratio specified in B4-I6 of Table B4.

B4.5 Provision of information in respect of external wall insulation

At the time of handover of the external wall insulation to the customer, the installer shall ensure that the information identified at B4-I7 of Table B4 is provided to the customer as part of the handover process required in 4.12.

Table B4 – Measure-specific requirements for external wall insulation (BFM.4)

Measure description		External Wall Insulation
Measure type		BFM.4.1 Site rendered external wall insulation systems
		BFM.4.2 Pre-finished external wall insulation systems
B4-I1	Additional installation requirements to those in the core of this PAS (Clauses 4 to 7)	As required in 4.4, the methods used for the installation of external wall insulation (EWI) products or systems shall be as specified by the supplier, where provided. The installer responsibilities include preparation of the site and finishing work incorporating: - identification of essential ventilation openings that require sleeving or safeguarding before installation; - the position of all flues whether or not they are in service and measures that must be taken to safeguard their proper functioning; - ensuring that upon completion of the installation or at the end of each working day, if the installation takes longer than one day, the Operatives investigate and confirm the proper functioning of all ventilation openings and flues. NOTE 1: The relevant installation methods will have been included under current certification issued by a product certification body, with respect to the product/system to be installed, against UK requirements and regulation and the installer should be aware that training from the supplier or training acceptable to the supplier may be necessary before an application for assessment/certification is made to a certification body. NOTE 2: Attention is drawn to the need, where relevant, for all external wall insulation installation work to comply with the current Building Regulations that apply in the UK country in which the installation is being carried out. In particular, compliance in relation to the following aspects is highlighted: fire safety; resistance to moisture; ventilation; and conservation of fuel and power. Further guidance on the requirements of the Building Regulations in England and Wales is provided in Approved Documents A-P and Regulation 7: Workmanship and Materials. Further guidance on the requirements of the Building Regulations in Scotland is provided in the Domestic Technical Handbook and Non-domestic Technical Handbook.

Table B4 – continued

B4-I2	Pre-installation survey requirements	As a minimum the pre-installation survey: • shall investigate and assess if the EWI installation work will: • result in non-compliance with the Building Regulations, e.g. in relation to workmanship, materials, structural stability, fire safety, resistance to moisture. • result in avoidable thermal bridging; • result in unsafe operation of combustion appliances; • compromise the functionality of existing ventilation ducts/systems; • compromise the functionality and/or safety of existing services (gas, electric, water, telephone, etc.); • shall identify if: • the proposed installation would be non-compliant with any requirements stated by the supplier; • the condition of the substrate is suitable for the works to commence; • there is a need for substrate pull-out or pull-off tests and/or other substrate preparation; • relevant checks have been undertaken to determine if asbestos-containing materials are present.	
B4-I3	Surveyor competence requirements	Competence required	Route(s) to competence
		The requirements (including knowledge of the building type and construction concerned) as defined in Common Minimum Technical Competence Annex EWI 1 – Determine the Suitability of a Building for External Wall Insulation Work and, where relevant, any specific competence requirements specified by the supplier.	England and Wales As defined within Common Minimum Technical Competence Annex EWI 1 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units. and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) member of a Building Regulations Competent Person Scheme for the type of work included under the scope of this Annex and on site inspection of work; 4) demonstrable knowledge and experience in relation to the competence in Annex EWI 1 gained through industry experience and verified by UKAS accredited certification body through a structured interview and on-site inspection of work; and evidence of product or system supplier surveyor approval, where relevant.

Table B4 – continued

		Scotland As defined within Common Minimum Technical Competence Annex EWI 1 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units. and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) demonstrable knowledge and experience in relation to the competence in Annex EWI 1 gained through industry experience and verified by UKAS accredited certification body through a structured interview and on-site inspection of work; and evidence of product or system supplier surveyor approval, where relevant.
B4-l4	Operative threshold competence requirements	Competence required
		Health and safety competence in accordance with Construction Skills National Occupational Standard Unit COSVR641 – <i>Conform to general workplace health, safety and welfare.</i> England, Wales and Scotland 1) Achievement of the relevant QCF/SCQF qualification unit that covers the competence requirements in COSVR461. 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) Demonstrable knowledge and experience in relation to the competence in COSVR 641 gained through industry experience and verified by UKAS accredited certification body through a structured interview and on-site inspection of work.

