

Pariso Mince External Wall Insulation System

Système d'isolation pour murs extérieurs Wärmedämmung für Außenwand

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 Pariso Mince External Wall Insulation System. This ETIC system is comprised of:

- Surface preparation of masonry or concrete substrate;
- Full system beads and render-only beads;
- Insulation board (standard white EPS, carbon-enhanced EPS, mineral wool, phenolic);
- Adhesive/reinforcing coat,
- Glass fibre mesh;
- Silicone finish
- Mechanical fixings;
- Adhesive fixings;
- Weather-tight joints;
- Movement joints;
- Provision for limiting cold bridging at external wall/floor junctions in compliance with Acceptable Construction Details published by the DHPCLG;
- Provision for fire stopping at external compartment walls and floors.

The system is designed and manufactured by ParexGroup SA. ParexGroup SA has approved Tradecraft Ltd to fulfil certain functions on its behalf such as:

- Provide project specific design in accordance with an approved design process;
- Approve, monitor and review approved applicators;
- Supply all materials and components.

The installation of each system is carried out by installers who have been trained by Tradecraft Ltd, and are approved by ParexGroup SA and NSAI Agrément to install the system.

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

USE:

This Certificate covers the system for use as external insulation for refurbishment/retrofit of existing masonry or concrete buildings, 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 (15m) in height on purpose group 1(b) as defined in TGD to Part B of the Building Regulations 1997 to 2019. The mineral wool system is non-combustible with a fire classification of A2-s1, d0 to IS EN 13501-1 and may be used on heights in excess of this – the Certificate holder must be contacted for the specific build-up, fixing details etc.

Detail Sheet 1 covers the system for use as external insulation on new concrete and masonry residential buildings.

The system has not been assessed for use with timber frame or steel frame construction.

In an Irish context, the appropriate 'Impact resistance' category should be specified as described in Section 4.1.2, specifically Table 2 which lists a range of system build-ups and their corresponding impact resistance categories.

MANUFACTURE, DESIGN AND MARKETING:

The system is designed and manufactured by:

ParexGroup SA,
19 Place de la Resistance,
CS 50053
F-92445 Issy les Moulineaux cedex,
France.
T: 0049 141 17 45 45
F: 0049 141 17 46 70
W: www.parexlanko.com

Project specific design, technical support, marketing and application approval are performed by:

Tradecraft Ltd.,
Unit 2,
Tougher Business Park,
Newbridge Road,
Naas,
Co. Kildare.
T: 045 409050
F: 045 409051
E: sales@tradecraft.ie
W: www.tradecraft.ie

