



## IRISH AGRÉMENT BOARD CERTIFICATE NO. 20/0421

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# Alsecco External Insulation Systems

**NSAI Agrément (Irish Agrément Board)** is designated by Government to issue European Technical Approvals.

NSAI Agrément Certificates establish proof that the certified products are '**proper materials**' suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2019**.



## PRODUCT DESCRIPTION

This Certificate relates to the Alsecco External Insulation Systems. The systems are comprised of:

- Surface preparation of masonry or concrete substrate;
- Full system beads and render only beads;
- Insulation boards (expanded polystyrene, mineral wool);
- Base coat with reinforcement;
- Decorative finishes (mineral, silicone, silicate, acrylic, dry dash)
- Mechanical fixings;
- Adhesive fixings;
- Weather tight joints;
- Movement joints;
- Provision for limiting cold bridging at external junctions in compliance with Acceptable Construction Details published by DHPLG.
- Provision for fire stopping at external compartment walls and floors.

Alsecco GmbH is responsible for the manufacture and supply of all components through Alsecco UK Ltd to approved specifications.

Alsecco UK Ltd has appointed Ikonic Distribution Ltd as their distribution partner in Ireland.

The system is designed by Ikonic Distribution Ltd on a project specific basis in accordance with an approved design process.

The installation of the system is carried out by installers who have been trained by Ikonic Distribution Ltd, and who are approved by Ikonic Distribution Ltd and NSAI Agrément to install the system. Applicators must adhere to strict installation guidelines as specified by Ikonic Distribution Ltd.

**Readers are advised to check that this Certificate has not been withdrawn or superseded by a later issue by contacting NSAI Agrément, NSAI, Santry, Dublin 9 or online at 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

In the opinion of NSAI, the Alsecco External Insulation Systems as described in this Certificate, comply with the requirements of the Building Regulations 1997 to 2019.

#### **USE**

Alsecco External Insulation Systems are for the external insulation of:

- (a) New and existing concrete or masonry dwellings;
- (b) New concrete or masonry commercial or industrial buildings which are designed in accordance with the Building Regulations 1997 to 2019.

The Alsecco External Insulation Systems are suitable for use up to a maximum of six storeys (18m) in height in purpose groups 1(a), 1(c), 1(d), 2(a), 2(b), 3, 4(a) and 4(b), and for use up to a maximum of five storeys (15 metres) in height in purpose group 1(b), as defined in TGD to Part B of the Building Regulations 1997 to 2019.

The systems have not been assessed for use with timber frame or steel frame construction.

#### **MANUFACTURE, DESIGN & MARKETING**

The system is designed and manufactured by:

Alsecco GmbH,  
Kupferstraße 50,  
36208 Wildeck,  
Germany

Project specific design, technical support, sales, and applicator approval are performed by:

Ikonic Distribution Ltd,  
Unit 1,  
Oola Enterprise Centre,  
Oola,  
Co. Limerick  
T: 062 47255  
M: 085 863 1124

## 1.1 ASSESSMENT

The external insulation systems included in this Certificate, which have been tested in accordance with the requirements of ETAG 004, have been assessed against the specific requirements of the Irish Building Regulations, including method of installation, approval and training of installers, and maintenance requirements of the installed system.

In the opinion of NSAI Agrément, Alsecco External Insulation Systems, when installed by Ikonik Distribution Ltd trained and approved contractors registered with NSAI, in accordance with this Certificate and Ikonik Distribution Ltd specific design, can meet the requirements of the Building Regulations 1997 to 2019, as indicated in Clause 1.2 of this Agrément Certificate.

## 1.2 BUILDING REGULATIONS 1997 to 2019

### REQUIREMENTS:

#### **Part D – Materials and Workmanship**

##### **D3 – Proper Materials**

Alsecco External Insulation Systems, as certified in this Certificate, are comprised of 'proper materials' fit for their intended use.

##### **D1 – Materials & Workmanship**

Alsecco External Insulation Systems, as certified in this Certificate, meet the requirements for workmanship.

#### **Part A - Structure**

##### **A1 – Loading**

Alsecco External Insulation Systems, once appropriately designed and installed in accordance with this Certificate, have adequate strength and stability to meet the requirements of this Regulation.

##### **A2 – Ground Movement**

Alsecco External Insulation Systems can be incorporated into structures that will meet this requirement.

#### **Part B – Fire Safety**

##### **B4 – External Fire Spread**

##### **Part B Vol 2 – Fire Safety**

##### **B9 – External Fire Spread**

Alsecco External Insulation Systems can be incorporated into structures that will meet this requirement.

#### **Part C – Site Preparation and Resistance to Moisture**

##### **C4 – Resistance to Weather and Ground Moisture**

External walls have adequate weather resistance in all exposures to prevent the passage of moisture from the external atmosphere into the building.

#### **Part F – Ventilation**

##### **F2 – Condensation in Roofs**

The systems as certified can be incorporated into structures that will meet the requirements of this Regulation.

#### **Part J – Heat Producing Appliances**

##### **J3 – Protection of Building**

When Alsecco External Insulation Systems are used in accordance with this Certificate, wall lining, insulation and separation distances meet this requirement.

#### **Part L – Conservation of Fuel and Energy**

##### **L1 – Conservation of Fuel and Energy**

The walls of Alsecco External Insulation Systems can be readily designed to incorporate the required thickness of insulation onto existing buildings to meet the Elemental Heat Loss method calculations for walls as recommended in TGD to Part L of the Building Regulations 1997 to 2019.

##### **L2 – Conservation of Fuel and Energy**

At interface junctions at windows and at junctions between elements, the Alsecco system installation details have been assessed, and when installed in accordance with this Certificate and the Certificate holder's approved installation details, excessive heat losses and local condensation problems associated with thermal bridging will be avoided.

## 2.1 PRODUCT DESCRIPTION

Table 1-a and Table 1-b list the full components of the Alsecco External Insulation Systems.

The systems can be applied on a variety of existing vertical external surfaces such as brick or rendered masonry walls.

The substrate on which Alsecco External Insulation Systems will be used must have a reaction to fire class A1 or A2-s1 d0 in accordance with I.S. EN 13501-1<sup>[5]</sup>.

### 2.1.1 Ancillary Materials

- Alsecco profiles, comprising:
  - Aluminium, PVC-U or stainless-steel base profile
  - Aluminium, PVC-U or stainless-steel edge profile
  - Aluminium, PVC-U or stainless-steel corner profile with optional PVC-U nosing
  - Aluminium, PVC-U or stainless-steel render stop profile
  - Aluminium, PVC-U or stainless-steel expansion and movement joint profiles
- Alsecco profile connectors and fixings
- Alsecco sealing tape – pre-compressed expanding polyurethane foam tape
- Alsecco acrylic-based joint sealant
- Alsecco PU foam filler

All ancillary materials are outside the scope of this certificate.

## 2.2 MANUFACTURE, SUPPLY AND INSTALLATION

Alsecco GmbH is responsible for the manufacture of all components to approved specifications. Alsecco GmbH has appointed Ikonic Distribution Ltd as distribution partner in Ireland, with responsibility for:

- Project specific design in accordance with approved design process;
- Preliminary project assessment incorporating wind load calculations, U-value calculations, condensation risk analysis, impact resistance, substrate suitability and pull-out testing of fixings;
- Training, monitoring and review of licensed applicators in accordance with approved training and assessment procedures;
- Product supply and documentation control;
- Technical support and installation supervision;
- Sales and marketing.

The installation of Alsecco External Insulation Systems is carried out by Ikonic Distribution Ltd trained and approved installers in accordance with Ikonic Distribution Ltd project specific specifications and method statements. Installers must also be approved and registered by NSAI Agrément under the NSAI Agrément External Thermal Insulating Composite Systems (ETICS) Approval Scheme.

### 2.2.1 Quality Control

The manufacturer operates a quality management system, and a quality plan is in place for system manufacture, system design and system installation.

## 2.3 DELIVERY, STORAGE AND HANDLING

The insulation is delivered to site in packs. Each pack is marked with the manufacturer's details, product identification marks and batch numbers. See Table 1-a and Table 1-b for the designation code that must be included on the insulation identification label.

Each container for other components, e.g. renders, adhesives etc., bears the manufacturer's and the product's identification marks and batch number, and the NSAI Agrément logo incorporating the Certificate number.

Insulation should be stored on a firm, clean, dry and level base, which is off the ground. The insulation should be protected from prolonged exposure to sunlight by storing opened packs under cover in dry conditions or by re-covering with opaque polythene sheeting. Care must be taken when handling the insulation boards, to avoid damage and contact with solvents or bitumen products. The boards must not be exposed to ignition sources.

Mesh-cloth, primers, renders, paints, texture synthetic finish coatings and sealants should be stored in accordance with the manufacturer's instructions, in dry conditions, at the required storage temperatures. They should be used within the stated shelf life.

## 2.4 INSTALLATION

### 2.4.1 Approved Installers

Installation shall be carried out by Ikonic Distribution Ltd trained applicators who are registered with NSAI Agrément.

### 2.4.2 General

Ikonic Distribution Ltd prepare a site package for each project, in accordance with the NSAI

Agrément ETICS Approval Scheme. Deviations must be approved by an Ikonik Distribution Ltd technical representative. Ikonik Distribution Ltd technical representatives will visit each site on a regular basis to ensure that work is carried out in accordance with the project specific site package, including the Certificate holder's installation manual. Ikonik Distribution Ltd guarantee and homeowner's manual will be issued on successful completion and sign-off of completed projects.

Mineral wool batts and lamella fire stop must be protected from moisture prior to and during installation. It may be necessary to remove and replace any unsuitable/wet material.

External works that leave the external appearance of the building inconsistent with neighbouring buildings may require planning permission. The status of this requirement should be checked with the local planning authority as required.