Table B4 – continued

Operative specialist competence requirements	Competence required	Route(s) to competence
	The knowledge requirements (including knowledge of the building type and construction concerned) as defined in the following Common Minimum Technical Competence Annexes where applicable to the scope of work undertaken: Annex EWI 2 – Installation of External Wall Insulation Work. Annex EWI 2 is derived from, and is cross-referenced to, the following Construction Skills National Occupational Standard Unit COSVR448 – <i>Install external wall insulation</i>. Annex EWI 3 – Applying Surface Finishes to External Wall Insulation. Annex EWI 3 is derived from, and is cross-referenced to, the following Construction Skills National Occupational Standard Unit COSVR449 – <i>Apply surface finishes to external wall insulation</i>. In addition, where relevant, specific training and/or competence requirements specified by the supplier	England and Wales As defined within Common Minimum Technical Competence Annexes EWI 2 and EWI 3 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) member of a Building Regulations Competent Person Scheme for the type of work included under the scope of this Annex and on site inspection of work; 4) demonstrable knowledge and experience in relation to the competence in Annexes EWI 2 and EWI 3 gained through industry experience and verified by UKAS accredited certification body through a structured interview and on-site inspection of work; and evidence of product or system supplier approval, where relevant. Scotland As defined within Common Minimum Technical Competence Annexes EWI 2 and EWI 3 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery.

Table B4 – continued

		NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible. 3) demonstrable knowledge and experience in relation to the competence in Annexes EWI 2 and EWI 3 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work; and evidence of product or system supplier approval, where relevant.
B4-I5	Current competency	To be verified by the installer, in accordance with B4-I4 of Table B4 at no greater than 12-monthly intervals through examination of personnel records and inspection of work carried out on site. Where safety- or technical-critical revisions are made to the competency requirements in B4-I4 of Table B4, including any revisions to the cross-referenced documents, installers shall meet the requirements of the revisions within the time period stated at the time the revisions are introduced. NOTE 1: Initial and ongoing office and on-site surveillance to be carried out by UKAS accredited inspection bodies to ensure the requirements of the designer/supplier are met with regard to regulatory compliance. Inspection frequency shall be at least 1% of all site work undertaken. NOTE 2: The time period for meeting the requirements of the revisions should be set in consultation with the UKAS accredited certification body(ies) and take account of the nature and level of risk associated with the reason(s) for the revisions.
B4-I6	Competence ratio	For each installation task to be undertaken, the installer shall employ or subcontract at the particular location, at least one carded operative that meets the operative competence requirements in full for the relevant tasks, as specified in B4-I4 of Table B4. For each installation, the competence ratio (see 3.4) shall be determined by the installer in relation to the: a) range, scale, geographical spread and complexity of the work being undertaken; b) supervision and experience of the individual that meets the operative competence requirements for the relevant tasks and the experience of the individuals being supervised. NOTE: Where a specialist operative is new to the role, it may be appropriate for a lower competency ratio to be applied.
B4-I7	Measure-specific information to be handed over to the customer in addition to 4.12	• Details of safe use and maintenance of the external wall insulation system, as specified by the supplier. • Where end-user maintenance possible, details on how to undertake the maintenance, including details of any product or tools that must be used and details of where to obtain the required products and tools. • Building Regulations compliance certificate (or information explaining that a Building Regulations compliance certificate is required and will be provided within 30 days).

B5 Measure BFM.5 Flat roof insulation

B5.1 Additional installation requirements

When installing flat roof insulation, in addition to meeting the core requirements set out in Clauses 4 to 7 of this PAS, the installer shall also work to any standards, specifications, instructions or guidance identified in B5-I1 of Table B5.