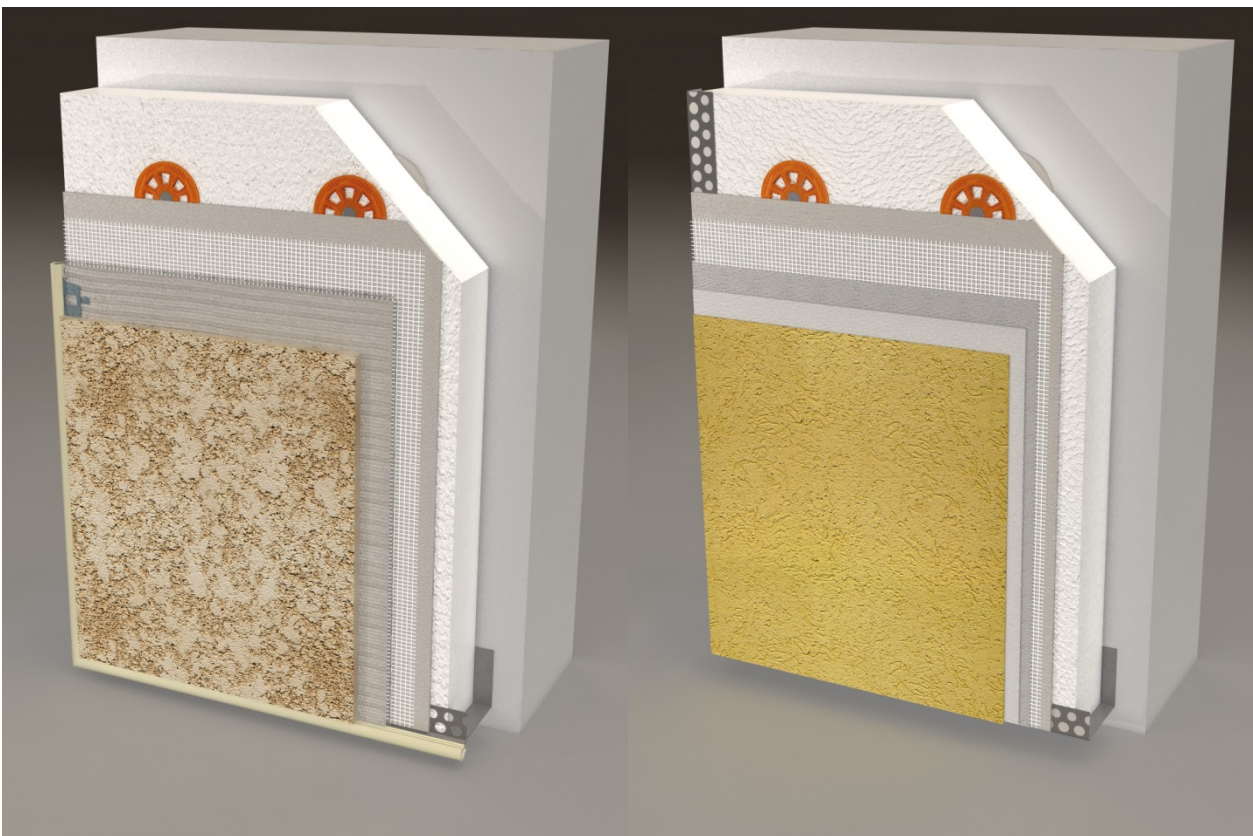


Figure 1: Pariso Mince Acrylic & Cement Based Build Ups

1.1 ASSESSMENT

The external insulation systems included in this Certificate, which have been tested in accordance with the requirements of ETAG 004 (ref. ETA 04/0014), 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, the Pariso Mince External Wall Insulation System, when installed by Tradecraft Ltd trained and approved contractors registered with NSAI, in accordance with this Certificate and Tradecraft Ltd specific design, can meet the requirements of the Building Regulations 1997 to 2019, as indicated in Section 1.2 of this Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2019

REQUIREMENTS:

Part D – Materials and Workmanship

D3 – Proper Materials

The Pariso Mince External Wall Insulation System, as certified in this Certificate, is comprised of 'proper materials' fit for their intended use (see Part 4 of this Certificate).

D1 – Materials & Workmanship

The Pariso Mince External Wall Insulation System, as certified in this Certificate, meets the requirements for workmanship.

Part A - Structure

A1 – Loading

The Pariso Mince External Wall Insulation System once appropriately detailed, designed and constructed has adequate strength and stability to meet the requirements of this Regulation (see Part 3 of this Certificate).

A2 – Ground Movement

The Pariso Mince External Wall Insulation System can be incorporated into structures that meet this requirement (see Parts 3 and 4 of this Certificate).

Part B – Fire Safety

B4 – External Fire Spread

Part B Vol 2 – Fire Safety

B9 – External Fire Spread

The Pariso Mince External Wall Insulation System can be incorporated into structures that meet this

requirement (see Parts 3 and 4 of this Certificate).

Part C – Site Preparation and Resistance to Moisture

C4 – Resistance to Weather and Ground Moisture

External walls above DPC level have adequate weather resistance in all exposures to prevent the passage of moisture from the external atmosphere into the building as specified in Part 3 of this Certificate.

Part F – Ventilation

F2 – Condensation in Roofs

The system as certified can be incorporated into structures that will meet the requirements of this Regulation (see Parts 3 and 4 of this Certificate).

Part J – Heat Producing Appliances

J3 – Protection of Building

When the Pariso Mince External Wall Insulation System is used in accordance with Section 4.1 of this Certificate, wall lining, insulation and separation distances meet this requirement (see Part 4 of this Certificate).

Part L – Conservation of Fuel and Energy

L1 – Conservation of Fuel and Energy

The walls of the Pariso Mince External Wall Insulation System can be readily designed to incorporate the required thickness of insulation to meet the Elemental Heat Loss method calculations for walls as recommended in Part L of the Building Regulations 1997 to 2019 (see Part 4 of this Certificate).