To maximise thermal performance, reference should be made to the requirements of Section 2 of the Acceptable Construction Details document (ACD).

This Certificate does not contain a full set of installation instructions, but an overview of the procedures involved. For a full list of these instructions, refer to the Certificate holder's manuals. Should a conflict arise between this Certificate and the Certificate holder's manuals, this Certificate shall take precedence.

#### **2.4.3 Site Survey and Preliminary Work**

A comprehensive pre-installation site survey of the property shall be carried out in accordance with the NSAI Agrément ETICS Approval Scheme.

The substrate must be free of water repellents, dust, dirt, efflorescence and other harmful contaminants or materials that may interfere with the adhesive bond. Remove projecting mortar or concrete parts mechanically as required. Where the substrate contains dash, it must be levelled as much as possible with a layer of adhesive base coat prior to the application of the insulation boards/batts.

Where discrepancies exist preventing installation of the system in accordance with this Certificate and the Certificate holder's instructions, these discrepancies must be discussed with the Certificate holder and a solution implemented with the approval of the Certificate holder.

#### **2.4.4 Procedure**

The systems must be installed in accordance with the Certificate holder's instructions. Key points include:

- Weather conditions must be monitored to ensure correct application and curing

conditions. Renders (adhesives, base coats, primers, finish coats) must not be applied if the temperature is below 5°C or above 25°C at the time of applications. In addition, cementitious-based renders must not be applied if the temperature will be below 0°C at any time during 72 hours after application; cement-free, synthetic-resin and silicone-resin plasters must not be applied if the temperature will be below 5°C at any time during 72 hours after application; silicate plasters must not be applied if the temperature will be below 8°C at any time during 72 hours after application.

- Until fully cured, the coatings must be protected from rapid drying, precipitation, direct sunlight and strong wind.
- To avoid thermal bridging, ensure a tight adhesive free joint connection between adjacent insulation boards. Foam filler approved by the Certificate holder may be used for filling gaps up to 5mm. Larger gaps should be avoided, where larger gaps greater than 5mm cannot be practically avoided these gaps shall be filled with ETICS insulation material cut to size and sufficiently fixed to substrate.
- Window and door reveals should, where practicable, be insulated to minimise the effects of cold bridging in accordance with the recommendations of the Acceptable Construction Details Document published by the DHPLG, Detail 2.21, to achieve a minimum R-value of 0.6m<sup>2</sup>K/W. Ideally windows should be moved forward to the plane of the external insulation to limit the effects of thermal bridging at the reveal. Where clearance is limited, strips of approved insulation should be installed to suit available margins and details recorded as detailed in Clause 3.7 of this Certificate.
- Refer to the Certificate holder's instructions and the project specific site package regarding the installation method and location of the SS fixings through the reinforcing mesh where fire stops have been installed. Additional layers of mesh are also applied at these locations. Stainless steel fire fixings to be provided at a rate of one per square metre above two stories. The fixing design should take account of the extra duty required under fire conditions.
- Purpose-made powder coated aluminium window sills are installed in accordance with the Certificate holder's instructions. These sills incorporate an insulation board fixed between them and the existing sill to limit the effects of thermal bridging. They are designed to prevent water ingress and incorporate drips to shed water clear of the system.
- All necessary post-application inspections should be performed and the homeowner's manual completed and handed over to the homeowner accordingly.



	Components	Thickness (mm)
<b>Adhesives</b>	<ul style="list-style-type: none"> <li>• <b>Armatop AKS, Armatop A, Armatop L-Aero, Armatop MP, Dämmkleber MK, Armatop Uni</b> Cement-based powders requiring addition of water.</li> <li>• <b>Armatop Quattro, Dämmkleber FW, Two in One, Two in One Light, Armatop Carbon</b> Cement-free ready to use pastes.</li> </ul>	
<b>Insulation</b>	<ul style="list-style-type: none"> <li>• <b>EPS</b> EPS-EN13163-T1-L1 or L2-W2-S2-P5-DS(70,-)2 or DS(70,-)1-DS(70,90)1-DS(N)2-TR80, TR100, TR150, Reaction to fire Class E, diffusion factor (<math>\mu</math>) 20 to 78</li> </ul>	60 to 400
<b>Plinth Insulation</b>	<ul style="list-style-type: none"> <li>• <b>XPS</b> XPS 300/500/700 (extruded polystyrene), 2500mm x 600mm, nominal density of 30/35/45kg/m<sup>3</sup>, compressive strength or 300/500/700kN/m<sup>2</sup></li> </ul>	30 to 150
<b>Mechanical Fixings</b>	<ul style="list-style-type: none"> <li>• <b>WS 8 L, WS 8 N</b></li> <li>• <b>ejotherm SDK U, NK U, SK U</b></li> <li>• <b>IsoFux ND-8Z</b></li> <li>• <b>SDF-K plus, SDF-S plus</b></li> <li>• <b>Hilti ETICS screwed-in anchor D 8-FV</b></li> </ul> <p>And fixings with ETA according to ETAG 014 with plate diameter <math>\geq</math> 60mm, plate stiffness <math>\geq</math> 0.3kN/mm and load resistance of anchor plate <math>\geq</math> 1.0kN.</p>	
<b>Basecoat</b>	<ul style="list-style-type: none"> <li>• <b>Armatop Quattro, Two in One Light, Armatop Carbon</b> Ready to use paste (cement free) consisting of a styrol acrylate binder in watery dispersion.</li> <li>• <b>Armatop Uni</b> Cement based powder requiring addition of 20-25% water.</li> <li>• <b>Armatop L-Aero</b> Cement based powder requiring addition of 36-40% water.</li> <li>• <b>Armatop AKS</b> Cement based powder requiring addition of 20-24% water.</li> <li>• <b>Armatop MP</b> Cement based powder requiring addition of 22% water.</li> <li>• <b>Alsecco Spar Dash DLX</b> Pre-coloured dash receiver coat and basecoat, comprising limestone sand, cement and additives. Supplied as a powder to which clean water is added.</li> </ul>	2.0 to 5.0 3.0 to 7.0 4.0 to 11.0 3.0 to 5.0 3.0 to 4.0 9.0 to 15.0
<b>Reinforcement</b>	<ul style="list-style-type: none"> <li>• <b>Glasfasergewebe 32/Alsitex Carbon</b> Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 160g/m<sup>2</sup> and mesh size of about 4.0 mm x 4.0mm.</li> <li>• <b>Glasfasergewebe Universal-Aero</b> Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 160g/m<sup>2</sup> and mesh size of about 6.0 mm x 6.0mm.</li> <li>• <b>Panzergewebe</b> Alkali- and slide-resistant glass fibre mesh with mass per unit area of about 330g/m<sup>2</sup> and mesh size of about 6.0 mm x 6.0mm.</li> </ul>	
<b>Key Coat/Primer</b>	<ul style="list-style-type: none"> <li>• <b>Haftgrund P, Haftgrund Sc, Haftgrund X-press, Haftgrund Si</b> Ready to use pigmented acrylic-resin dispersion liquids.</li> </ul>	
<b>Bedding Mortar</b>	<ul style="list-style-type: none"> <li>• <b>Bonding Mortar AF (for use with Alsecco Acrylic Brick-slip Flex)</b> Organic based ready to use bonding and jointing mortar, supplied pre-coloured</li> </ul>	1.0 to 4.0
<b>Finishing Coat</b>	<ul style="list-style-type: none"> <li>• <b>Reibeputz</b> (particle size 1.5 to 4.0mm)</li> <li>• <b>Taufelputz</b> (particle size 1.5 to 4.0mm) Ready to use pastes – vinyl chloride ethylene binder – to be used with Haftgrund P if applicable.</li> <li>• <b>Alsilite F-Aero</b> Cement based powder requiring addition of about 40% water – to be used with Haftgrund P if applicable.</li> <li>• <b>Alsilite R-Aero</b> (particle size 2.0 to 4.0mm)</li> <li>• <b>Alsilite T-Aero</b> (particle size 2.0 to 5.0mm) Cement based powder requiring addition of about 26-34% water – to be used with Haftgrund P if applicable.</li> </ul>	Regulated by particle size 3.0 to 5.0 Regulated by particle size