B5.2 Pre-installation survey requirements

Prior to commencing the physical installation of the flat roof insulation on site, the installer shall undertake a pre-installation survey in accordance, as a minimum, with the requirements set out in B5-I2 of Table B5.

B5.3 Surveyor competence

When undertaking a pre-installation survey in respect of the installation of flat roof insulation, the installer shall employ or contract only a surveyor meeting the competence requirements of B5-I3 of Table B5.

B5.4 Operative competence

When installing flat roof insulation, the installer shall employ or contract only operatives with the required level of competence attained through one of the permitted routes (B5-I4 of Table B5), at the competency ratio specified in B5-I6 of Table B5.

B5.5 Provision of information in respect of flat roof insulation

At the time of handover of the flat roof insulation to the customer, the installer shall ensure that the information identified at B5-I7 of Table B5 is provided to the customer as part of the handover process required in 4.12.

Table B5 – Measure-specific requirements for flat roof insulation (BFM.5)

Measure description		Flat Roof Insulation
Measure type		As measure description (no sub-divisions)
B5-I1	Additional installation requirements to those in the core of this PAS (Clauses 4 to 7)	As required in 4.4, the methods used for the installation of flat roof insulation products or systems shall be as specified by the supplier, where provided. The installer responsibilities include preparation of the site and finishing work incorporating: - identification of essential ventilation openings that require sleeving or safeguarding before installation; - the position of all flues whether or not they are in service and measures that must be taken to safeguard their proper functioning; - ensuring that upon completion of the installation or at the end of each working day, if the installation takes longer than one day, the operatives investigate and confirm the proper functioning of all ventilation openings and flues. NOTE 1: The relevant installation methods will have been included under current certification issued by a product certification body, with respect to the product/system to be installed, against UK requirements and regulation and the installer should be aware that training from the supplier or training acceptable to the supplier may be necessary before an application for assessment/certification is made to a certification body. NOTE 2: Attention is drawn to the need, where relevant, for all flat roof insulation installation work to comply with the current Building Regulations that apply in the UK country in which the installation is being carried out. In particular, compliance in relation to the following aspects is highlighted: fire safety; resistance to moisture; ventilation; and conservation of fuel and power. Further guidance on the requirements of the Building Regulations in England and Wales is provided in Approved Documents A-P and Regulation 7: Workmanship and Materials. Further guidance on the requirements of the Building Regulations in Scotland is provided in the Domestic Technical Handbook and Non-domestic Technical Handbook.

Table B5 – continued

B5-I2 Pre-installation survey requirements	As a minimum the pre-installation survey shall investigate and determine as far as practicable: • pre-existing damage to the areas that will be accessed by the installation operatives; • the extent of the area and elements to be insulated; • if relevant checks have been undertaken to determine if asbestos-containing materials are present; • if the condition of the roof is suitable for the works to commence in relation to: • existence of appropriate roof space ventilation arrangements; • the roof space being free from rodents/pests and protected species, e.g. bats; • timbers free from rot and/or infestation; • the condition of the ceiling (if applicable); • metal structural roof members being free from visible signs of corrosion; • electrical wiring is free from visible defects, e.g. damaged cables, trailing cables, exposed conductors; • no visible signs of water penetration; • no visible signs of leakage from water system components, e.g. pipework; • If the proposed installation would: • be non-compliant with any requirements stated by the designer/ specifier; • compromise the functionality of existing air supply/extract ventilation ducts/systems; • result in unsafe operation of a combustion appliances; • if the site layout or conditions will impair the execution of the works in relation to appropriate access to the property and to the elements to be insulated; • If the installation to be undertaken will result in non-compliance with the Building Regulations, e.g. in relation to workmanship; materials; structural stability; fire safety; resistance to moisture.				
B5-I3 Surveyor competence requirements	<table border="1"> <thead> <tr> <th data-bbox="571 986 1019 1037">Competence required</th><th data-bbox="1019 986 2011 1037">Route(s) to competence</th></tr> </thead> <tbody> <tr> <td data-bbox="571 1037 1019 1528"> The requirements as defined in Common Minimum Technical Competence Annex INS 1 – Determine the Suitability of a Building for Roof, Loft or Floor Insulation Work. </td><td data-bbox="1019 1037 2011 1528"> England and Wales As defined within Common Minimum Technical Competence Annex INS 1 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> </td></tr> </tbody> </table>	Competence required	Route(s) to competence	The requirements as defined in Common Minimum Technical Competence Annex INS 1 – Determine the Suitability of a Building for Roof, Loft or Floor Insulation Work.	England and Wales As defined within Common Minimum Technical Competence Annex INS 1 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i>
Competence required	Route(s) to competence				
The requirements as defined in Common Minimum Technical Competence Annex INS 1 – Determine the Suitability of a Building for Roof, Loft or Floor Insulation Work.	England and Wales As defined within Common Minimum Technical Competence Annex INS 1 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i>				