L2 – Conservation of Fuel and Energy

At interface junctions at windows and at junctions between elements, the Pariso Mince External Wall Insulation 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.

	Components	Thickness (mm)
Insulation materials with associated methods of fixing	Insulation product: EPS: EPS-EN 13163-T2-L2-W2-S2-P4-DS(70,-)1-DS(70,90)1-DS(N)2-WL(T)1-TR100, TR150, TR200 MW: MW-EN 13162-T5-CS(10/&)10-TR5 Nominal density 140kg/m ³ PHS: K5 EWB Grade CFC/HCFC-free to IS EN 13166 Density 40kg/m ³ ; Minimum compressive strength 150kN/m ² (Note: Primer coat MICRO-GOBETIS 3000 must be applied to PHS prior to application of the base coat)	40 to 300 30 to 300 30 to 200
	Supplementary adhesive: <ul style="list-style-type: none"> • MAITE (cement-based powder requiring addition of about 17% in weight water) • COLLE CCP+ (grey cement-based powder requiring addition of about 22% in weight water) • UNITE (white cement-based powder requiring addition of about 22% in weight water) • FACITE (grey cement-based powder requiring addition of about 22% in weight water) 	-
	Anchors: <ul style="list-style-type: none"> • IFXV (ejotherm STR U/STR U 2G, Koelner KI-10NS, Koelner TFIX-8S, Koelner TFIX-8ST, Rawlplug Insulation System R-TFIX-8S, termox SV II ecotwist only with UNITE) • IFXF (ejotherm NTK U, Ejot H1 eco, Ejot H3, Koelner KI-10, Koelner KI-10M, Koelner KI-10N, Koelner KI-10PA, Koelner TFIX-8M, Rawlplug Insulation System R-TFIX-8S, Rawlplug Facade Insulation Fixing R-TFIX-8M) 	-
Base coat	MAITE: powder requiring addition of about 17% in weight water, consisting of cement, a vinylic micronised copolymer, calcium carbonate and silicate as particles and specific additives	> 3.0
	UNITE: cement-based powder requiring addition of about 22% in weight of water for use on EPS and UNITE finishing coats only	> 6.0
	FACITE: powder requiring addition of about 21 to 23% in weight of water, consisting of grey cement, a vinylic micronized copolymer, calcium carbonate and silica as particles and specific additives for use on EPS and acrylic finishing coats only	> 3.0
Glass fibre meshes	<ul style="list-style-type: none"> • Standard meshes (glass fibre meshes with mesh size between 3 and 6mm): <ul style="list-style-type: none"> - IAVPC (>160g/m², standard alkaline resistance for system with adhesive fixing) - IAVU (>160g/m², high alkaline resistance for system with mechanical fixing) • Reinforced meshes (implemented in addition of the standard mesh to improve the impact resistance, usually the first 2.4m height, classified as high impact areas): <ul style="list-style-type: none"> - IAVR (500g/m², high impact resistance) 	-
Key coat	<ul style="list-style-type: none"> • REVLANE+ REGULATEUR: ready to use pigmented liquid to apply before each of the following finishing coats except for MAITE projeté, MAITE avec granulats and EHI and UNITE (i.e. only for use with acrylic) • SILICANE FOND: uncoloured liquid requiring addition of 100% weight • SILICANE PEINTURE, to apply before silicate-based finishing coats (Note: SILICANE FOND can be used as a pure product before application of CALCIFIN) 	-
Finishing coats	With MAITE or FACITE as base coat Ready to use pastes – acrylic binder: <ul style="list-style-type: none"> • REVLANE+ IGNIFUGE TALOCHE FIN (particle size 1.0 mm, contains FRA) • REVLANE+ IGNIFUGE TALOCHE GROS (particle size 1.6 mm, contains FRA) • REVLANE+ IGNIFUGE RIBBE FIN (particle size 1.6 mm, contains FRA) Ready to use pastes – acrylic binder with coloured marble aggregates: <ul style="list-style-type: none"> • GRANILANE+ (particle size 1.8 mm) 	Regulated by particle size Regulated by particle size

Table 1: Definition of the Construction Product (Kit)