**Table 1-a: Alsecco Component Specification – EPS**

Components		Thickness (mm)
Render Finish	<ul style="list-style-type: none"> <li>• <b>Taufelputz F</b></li> <li>• <b>Alsilite Nova F</b></li> </ul> Ready to use paste – vinyl acetate ethylene binder – to be used with Haftgrund P if applicable.	2.0 to 4.0
	<ul style="list-style-type: none"> <li>• <b>Siliconharzputz R</b> (particle size 1.5 to 4.0mm)</li> <li>• <b>Siliconharzputz T</b> (particle size 1.5 to 4.0mm)</li> <li>• <b>Alsilite Sc Carbon</b> (particle size 1.5 to 4.0mm)</li> </ul> Ready to use pastes – styrol acrylate/silicone resin emulsion – to be used with Haftgrund Sc if applicable.	Regulated by particle size
	<ul style="list-style-type: none"> <li>• <b>Flacherblender mit Klebespachtel AF</b></li> </ul> Ready to use pastes – styrol acrylate binder – associated with synthetic brick slips.	6.0 1.0 to 4.0
	<ul style="list-style-type: none"> <li>• <b>Kratzputz A</b></li> </ul> Thick layered cement based powder requiring addition of about 25% water.	5.0 to 12.0
	<ul style="list-style-type: none"> <li>• <b>Modellierputz MP</b></li> </ul> Cement based powder requiring addition of about 24-26% water – to be used with Haftgrund P if applicable.	2.0 to 5.0
	<ul style="list-style-type: none"> <li>• <b>Reibeputz MP</b> (particle size 2 to 4mm)</li> <li>• <b>Taufelputz MP</b> (particle size 2 to 4mm)</li> </ul> Cement based powders requiring addition of about 24-26% water – to be used with Haftgrund P if applicable.	Regulated by particle size
	<ul style="list-style-type: none"> <li>• <b>Strukturputz Mineralisch</b> (particle size 2 to 4mm)</li> </ul> Cement based powder requiring addition of about 21% water – to be used with Haftgrund P if applicable.	Regulated by particle size
	<ul style="list-style-type: none"> <li>• <b>Taufelputz X-press</b> (particle size 1.5 to 4mm)</li> </ul> Ready to use paste – acrylate binder – to be used with Haftgrund X-press if applicable.	Regulated by particle size
	<ul style="list-style-type: none"> <li>• <b>Reibeputz Si</b> (particle size 1.5 to 3.0mm)</li> <li>• <b>Taufelputz Si</b> (particle size 1.5 to 3.0mm)</li> </ul> Ready to use pastes – silicate/styrol acrylate binder – to be used with Haftgrund Si if applicable.	Regulated by particle size
	<ul style="list-style-type: none"> <li>• <b>Alsilite Sc Nova R</b> (particle size 1.5 to 3.0mm)</li> <li>• <b>Alsilite Sc Nova T</b> (particle size 1.5 to 3.0mm)</li> </ul> Ready to use pastes – silicate/organic hybrid dispersion – to be used with Haftgrund Sc if applicable.	Regulated by particle size
	<ul style="list-style-type: none"> <li>• <b>Alsecco Spar Dash Aggregate</b></li> </ul> Available in a range of colours to suit the Spar Dash DLX receiver coat, 3 to 12mm aggregate size	Regulated by particle size
Decorative Profiles	<ul style="list-style-type: none"> <li>• <b>Alsecco Acrylic Brick-slip Flex</b></li> </ul> Pre-coloured weather-resistant acrylic brick-slips, available in a range of sizes	4.0 to 6.0

**Table 1-a continued: Alsecco Component Specification - EPS**

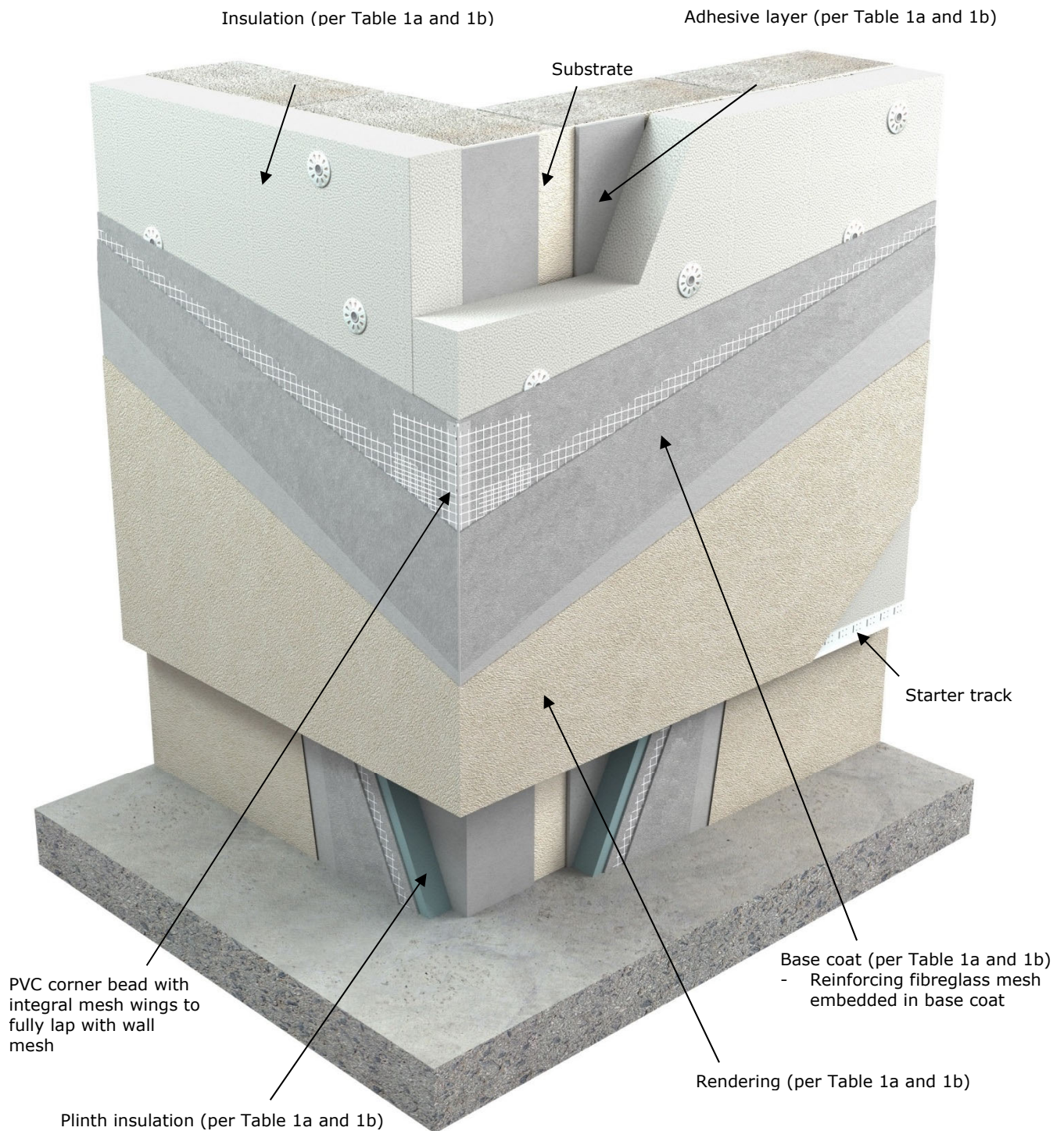
	Components	Thickness (mm)
<b>Adhesives</b>	<ul style="list-style-type: none"> <li>• <b>Armatop AKS, Armatop A, Armatop L-Aero, Armatop MP, Armatop MP White, Dämmkleber MK, Armatop Uni</b> Cement-based powders requiring addition of water.</li> </ul>	
<b>Insulation</b>	<ul style="list-style-type: none"> <li>• <b>MW panel</b> MW-EN13162-T5-DS(T+)-WS-WL(P)-MU1, Reaction to fire Class A1, tensile strength perpendicular to faces <math>\geq 14\text{kPa}</math></li> <li>• <b>MW lamella</b> MW-EN13162-T5-DS(T+)-WS-WL(P)-MU1, Reaction to fire Class A1, tensile strength perpendicular to faces <math>\geq 80\text{kPa}</math></li> </ul>	60 to 340 60 to 200
<b>Plinth Insulation</b>	<ul style="list-style-type: none"> <li>• <b>XPS</b> XPS 300/500/700 (extruded polystyrene), 2500mm x 600mm, nominal density of <math>30/35/45\text{kg/m}^3</math>, compressive strength or <math>300/500/700\text{kN/m}^2</math></li> </ul>	30 to 150
<b>Mechanical Fixings</b>	<ul style="list-style-type: none"> <li>• <b>WS 8 L, WS 8 N</b></li> <li>• <b>ejotherm SDK U, NK U, SK U</b></li> <li>• <b>IsoFux ND-8Z</b></li> <li>• <b>SDF-K plus, SDF-S plus</b></li> </ul> And fixings with ETA according to ETAG 014 with plate diameter $\geq 60\text{mm}$ , plate stiffness $\geq 0.3\text{kN/mm}$ and load resistance of anchor plate $\geq 1.0\text{kN}$ .	
<b>Basecoat</b>	<ul style="list-style-type: none"> <li>• <b>Armatop AKS</b> Cement based powder requiring addition of 20-24% water.</li> <li>• <b>Armatop Nova</b> Ready to use paste – silicate/organic hybrid dispersion.</li> <li>• <b>Armatop Uni</b> Cement based powder requiring addition of 20-25% water.</li> <li>• <b>Armatop L-Aero</b> Cement based powder requiring addition of 36-40% water.</li> <li>• <b>Alsecco Spar Dash DLX</b> Pre-coloured dash receiver coat and basecoat, comprising limestone sand, cement and additives. Supplied as a powder to which clean water is added.</li> </ul>	4.0 to 5.0 4.0 to 5.0 4.0 to 7.0 4.0 to 11.0 9.0 to 15.0
<b>Reinforcement</b>	<ul style="list-style-type: none"> <li>• <b>Glasfasergewebe 32/Alsitex Nova</b> Alkali- and slide-resistant glass fibre mesh with mass per unit area of about <math>160\text{g/m}^2</math> and mesh size of about <math>4.0\text{ mm} \times 4.0\text{mm}</math>.</li> <li>• <b>Glasfasergewebe Universal-Aero</b> Alkali- and slide-resistant glass fibre mesh with mass per unit area of about <math>160\text{g/m}^2</math> and mesh size of about <math>6.0\text{ mm} \times 6.0\text{mm}</math>.</li> <li>• <b>Panzergewebe</b> Alkali- and slide-resistant glass fibre mesh with mass per unit area of about <math>330\text{g/m}^2</math> and mesh size of about <math>6.0\text{ mm} \times 6.0\text{mm}</math>.</li> </ul>	
<b>Key Coat/Primer</b>	<ul style="list-style-type: none"> <li>• <b>Haftgrund P, Haftgrund Si</b> Ready to use pigmented synthetic resin dispersion liquids.</li> </ul>	
<b>Bedding Mortar</b>	<ul style="list-style-type: none"> <li>• <b>Bonding Mortar AF (for use with Alsecco Acrylic Brick-slip Flex)</b></li> <li>• Organic based ready to use bonding and jointing mortar, supplied pre-coloured</li> </ul>	1.0 to 4.0
<b>Finishing Coat</b>	<ul style="list-style-type: none"> <li>• <b>Alsilite F-Aero</b> Cement based powder requiring addition of about 40% water – to be used with Haftgrund P if applicable.</li> <li>• <b>Alsilite R-Aero</b> (particle size 2.0 to 4.0mm)</li> <li>• <b>Alsilite T-Aero</b> (particle size 2.0 to 5.0mm) Cement based powder requiring addition of about 26-34% water – to be used with Haftgrund P if applicable.</li> <li>• <b>Modellierputz MP</b> Cement based powder requiring addition of about 24-26% water – to be used with Haftgrund P if applicable.</li> <li>• <b>Reibeputz MP</b> (particle size 2.0 to 4.0mm)</li> <li>• <b>Taufelputz MP</b> (particle size 2.0 to 4.0mm) Cement based powders requiring addition of about 24-26% water – to be used with Haftgrund P if applicable.</li> <li>• <b>Strukturputz Mineralisch</b> (particle size 2.0 to 4.0mm) Cement based powder requiring addition of about 21% water – to be used with Haftgrund P if applicable.</li> <li>• <b>Reibeputz Si</b> (particle size 1.5 to 3.0mm)</li> <li>• <b>Taufelputz Si</b> (particle size 1.5 to 3.0mm)</li> </ul>	3.0 to 5.0 Regulated by particle size 2.0 to 5.0 Regulated by particle size Regulated by particle size Regulated by particle size