Table B5 – continued

		3) member of a Building Regulations Competent Person Scheme for the type of work included under the scope of this Annex and on site inspection of work; 4) demonstrable knowledge and experience in relation to the competence in Annex INS 1 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work. Scotland As defined within Common Minimum Technical Competence Annex INS 1 to include the following route options: 1) relevant QCF/SCQF qualifications/qualification units and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i> 3) demonstrable knowledge and experience in relation to the competence in Annex INS 1 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work.	
B5-14	Operative threshold competence requirements	Competence required	Route(s) to competence
		Health and safety competence in accordance with Construction Skills National Occupational Standard Unit COSVR 641 – <i>Conform to general workplace health, safety and welfare.</i>	England, Wales and Scotland 1) Achievement of the relevant QCF/SCQF qualification unit that covers the competence requirements in COSVR 641. 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery.

Table B5 – continued

Operative specialist competence requirements		NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.
		3) Demonstrable knowledge and experience in relation to the competence in COSVR 641 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work.
	Competence required	Route(s) to competence
	The requirements as defined in Common Minimum Technical Competence Annex INS 2 – Installation of Insulation to Framed Sections of Buildings and Internal Walls. Annex INS 2 is derived from, and is cross-referenced to, the following Construction Skills National Occupational Standard Unit COSVR645 – <i>Install insulation to framed sections of buildings</i>.	England and Wales As defined within Common Minimum Technical Competence Annexes INS 2 to include the following route options: 1) achievement of the relevant QCF/SCQF qualifications/qualification unit and on-site inspection of work; 2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible. 3) member of a Building Regulations Competent Person Scheme for the type of work included under the scope of this Annex and on site inspection of work; 4) demonstrable knowledge and experience in relation to the competence in Annex INS 2 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work. Scotland As defined within Common Minimum Technical Competence Annexes INS 2 to include the following route options: 1) achievement of the relevant QCF/SCQF qualifications/qualification unit and on-site inspection of work;