	Components	Thickness (mm)
Finishing coats	Ready to use pastes – acrylosiloxane binder: <ul style="list-style-type: none"> • REVLANE+ SILOXANE IGNIFUGE TF (particle size 1.0 mm, contains FRA) • REVLANE+ SILOXANE IGNIFUGE TG (particle size 1.6mm, contains FRA) • REVLANE+ SILOXANE IGNIFUGE RB (particle size 1.6mm, contains FRA) 	Regulated by particle size
	Ready to use pastes – silicate binder: <ul style="list-style-type: none"> • SILICANE TALOCHE FIN (particle size 1.0 mm) • SILICANE TALOCHE GROS (particle size 1.6mm) 	Regulated by particle size
	Cement-based powder requiring addition of about 17% in weight water: <ul style="list-style-type: none"> • MAITE with marble aggregates: <ul style="list-style-type: none"> - MARBRI Granulats (particle size 3.0 – 6.0 mm) 	About 6.0
	<u>With MAITE as base coat</u>	
	Cement based powder requiring addition of about 17% in weight water: <ul style="list-style-type: none"> • MAITE associated with the following paints: Pigmented liquid requiring addition of 20% in weight SILICANE FOND to apply in two layers – silicate binder: SILICATE PEINTURE (application of SILICANE FOND after MAITE and before SILICANE PEINTURE)	About 1.5
	Calcic-lime based powder requiring addition of 24% to 26% in weight water: <ul style="list-style-type: none"> • CALCIFIN (particle size 1.0mm, consumption 1.8 to 2.2kg/m² powder) 	Regulated by particle size
	Calcic-lime based powder requiring addition of 22% to 23% in weight water: <ul style="list-style-type: none"> • CALCILISE (particle size 0.8mm, consumption 3.0 to 3.4kg/m² powder) 	2.5 to 3.0
	Ready to use pastes – acrylosiloxan binder: <ul style="list-style-type: none"> • PAREX DECO TRAVERTIN (particle size 0.8mm) 	About 1.5
	Cement based powder requiring addition of about 20% to 24% in weight water: <ul style="list-style-type: none"> • EHI GM (max particle size 3.0mm) with the two following possible textures: <ul style="list-style-type: none"> - Rough or partly smoothed rough - Scraped 	About 10.0 About 8.0 (after scraping)
	Cement based powder requiring addition of 20% to 24% in weight water: <ul style="list-style-type: none"> • EHI GF (Grains Fins; max particle size 2.0mm) with the two following possible textures: <ul style="list-style-type: none"> - Rough of partly smoothed rough - Scraped 	About 10.0 About 8.0 (after scraping)
<u>With FACITE as base coat</u>		
Cement based powder requiring addition of about 22% in weight water: <ul style="list-style-type: none"> • FACITE associated with the following paints: <ul style="list-style-type: none"> - Pigmented liquid requiring addition of 20% in weight SILICANE FOND to apply in two layers – silicate binder: SILICATE PEINTURE (application of SILICANE FOND after FACITE and before SILICANE PEINTURE) 	About 1.5	
<u>With UNITE as base coat</u>		
Cement based powder requiring addition of about 22% in weight water: <ul style="list-style-type: none"> • UNITE with the following three textures: <ul style="list-style-type: none"> - Rough or partly smoothed rough - Scraped - Structured 	About 8.0 About 6.0 (after scraping) About 8.0	
Notes: <ul style="list-style-type: none"> • Mechanical fixings to be provided in accordance with the project specific design requirements based on test results. • Where required, 1 additional stainless steel fire fixing per metre squared shall be provided. • Fire fixings are not required two storey single occupancy dwellings. • Fixings must be provided around all window and door openings to ensure adequate and robust edge restraint over the design life. • Secure supports to be provided for soil and rainwater pipe brackets, aerials, lighting, cameras, signage etc. in accordance with the project specific design as appropriate. • Brick slips in accordance with I.S. EN 771-1 and the manufacturer’s specification may also be used. 		

Table 1 contd: Definition of the Construction Product (Kit)

2.1 PRODUCT DESCRIPTION

The Pariso Mince External Wall Insulation System range is summarised in Table 1 and consists of thermal insulation boards/batts fixed both adhesively and mechanically to the external façade of a building. A base coat layer incorporating reinforcement mesh and a decorative finish is then applied. Ancillary materials are as follows:

- ParexGroup SA aluminium or PVC horizontal starter track.
- Range of standard ParexGroup SA profiles, including PVC mesh angle bead, armour angle and drip edge bead.
- ParexGroup SA profile fixings.
- ParexGroup SA sealants.