	Ready to use pastes – silicate/styrol acrylate binder – to be used with Haftgrund Si if applicable.	
<b>Finishing Coat</b>	<ul style="list-style-type: none"> <li>• <b>Alsilite Sc Nova R</b> (particle size 1.5 to 3.0mm)</li> <li>• <b>Alsilite Sc Nova T</b> (particle size 1.5 to 3.0mm)</li> </ul> Ready to use pastes – silicate/organic hybrid dispersion.	1.5 to 3.0
	<ul style="list-style-type: none"> <li>• <b>Kratzputz A</b></li> </ul> Thick layered cement based powder requiring addition of about 25% water.	6.0 to 12.0
	<ul style="list-style-type: none"> <li>• <b>Alsecco Spar Dash Aggregate</b></li> </ul> Available in a range of colours to suit the Spar Dash DLX receiver coat, 3 to 12mm aggregate size	Regulated by particle size
<b>Decorative Profiles</b>	<ul style="list-style-type: none"> <li>• <b>Alsecco Acrylic Brick-slip Flex</b></li> <li>• Pre-coloured weather-resistant acrylic brick-slips, available in a range of sizes</li> </ul>	4.0 to 6.0

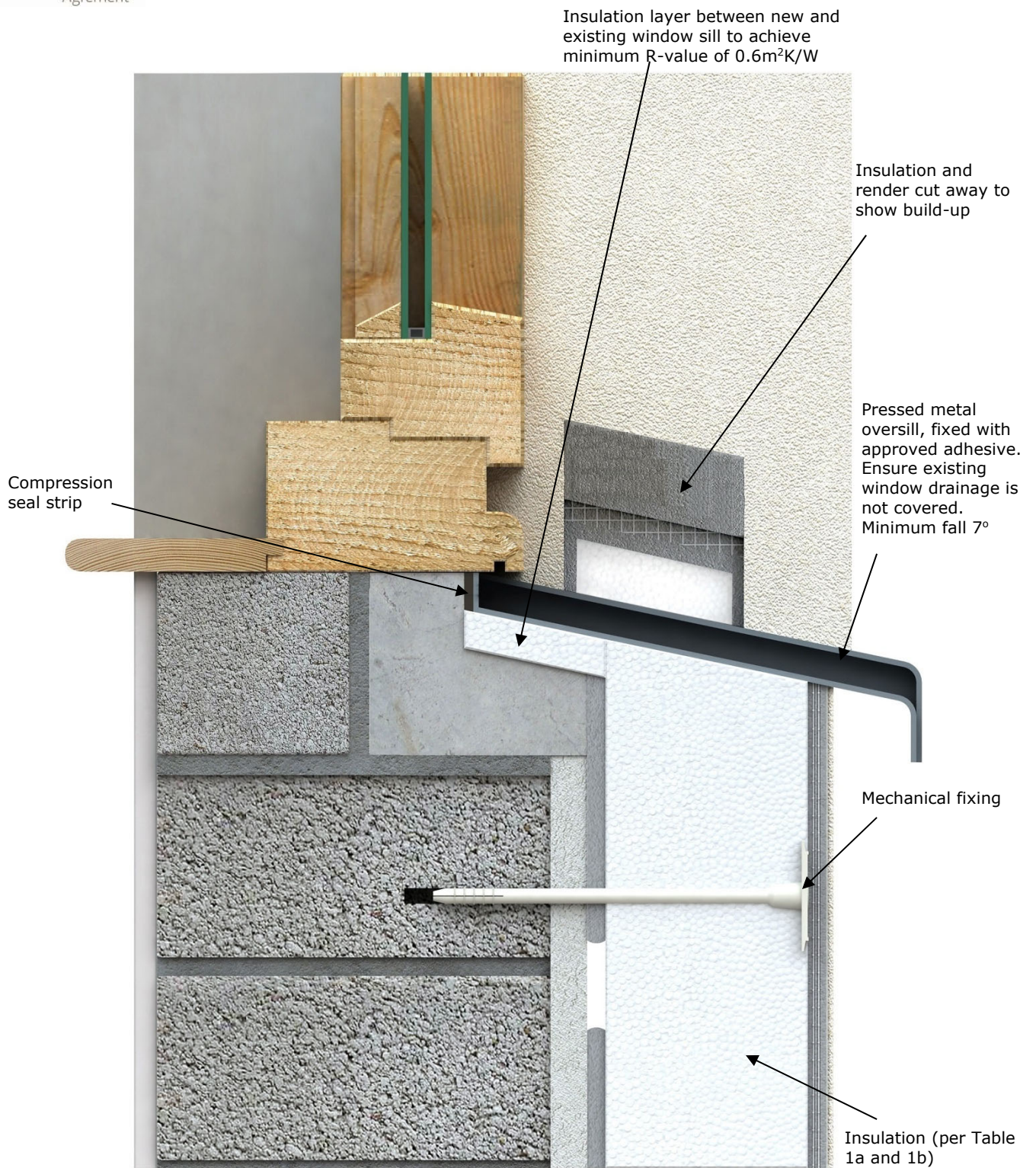
**Table 1-b: Alsecco Component Specification – MW**

**Note:** EPS insulation is shown in the following details for illustrative purposes only. Full installation details for both EPS and MW Systems can be obtained from the certificate holder.