Table B5 – continued

		2) Completion of other aligned training and certification and on site inspection of work. Alignment of courses shall be on the basis of mapping to the relevant Minimum Technical Competency Annex and acceptance by the responsible Sector Skills Council (SSC) or other Standards Setting Organization (SSO), supported by periodic confirmation of delivery. <i>NOTE: Where such mapping and acceptance processes are already established for a particular sector, they should be used. Where existing processes are not available, a training body wishing to have its courses mapped should determine in conjunction with the relevant SSC/SSO, a means of assessing technical competence equivalent to the mapping and acceptance applied in respect of already accepted courses and then work towards the development of a formal mapping and assessment framework for the new courses, as soon as possible.</i>
		3) demonstrable knowledge and experience in relation to the competence in Annex INS 2 gained through industry experience and verified by UKAS accredited certification body through on-site inspection of work.
B5-I5	Current competency	To be verified by the installer, in accordance with B5-I4 of Table B5 at no greater than 12-monthly intervals through examination of personnel records and inspection of work carried out on site. Where safety- or technical-critical revisions are made to the competency requirements in B5-I4 of Table B5, including any revisions to the cross-referenced documents, installers shall meet the requirements of the revisions within the time period stated at the time the revisions are introduced. <i>NOTE 1: Initial and ongoing office and on-site surveillance to be carried out by UKAS accredited inspection bodies to ensure the requirements of the designer/supplier are met with regard to regulatory compliance. Inspection frequency shall be at least 1% of all site work undertaken.</i> <i>NOTE 2: The time period for meeting the requirements of the revisions should be set in consultation with the UKAS accredited certification body(ies) and take account of the nature and level of risk associated with the reason(s) for the revisions.</i>
B5-I6	Competence ratio	For each installation task to be undertaken, the installer shall employ or subcontract at the particular location, at least one operative that meets the operative competence requirements for the relevant tasks. For each installation, the competence ratio (see 3.4) shall be determined by the installer in relation to the: a) range, scale, geographical spread and complexity of the work being undertaken; b) supervision and experience of the individual that meets the operative competence requirements for the relevant tasks and the experience of the individuals being supervised. <i>NOTE: Where a specialist operative is new to the role, it may be appropriate for a lower competency ratio to be applied.</i> For each installation task to be undertaken at a particular location the individual(s) that meet(s) the specialist operative competence requirements for that task shall inspect and confirm compliance of all work undertaken in respect of that task, at that location.
B5-I7	Measure-specific information to be handed over to the customer in addition to 4.12	Building Regulations compliance certificate (or information explaining that a Building Regulations compliance certificate is required and will be provided within 30 days).

B6 Measure BFM.6 Floor insulation

B6.1 Additional installation requirements

When installing floor insulation, in addition to meeting the core requirements set out in Clauses 4 to 7 of this PAS, the installer shall also work to any standards, specifications, instructions or guidance identified in B6-I1 of Table B6.

B6.2 Pre-installation survey requirements

Prior to commencing the physical installation of the floor insulation on site, the installer shall undertake a pre-installation survey in accordance, as a minimum, with the requirements set out in B6-I2 of Table B6.

B6.3 Surveyor competence

When undertaking a pre-installation survey in respect of the installation of floor insulation, the installer shall employ or contract only a surveyor meeting the competence requirements of B6-I3 of Table B6.

B6.4 Operative competence

When installing floor insulation, the installer shall employ or contract only operatives with the required level of competence attained through one of the permitted routes (B6-I4 of Table B6), at the competency ratio specified in B6-I6 of Table B6.

B6.5 Provision of information in respect of floor insulation

At the time of handover of the floor insulation to the customer, the installer shall ensure that the information identified at B6-I7 of Table B6 is provided to the customer as part of the handover process required in 4.12.

Table B6 – Measure-specific requirements for floor insulation (BFM.6)

Measure description		Floor Insulation
Measure type		As measure description (no sub-division)
B6-I1	Additional installation requirements to those in the core of this PAS (Clauses 4 to 7)	As required in 4.4, the methods used for the installation of floor insulation products or systems shall be as specified by the supplier, where provided. The installer responsibilities include preparation of the site and finishing work. <i>NOTE 1: The relevant installation methods will have been included under current certification issued by a product certification body, with respect to the product/system to be installed, against UK requirements and regulation and the installer should be aware that training from the supplier or training acceptable to the supplier may be necessary before an application for assessment/certification is made to a certification body.</i> <i>NOTE 2: Attention is drawn to the need, where relevant, for all floor insulation installation work to comply with the current Building Regulations that apply in the UK country in which the installation is being carried out. In particular, compliance in relation to the following aspects is highlighted: fire safety; resistance to moisture; ventilation; and conservation of fuel and power. Further guidance on the requirements of the Building Regulations in England and Wales is provided in Approved Documents A-P and Regulation 7: Workmanship and Materials. Further guidance on the requirements of the Building Regulations in Scotland is provided in the Domestic Technical Handbook and Non-domestic Technical Handbook.</i>
B6-I2	Pre-installation survey requirements	As a minimum the pre-installation survey shall investigate and determine as far as practicable: • pre-existing damage to the areas that will be accessed by the installation operatives; • the extent of the area and elements to be insulated; • if relevant checks have been undertaken to determine if asbestos-containing materials are present;