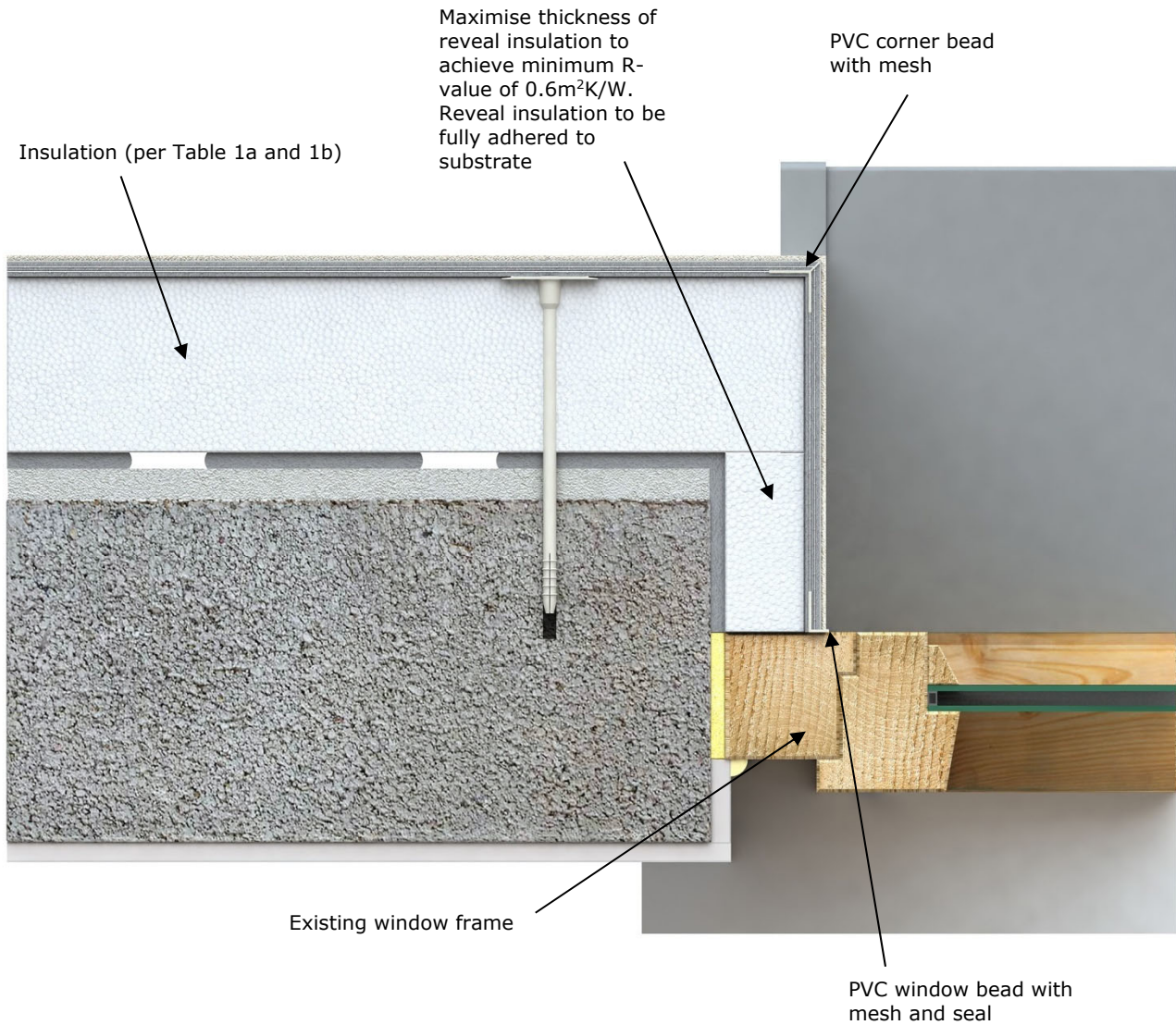


**Figure 1: Build-up of System Components**



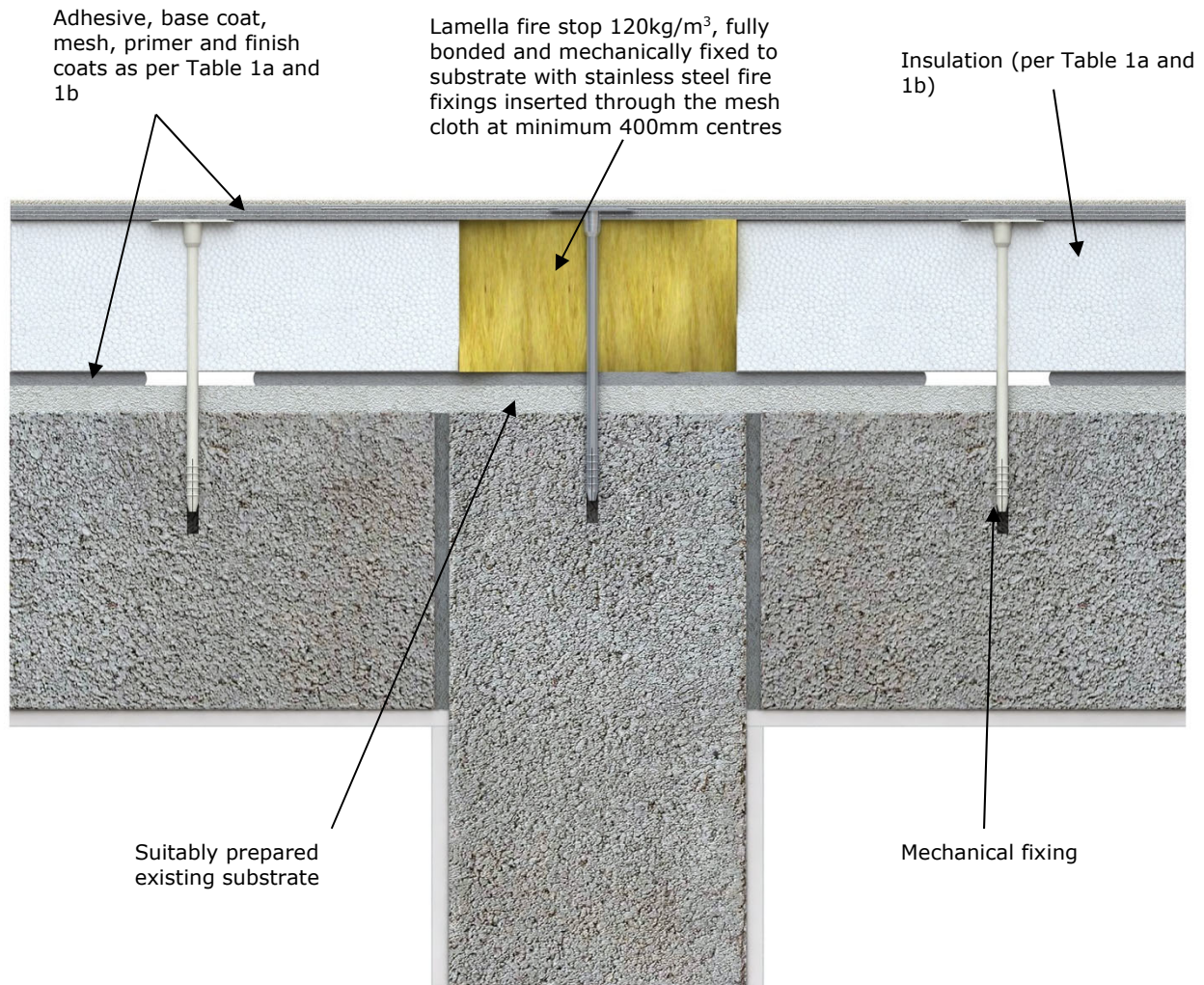


**Figure 2: Window Sill Detail**

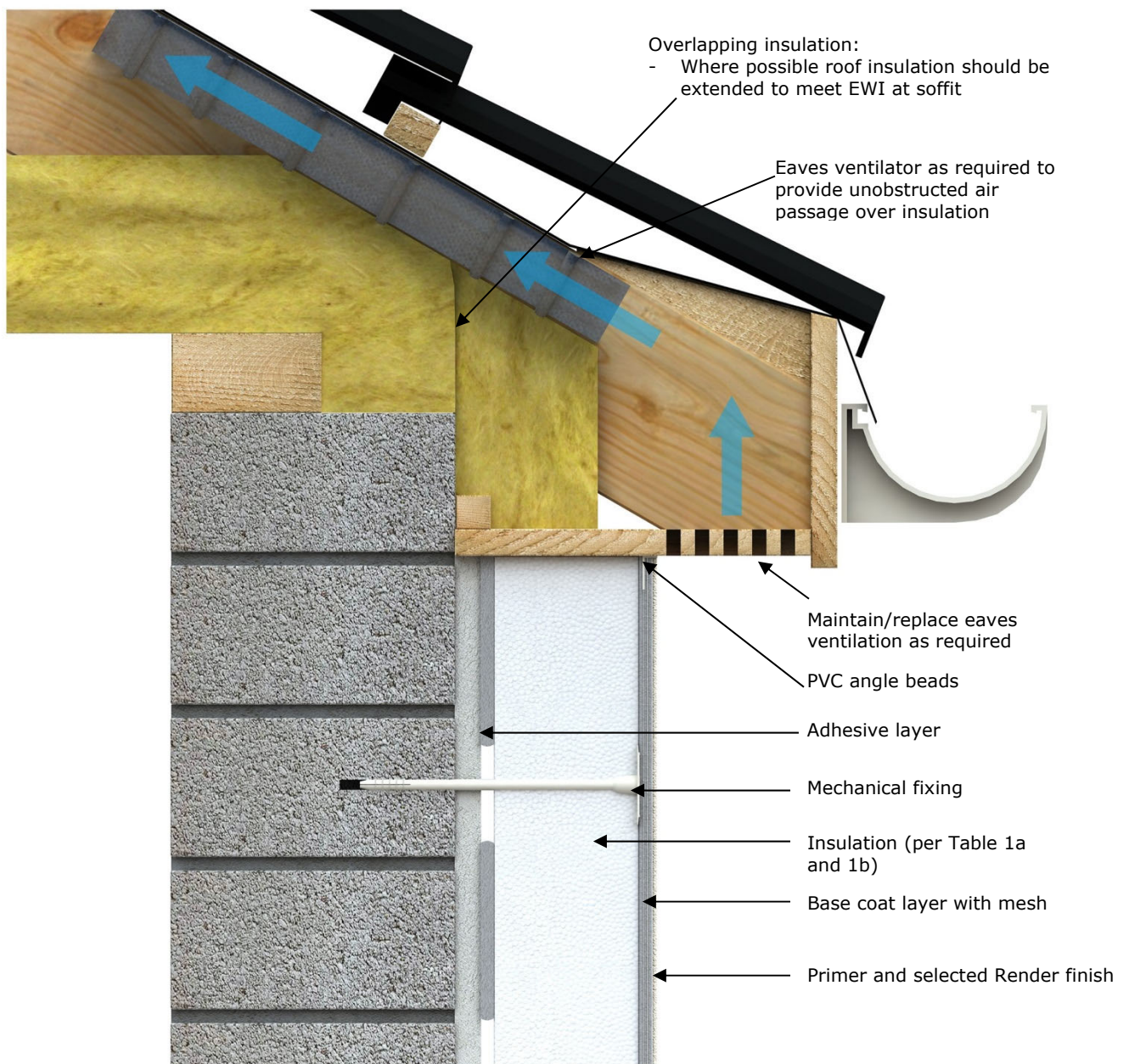


**Figure 3: Window Reveal Detail**





**Figure 4: Fire Break Detail**



**Figure 5: Eaves Detail**



### 3.1 GENERAL

Alsecco External Insulation Systems are designed by Ikonic Distribution Ltd on a project specific basis. Where the external insulation system is being applied to improve the thermal performance of an existing building, Ikonic Distribution Ltd will assess the building and advise on how to maximise the benefits of the external insulation system for that building. The design will include for:

- a) The completion and recording of a site survey. For existing buildings, U-value calculations, pull-out resistance etc. should be based on the existing structure.
- b) Evaluation and preparation of substrate.
- c) Minimising risk of condensation in accordance with the recommendations of BS 5250<sup>[2]</sup>. This includes the use of approved detailing as shown in Figures 1 to 5 incorporating the requirements of SR 54<sup>[3]</sup> and, where possible, the Acceptable Construction Details published by DHPLG.
- d) Thermal insulation provision to Part L of the Building Regulations 1997 to 2019.
- e) Resistance to impact and abrasion.
- f) Resistance to thermal stresses.
- g) Resistance to wind loading.
- h) Design of fixings to withstand design wind loadings, using a safety factor of 3 (three) for mechanical fixings and a safety factor of 9 (nine) for adhesive. In addition, fixings around window and door openings shall be at a maximum of 300mm centres in each board or section of board so as to provide positive and robust restraint over the life of the system.
- i) The design for wind loading on buildings greater than 2 stories should be checked by a chartered engineer in accordance with Eurocode 1 I.S. EN 1991-1-4<sup>[4]</sup>.
- j) Design for fire resistance, fire spread and fire stopping, as defined in Clause 0 and 0 of this Certificate.
- k) Design of a water management system to prevent ingress of water at movement joints, windows, doors, openings for services etc. Particular attention is required to ensure that window and sill design are coordinated to achieve a fully integrated design.
- l) Movement joints.
- m) A site-specific maintenance programme for inclusion in the homeowner's documentation.
- n) Durability requirements.

Detailing and construction must be to a high standard to prevent the ingress of water and to achieve the design thermal performance. Window details should be designed such that, where possible, they can be removed and replaced from

within the building, with best practice being to move the windows forward. Consideration should be given to maximising improvement of thermal insulation at window reveals, door openings etc. Adequate provision should be made at design and installation stage for the release of trapped moisture e.g. above window heads.

When designed and installed in accordance with this Certificate, the system will satisfy the wall elemental U-value and linear thermal transmittance requirements of Part L of the Building Regulations 1997 to 2019. The design shall include for the elimination/minimising of cold bridging at window and door reveals, eaves and at ground floor level in compliance with Acceptable Construction Details published by DHPLG.

The system is intended to improve the weather resistance of the external walls. Seals to windows and doors shall be provided in accordance with the project specific site plan and the Acceptable Construction Details. Care should be taken to ensure that any ventilation or drainage openings are not obstructed.

In areas where electric cables can come into contact with EPS, in accordance with good practice all PVC sheathed cables should be run through ducting or be re-routed. Domestic gas installations must not be adversely affected by the fitting of external insulation. If the external insulation has an impact on the gas service line/meter location, then Bord Gáis Networks must be contacted so that a suitable solution can be achieved. If altering a gas installation, a Registered Gas Installer (RGI) must be employed.

The durability of the render systems is influenced by the colour of the render used. Further information is available by contacting the Certificate holder.

In locations where frost heave is likely to occur, plinth XPS must be kept 10mm above ground level.

### 3.2 MAJOR RENOVATION

As external insulation over 25% of the building envelope is classified as Major Renovation in TGD to Part L of the Building Regulations 1997 to 2019, attention should be paid to Section 2.3 of TGD to Part L 2019 where external insulation is undertaken as part of a deep retrofit installation.

### 3.3 STRENGTH AND STABILITY

#### 3.3.1 Wind Loading

Alsecco External Insulation Systems can be designed to withstand the wind pressures (including suction) and thermal stresses in accordance with the Building Regulations 1997 to 2019. The design for wind loading on buildings greater than two stories should be checked by a chartered engineer in accordance with Eurocode 1 I.S. EN 1991-1-4<sup>[4]</sup>. A general factor of safety of 1.5 is applied to design wind loads.

#### 3.3.2 Impact Resistance

- a) The Alsecco External Insulation Systems have been classified as defined in Table 2 to be suitable for use as defined in ETAG 004 Cl. 6.1.3.3 Table 8 as follows:

Category I: A zone readily accessible at ground level to the public and vulnerable to hard impacts but not subject to abnormally rough use.

Category II: A zone liable to impacts from thrown or kicked objects, but in public locations where the height of the system will limit the size of the impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care.

Category III: A zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects.

**Note:** The above classifications do not include acts of vandalism.

In an Irish context, Category II excludes any wall at ground level adjacent to a public footpath but includes one with its own private, walled-in garden. Category III excludes all walls at ground level.

- b) The design should include for preventing damage from impact by motor vehicles or other machinery. Preventive measures such as provision of protective barriers or kerbs should be considered.

#### 3.4 BEHAVIOUR IN RELATION TO FIRE

Systems that achieve a Class A2 or Class B Reaction to Fire Classification are suitable for use up to a maximum of six storeys (18 metres) in height on purpose groups 1(a), 1(c), 1(d), 2(a), 2(b), 3, 4(a) and 4(b), and for use up to a maximum of five storeys (15 metres) in height on purpose group 1(b), as defined in TGD to Part B of the Building Regulations 1997 to 2019.

With regard to fire stopping and limitations on use of combustible materials, walls must comply with Sections 3.2, 3.3, 3.4 and 4 of TGD to Part B of the Building Regulations 1997 to 2019, and Sections 3.5, 3.6, 3.7 and 4 of TGD to Part B Volume 2 of the Building Regulations 1997 to 2019. Stainless steel fire fixings must be provided

at the rate of one per square metre when specified. The fixing design should take account of the extra duty required under fire conditions.

Vertical and horizontal lamella fire barriers shall be provided at each compartment floor and wall, with stainless steel fixings provided at 400mm vertical centres and 400mm horizontal centres respectively, including the second floor level of a three-storey single occupancy house (see Diagram 12 of TGD to Part B Volume 2 of the Building Regulations 1997 to 2019). Firebreaks should be fully adhesively bonded to the substrate (i.e. ribbons or dabs of adhesive are not acceptable) and mechanically fixed with stainless steel fire fixings at 400mm centres. The fire barrier shall be of non-combustible material (i.e. lamella, slab of minimum density 120kg/m<sup>3</sup>), be at least 200mm high, continuous and unbroken for the full perimeter of the building and for the full thickness of the insulation. Glass wool is not suitable for use as a firestop (see Clause 3.6.3 of TGD to Part B Volume 2 of the Building Regulations 1997 to 2019 for types of suitable firestop).

#### 3.5 PROXIMITY OF HEAT PRODUCING APPLIANCES

Combustible material must be separated from a brick or blockwork chimney by at least 200mm from a flue and 40mm from the outer surface of the brick or blockwork chimney, in accordance with Clause 2.5.6 of TGD to Part J of the Building Regulations 1997 to 2019. Metal fixings in contact with combustible materials should be at least 50mm from a flue.

#### 3.6 VENTILATED CAVITIES

When the system is to be applied to a masonry cavity wall, including hollow block walls, consideration should be given to the treatment of the ventilated cavity. In order to ensure the thermal effectiveness of the external insulation system, it is critical to eliminate airflow within the cavity void. It is essential to seal the cavity to achieve an unventilated air layer. This eliminates heat losses due to airflow within the cavity circumventing the ETIC system. Best practice is to fill the cavity void with an NSAI Agrément approved Cavity Wall Insulation (CWI) system. Ventilation to the building must be maintained in accordance with the requirements of TGD to Part F of the Building Regulations 1997 to 2019.

#### 3.7 CONDENSATION RISK

Areas where there is a significant risk of condensation due to high levels of humidity should be identified during the initial site survey.

##### 3.7.1 Internal Surface Condensation

When improving the thermal performance of the external envelope of a building through external wall insulation, designers need to consider the impact of these improvements on other untouched

elements of the building. As discussed in Clause 3.7 of this Certificate, thermally bridged sections of the envelope such as window jambs, sills and eaves will experience a lower level of increased thermal performance. The degree of improvement to these junctions can be limited due to physical restrictions on site i.e. footpaths, soffit boards or hinges for windows.

When bridged junctions meet the requirements of Appendix D Table D2 of TGD to Part L of the Building Regulations 1997 to 2019, the coldest internal surface temperature will satisfy the requirements of Section D2, namely that the temperature factor shall be equal to or greater than 0.75. As a result, best practice will have to be adopted in order to limit the risk of internal surface condensation which can result in dampness and mould growth.

When site limiting factors give rise to substandard levels of insulation at bridged junctions, guidance should be sought from the Certificate holder as to acceptable minimum requirements.

### **3.7.2 Interstitial Condensation**

An interstitial condensation risk analysis will be carried out by Ikonik Distribution Ltd in accordance with BS 5250<sup>[2]</sup> and the design modified as appropriate to reduce the risk of interstitial condensation to acceptable levels. Table 4 lists the  $s_d$  values for a range of build-ups.

### **3.7.3 Ventilation**

When installing the external insulation system, the works to be undertaken must not compromise the existing ventilation provisions in the home, including the ventilation of suspended timber floors, where existing vents must be sleeved across the rising wall and sealed.

When these existing ventilation provisions do not meet the requirements of Part F of the Building Regulations 1997 to 2019, the homeowner should be informed and remedial action must be taken before the external insulation system is installed.

## **3.8 MAINTENANCE**

Adequate provision should be made in the initial design phase for access and maintenance over the life of the system.

The system shall be inspected and maintained in accordance with the Certificate holder's instructions, as detailed in the Repair and Maintenance Method Statement, which is incorporated into the Building Owner's Manual.

Necessary repairs should be carried out immediately and must be in accordance with the Certificate holder's instructions. Repairs to plumbing etc. should also be carried out as

required to prevent deterioration or damage, and to protect the integrity of the system.

Synthetic finishes may be subject to aesthetic deterioration due to exposure to UV light. They should be re-painted every 18 to 20 years to maintain appearance. Care should be taken to ensure that the synthetic finish used is compatible with the original system and that the water vapour transmission or fire characteristics are not adversely affected.

Sealants shall be subject to regular inspection (at least annually). They should be replaced as required and fully replaced every 18 to 20 years to maintain performance.

## **3.9 WEATHERTIGHTNESS**

When designed and detailed in accordance with this Certificate, the system will prevent moisture from the ground coming in contact with the insulation. The external render has adequate resistance to water penetration when applied in accordance with the Certificate holder's instructions.

Joint designs, sealant specifications and recommendations for detailing at windows and doors were assessed and are considered adequate to ensure that water penetration will not occur, assuming that regular maintenance is carried out in accordance with the Certificate holder's instructions.

## **3.10 AESTHETIC PERFORMANCE**

As with traditional renders, the aesthetic performance of the systems, e.g. due to discolouration, soiling, staining, algal growth or lime bloom, is depended on a range of factors such as:

- Type, colour and texture of surface finish;
- Water retaining properties of the finish;
- Architectural form and detailing;
- Building orientation/elevation;
- Local climate/atmospheric pollution.

Where cleaning of walls is required, for example in the case of algal growth, the procedure in the Alsecco maintenance document must be followed which contains detailed information on the removal of algae. It is the homeowner's responsibility to inspect the walls every year and clean when required; however the homeowner may contract the approved installer to provide this service.

Adequate consideration should be given at the design stage to all of the above to ensure that the level of maintenance necessary to preserve the aesthetics of the building is acceptable.

#### 4.1 IMPACT RESISTANCE

Table 2 lists the impact resistance classifications for various build-ups of the Alsecco External Insulation Systems.

#### 4.2 REACTION TO FIRE

Table 4 lists the reaction to fire classification according to IS EN 13501-1<sup>[5]</sup> for various build-ups of the Alsecco External Insulation Systems.

#### 4.3 THERMAL PERFORMANCE

Assessments were carried out to verify that the requirements of Part L of the Building Regulations 1997 to 2019 can be achieved using the Alsecco External Insulation Systems. The manufacturer's declared thermal conductivity values ( $\lambda_{90/90}$ ) taken from their CE Marking Declarations of Performance are:

##### Standard white EPS

- Alsecco EPS 038: 0.038W/mK
- Alsecco EPS 037: 0.037W/mK

##### Graphite-enhanced EPS

- Alsecco EPS 030: 0.030W/mK
- Alsecco EPS 031: 0.031W/mK
- Alsecco EPS 032: 0.032W/mK

##### Mineral wool

- MW Dual Density 036: 0.036W/mK
- MW High Density 038/039 30-40mm thick: 0.038W/mK
- MW High Density 038/039 60-200mm thick: 0.039W/mK
- MW Lamella 042: 0.042W/mK
- MW Slab 036: 0.036W/mK
- MW Slab Plus 038: 0.038W/mK

These have not been assessed by NSAI Agrément. Table 3 shows typical insulation thicknesses to achieve minimum U-values of 0.27W/m<sup>2</sup>K (retrofit only) and 0.21W/m<sup>2</sup>K for different construction types. The thermal resistance value for the render ( $R_{render}$ ) can be taken as 0.02m<sup>2</sup>K/W.

Calculation of U-values will be required on individual projects to confirm a U-value of 0.27W/m<sup>2</sup>K or better has been achieved, based on the wall construction and the insulation used. The thermal conductivity ( $\lambda$ ) value of the insulation to be used in all U-value calculations must be the  $\lambda_{90/90}$  value.

#### 4.4 LIMITING THERMAL BRIDGING

The linear thermal transmittance ' $\psi$ ' (Psi) describes the heat loss associated with junctions and around openings. Window and door reveal design used on the Alsecco External Insulation Systems have been assessed and when detailed in

accordance with this Certificate can meet the requirements of Table D2 of TGD to Part L of the Building Regulations 1997 to 2019.

When **all** bridged junctions within a building comply with the requirements of Table D2 of TGD to Part L, the improved 'y' factor of 0.08 can be entered into the DEAP building energy rating (BER) calculation. If **all** junctions can be shown to be equivalent or better than Acceptable Construction Details published by the DHPLG, then the values published in Table D2 apply.

Where either of the above options are shown to be valid, or when the required values cannot be achieved, all relevant details should be recorded on the 'Certificate of Compliance' for that project for use in future BER calculations.

' $\Psi$ ' values for other junctions outside the scope of this Certificate should be assessed by an NSAI approved thermal modeller.

As per Acceptable Construction Details, a minimum thermal resistance of 0.6m<sup>2</sup>K/W should be provided at window reveals, heads and sills.

#### 4.5 DESIGN LIFE

An assessment of the life of the system was carried out. This included an assessment of:

- Design and installation controls;
- Proposed building heights;
- Render thickness and specification;
- Material specifications, including insulant, mesh, beading and fixing specifications;
- Joint design;
- Construction details;
- Maintenance requirements.

The Alsecco External Insulation Systems can last in excess of 60 years subject to normal use, regular inspection and maintenance. It is important to note that the durability of the render system is entirely dependent on the correct installation of the product in accordance with this Certificate, the manufacturer's instructions, IS EN 13914-1<sup>[1]</sup> and ongoing care and maintenance as described in Clause 3.9 of this Certificate. Critical details include rendering at window sills, raised features, junctions with eaves and verges, and the use of suitably designed overhangs and flashings. Reference should be made to IS EN 13914-1<sup>[1]</sup> for general advice on design, in particular on the use of angle, stop and movement joint beads.

#### 4.6 PRACTICABILITY

The practicability of construction and the adequacy of site supervision arrangements were assessed and considered adequate. The project

specific designs and method statements for application, inspection and repair were reviewed and found to be satisfactory.

#### **4.7 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING**

- Structural strength and stability
- Behaviour in fire
- Impact resistance
- Pull-out resistance of fixings
- Thermal resistance
- Hygrothermal behaviour
- Condensation risk
- Site erection controls
- Durability of components
- Dimensional stability of insulants

#### **4.8 OTHER INVESTIGATIONS**

- (i) Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on mechanical strength/stability and durability were assessed.
- (ii) The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- (iii) Special building details (e.g. ground level, window and door openings, window sill and movement joints) were assessed and approved for use in conjunctions with this Certificate.
- (iv) Site visits were conducted to assess the practicability of installation and the history of performance in use of the product.

EPS			
	Impact Category		
Render System: Base coat Armatop Quattro or Two in One Light with finishing coat:	Single mesh Glasfasergewebe 32 Total render thickness < 6mm	Single mesh Glasfasergewebe 32 Total render thickness ≥ 6mm	
Reibeputz/Traufelputz	II	-	
Traufelputz X-press	NPD	NPD	
Traufelputz F	II	II	
Siliconharzputz R/T	II	I	
Flachverblender mit Klebspachtel AF	NPD	I	
Alsecco Acrylic Brick-slip Flex	I	-	
Alsecco Spar-Dash Aggregate	I	-	
Render System: Base coat Armatop Uni or Armatop L-Aero with finishing coat:	Single mesh Glasfasergewebe 32 or Glasfasergewebe Universal-Aero Armatop Uni thickness ≥ 3mm	Single mesh Glasfasergewebe Universal-Aero Armatop L-Aero thickness < 11mm	Single mesh Glasfasergewebe Universal-Aero Armatop L-Aero thickness = 11mm
Kratzputz A	Not applicable	I	I
Flachverblender mit Klebspachtel AF	II	Not applicable	Not applicable
Alsilite F-Aero	Not applicable	III	II
Alsilite R/T-Aero	II	III	II
Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch, Traufelputz X-press	II	II	II
Reibeputz, Traufelputz, Traufelputz F, Siliconharzputz R/T, Reibeputz Si, Traufelputz Si	II	III	II
Render System: Base coat Armatop AKS with finishing coat:	Single mesh Glasfasergewebe 32		
Flachverblender mit Klebspachtel AF	I		
Alsilite R/T-Aero, Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch, Reibeputz, Traufelputz, Traufelputz X-press, Siliconharzputz R/T, Reibeputz Si, Traufelputz Si	II		
Alsilite F-Aero, Traufelputz F, Alsilite Sc Carbon	III		
Render System: Base coat Armatop MP with finishing coat:	Single mesh Glasfasergewebe 32		
Modellierputz MP, Reibeputz MP, Traufelputz MP, Reibeputz, Traufelputz, Siliconharzputz R, Siliconharzputz T	III		
Render System: Base coat Armatop Carbon with finishing coat:	Single mesh Glasfasergewebe 32 / Alsitex Carbon		
Reibeputz, Traufelputz, Traufelputz X-press, Siliconharzputz R/T, Alsilite Sc Carbon, Flachverblender mit Klebspachtel AF	I		
Traufelputz F, Alsilite Nova F	II		
MW			
	Impact Category		
Render System: Base coat Armatop AKS with finishing coat:	Single mesh Glasfasergewebe 32		
Alsilite -Aero, Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch, Reibeputz Si, Traufelputz Si	II		
Render System: Base coat Armatop Nova with finishing coat:	Single mesh Alsitex Nova	Double mesh Alsitex Nova	Double mesh Panzergewebe + Alsitex Nova
Alsilite Sc Nova R/T (thickness > 1/5mm)	II	I	I
Render System: Base coat Armatop Uni / Armatop L-Aero with finishing coat:	Single mesh Glasfasergewebe 32/Universal-Aero		
Kratzputz A	I		
Alsilite Aero, Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch, Reibeputz Si, Traufelputz Si	II		

**Table 2: Impact Resistance**



Insulation	Declared Thermal Conductivity ( $\lambda_{90/90}$ ) of Insulation (W/mK)	Thickness of Insulation (mm)	U-Value (W/m <sup>2</sup> K)
No external insulation	-	-	1.30
EPS 0.038	0.038	120	0.27
		160	0.21
EPS 0.037	0.037	120	0.27
		160	0.21
EPS 0.032	0.032	110	0.25
		140	0.21
EPS 0.031	0.031	100	0.27
		130	0.21
EPS 0.030	0.030	100	0.26
		130	0.21
MW Slab 036	0.036	120	0.26
		150	0.21
MW High Density 039	0.039	130	0.26
		170	0.21
MW Slab Plus	0.038	120	0.27
		160	0.21
These values are based on a typical house of hollow block construction (Building Regulations Part L 2019) with the following construction (internal to external): <ul style="list-style-type: none"> <li>• 12.5mm plasterboard</li> <li>• 215mm hollow block</li> <li>• 15mm sand &amp; cement render</li> <li>• Insulation board – as specified</li> <li>• Render finish with mesh basecoat – 8mm</li> </ul>			
Insulation	Declared Thermal Conductivity ( $\lambda_{90/90}$ ) of Insulation (W/mK)	Thickness of Insulation (mm)	U-Value (W/m <sup>2</sup> K)
No external insulation	-	-	0.27
EPS 0.038	0.038	70	0.21
EPS 0.037	0.037	70	0.21
EPS 0.032	0.032	60	0.21
EPS 0.031	0.031	60	0.21
EPS 0.030	0.030	60	0.20
MW Slab 036	0.036	70	0.21
MW High Density 039	0.039	70	0.21
MW Slab Plus	0.038	70	0.21
These values are based on a typical house of cavity wall construction (Building Regulations Part L 2019) with the following construction (internal to external): <ul style="list-style-type: none"> <li>• 12.5mm plasterboard</li> <li>• 100mm concrete block</li> <li>• 100mm pumped cavity insulation (thermal conductivity 0.040W/mK)</li> <li>• 100mm concrete block</li> <li>• 15mm sand &amp; cement render</li> <li>• Insulation board – as specified</li> <li>• Render finish with mesh basecoat – 8mm</li> </ul>			
<b>Note:</b> U-values for other construction types must be obtained from the Certificate holder.			

**Table 3: Typical U-values (W/m<sup>2</sup>K)**

EPS			
Configuration	Organic content	Flame retardant content	Reaction to fire class according to EN 13501-1
Base coat Armatop Quattro or Two in One Light with finishing coat and compatible key coat indicated hereafter			
Reibeputz/Traufelputz with key coat Haftgrund P	Max 8.9%	No flame retardant	B – s2, d0
Traufelputz X-press with key coat Haftgrund P	Max 8.9%	No flame retardant	
Traufelputz with key coat Haftgrund P			
Siliconharzputz R/T with key coat Haftgrund Sc			
Flachverblander mit Klebespachtel AF	Max 8.5% Max 9.5%	Min 5.3% Min 10.0%	
Base coat Armatop Uni or Armatop L-Aero with finishing coat and compatible key coat indicated hereafter			
Kratzputz A, Alsilite-Aero, Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch	Max 3.7%	No flame retardant	B – s1, d0
Flachverblander mit Klebespachtel AF, Reibeputz, Traufelputz, Traufelputz F, Traufelputz X-press, Siliconharzputz R, Siliconharzputz T, Reibeputz Si, Traufelputz Si	Max 12.5%	Min 5.2%	B – s2, d0
Base coat Armatop AKS with finishing coat and compatible key coat indicated hereafter			
Alsilite Aero, Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch	Max 3.7%	No flame retardant	B – s1, d0
Flachverblander mit Klebespachtel AF	Max 12.5%	Min 10%	B – s2, d0
Reibeputz, Traufelputz, Traufelputz F, Traufelputz X-press, Siliconharzputz R, Siliconharzputz T, Alsilite Sc Carbon, Reibeputz Si, Traufelputz Si	Max 12.5%	No flame retardant	B – s2, d0
Base coat Armatop MP with finishing coat and compatible key coat indicated hereafter			
Alsilite Aero, Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch	Max 3.7%	No flame retardant	B – s1, d0
Flachverblander mit Klebespachtel AF	Max 9.2% Max 9.9%	Min 9.0% No flame retardant	B – s2, d0
Reibeputz, Traufelputz, Traufelputz F, Traufelputz X-press, Siliconharzputz R, Siliconharzputz T, Alsilite Sc Carbon, Reibeputz Si, Traufelputz Si, Alsilite Sc Nova	Max 9.5%	No flame retardant	B – s2, d0
Base coat Armatop Carbon with finishing coat and compatible key coat indicated hereafter			
Reibeputz, Traufelputz, Traufelputz F Alsilite Nova F with Haftgrund P	Max 9.5%	No flame retardant	B – s2, d0
Traufelputz X-press with Haftgrund X-press			
Siliconharzputz R/T, Alsilite Sc Carbon with Haftgrund Sc			
Flachverblander mit Klebespachtel AF with Haftgrund P	Max 9.2% Max 9.9%	Min 9.0% No flame retardant	
MW			
Base coat Armatop AKS with finishing coat and compatible key coat indicated hereafter			
Alsilite-Aero, Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch, Reibeputz Si, Traufelputz Si	Base coat ≤ 2.3% Finishing coat ≤ 4.2%	No flame retardant	A2 – s1, d0
Base coat Armatop Nova with finishing coat and compatible key coat indicated hereafter			
Alsilite Sc Nova R/T	Max 5.6%	No flame retardant	A2 – s1, d0
Base coat Armatop Uni / Armatop L-Aero with finishing coat and compatible key coat indicated hereafter			
Kratzputz A, Alsilite-Aero, Modellierputz MP, Reibeputz MP, Traufelputz MP, Strukturputz Mineralisch, Reibeputz Si, Traufelputz Si	Max 4.6%	No flame retardant	A2 – s1, d0

**Table 4 – Reaction to Fire**

EPS		
Base Coat	Finishing Coat	Equivalent Air Layer Thickness $s_d$
Armatop Quattro or Two in One Light	Reibeputz/Traufelputz	$\leq 1.5 \text{ m}$
	Traufelputz X-press	
	Traufelputz F	
	Siliconharzputz R/T	
	Flachverblander mit Klebspachtel AF	
Armatop Uni	Flachverblander mit Klebspachtel AF	$\leq 1.0 \text{ m}$
	Alsilite R/T-Aero	
	Modellierputz MP	
	Reibeputz/MP/Si	
	Strukturputz Mineralisch	
	Traufelputz/MP/F/X-press/Si	
	Siliconharzputz R/T	
Armatop L-Aero	Kratzputz A	$\leq 1.0 \text{ m}$
	Alsilite F/R/T-Aero	
	Modellierputz MP	
	Reibeputz/MP/Si	
	Strukturputz Mineralisch	
	Traufelputz/MP/F/X-press/Si	
	Siliconharzputz R/T	
Armatop AKS	Flachverblander mit Klebspachtel AF	$\leq 1.0 \text{ m}$
	Alsilite-Aero	
	Modellierputz MP	
	Reibeputz/MP/Si	
	Traufelputz/MP/F/X-press/Si	
	Strukturputz Mineralisch	
	Siliconharzputz R/T	
Armatop MP	Alsilite Sc Carbon	$\leq 1.0 \text{ m}$
	Flachverblander mit Klebspachtel AF	
	Alsilite F-Aero/R-Aero/T-Aero	
	Modellierputz MP	
	Reibeputz/MP/Si	
	Traufelputz/MP/F/X-press/Si	
	Strukturputz Mineralisch	
	Siliconharzputz R/T	
Armatop Carbon	Alsilite Sc Carbon/Sc Nova	$\leq 1.5 \text{ m}$
	Reibeputz/Traufelputz	
	Traufelputz F/X-press	
	Alsilite Nova F	
	Flachverblander mit Klebspachtel AF	
	Siliconharzputz R/T	
	Alsilite Sc Carbon	

**Table 5-a: Water Vapour Permeability - EPS**

MW		
Base Coat	Finishing Coat	Equivalent Air Layer Thickness $s_d$
Armatop AKS	Alsilite-Aero	$\leq 1.0$ m
	Modellierputz MP	
	Reibeputz MP/Si	
	Traufelputz MP/Si	
	Strukturputz Mineralisch	
Armatop Nova	Alsilite Sc Nova R/T	$\leq 1.0$ m
Armatop Uni/L-Aero	Kratzputz A	$\leq 1.0$ m
	Alsilite-Aero	
	Modellierputz MP	
	Reibeputz MP/Si	
	Traufelputz MP/Si	
	Strukturputz Mineralisch	

**Table 5-b: Water Vapour Permeability – MW**

**5.1** National Standards Authority of Ireland ("NSAI") following consultation with NSAI Agrément has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of latest revision so long as:

- (a) the specification of the product is unchanged.
- (b) the Building Regulations 1997 to 2019 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.
- (c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.
- (d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.
- (e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.
- (f) the registration and/or surveillance fees due to IAB are paid.

**5.2** The NSAI Agrément mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the NSAI Agrément mark and certification number and must remove them from the products already marked.

**5.3** In granting Certification, the NSAI makes no representation as to;

- (a) the absence or presence of patent rights subsisting in the product/process; or
- (b) the legal right of the Certificate holder to market, install or maintain the product/process; or
- (c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

**5.4** This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

**5.5** Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the

Safety, Health and Welfare at Work Act 2005, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

**5.6** The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

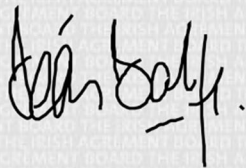
**5.7** Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

## NSAI Agrément

This Certificate No. **20/0421** is accordingly granted by the NSAI to **Alsecco UK Ltd** on behalf of NSAI Agrément.

Date of Issue: **7<sup>th</sup> October 2020**

Signed



**Seán Balfe**  
**Director of NSAI Agrément**

Readers may check that the status of this Certificate has not changed by contacting NSAI Agrément, NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. [www.nsai.ie](http://www.nsai.ie)

**Revisions:**

**8<sup>th</sup> April 2021:** General revisions.

## **Bibliography**

- [1] IS EN 13914-1:2016 *Design, preparation and application of external rendering and internal plastering – External rendering.*
- [2] BS 5250:2016 *Code of practice for control of condensation in buildings.*
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- [5] IS EN 13501-1:2007 *Fire classification of construction products and building elements – Classification using data from reaction to fire tests.*
- [6] IS EN 13163:2012+A2:2016 *Thermal insulation products for buildings – Factory made expanded polystyrene (EPS) products – Specification.*
- [7] IS EN 13162:2012+A1:2015 *Thermal insulation products for buildings – Factory made mineral wool (MW) products – Specification.*