The substrate on which the Pariso Mince External Wall Insulation System will be used must have a reaction to fire class A1 or A2-s1 d0 in accordance with IS EN 13501-1:2007+A1:2009 *Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests*.

2.2 MANUFACTURE, SUPPLY AND INSTALLATION

ParexGroup SA is responsible for the manufacture and supply of all components to approved specifications, in accordance with the ParexGroup SA approved supplier system. ParexGroup SA has appointed Tradecraft 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;
- Sales and marketing.

The installation of each system is carried out by Tradecraft Ltd trained and approved installers in accordance with Tradecraft Ltd project specific design 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 (see Section 2.4.1 of this Certificate).

2.2.1 Quality Control

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

2.3 DELIVERY, STORAGE AND MARKING

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 for the designation code that must be included on the insulation identification label.

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 should 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.

Each container for other components, e.g. mesh cloth, primers, renders etc., bears the manufacturer's and product's identification marks, batch number and the NSAI Agrément logo incorporating the Certificate number. These components must be stored in accordance with the manufacturer's instructions, in dry conditions, and at the required storage temperatures. They should be used within the stated shelf life, where applicable.

2.4 INSTALLATION

2.4.1 Approved Installers

Installation shall be carried out by Tradecraft Ltd trained applicators who:

- 1) Are required to meet the requirements of an initial site installation check by NSAI Agrément prior to approval and are subject to the NSAI Agrément ETICS Approval Scheme.
- 2) Are approved by Tradecraft Ltd and NSAI Agrément to install the product.
- 3) Have undertaken to comply with the Tradecraft Ltd installation procedure, requirements of this Certificate, and the Tradecraft Ltd Code of Practice for approved contractors.
- 4) Are employing Supervisors and Operatives who have been issued with appropriate identity cards by Tradecraft Ltd. Each team must consist of at least one ETICS Operative and ETICS Supervisor (can be the same person).

- 5) Are subject to supervision by Tradecraft Ltd, including unannounced site inspections by both the Certificate holder and NSAI Agrément, in accordance with the NSAI Agrément ETICS Approval Scheme.
- 6) Are subject to periodic surveillance by the system manufacturer – site visits and office records.

2.4.2 General

Tradecraft Ltd, with technical support from ParexGroup SA, prepare a bespoke site packaged for each project, including U-value calculations, requirements for materials handling and storage, method statements for installation, building details, fixing requirements, provision for impact resistance, maintenance requirements etc. This document forms part of the contract documentation for circulation to the home owner and the installer. Installers will be expected to adhere to the specification. Deviations must be approved by an Tradecraft Ltd technical representative.

The Tradecraft Ltd technical representatives will visit the site on a regular basis to ensure that work is carried out in according with the project specific site package, including the Certificate holder's installation manual.

Mineral fibre batts and lamella fire stop should be protected from moisture prior to and during installation. If the board or lamella gets wet during or post installation, it should not be rendered until dry. 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 (ACD) document.

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 survey of the property shall be carried out by a suitably qualified Tradecraft Ltd technical representative or Tradecraft Ltd and NSAI Agrément approved contractor and all key information is recorded on the site survey form. The Tradecraft Ltd pre-

installation survey is also used to price the project and identify all the relevant factors/technical information which needs to be considered in the design of the external cladding system and important information to be included in the site specific pack. This pack would typically include wind load calculations and a fixing specification summary sheet, thermal bridging evaluation, condensation risk analysis, elemental U-value calculation, and a full set of project specific building details. The survey will also establish the suitability of the substrate, and the Tradecraft Ltd technical representative will determine if pullout resistance testing is required and what substrate preparation is required.

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 preventing installation of the Pariso Mince External Wall Insulation System in accordance with this Certificate and the Certificate holder's instructions exist, these discrepancies should be discussed with the Certificate holder and a solution implemented with the approval of the Certificate holder.

2.4.4 Procedure

Following award of contract, the site specific pack is prepared by Tradecraft Ltd based on the information recorded on the site survey form.

- Prepare substrate in accordance with the project specific site package. This will include brushing down of walls, washing with clean water and treatment with a fungicidal wash as required.
- The integrity of the existing substrate is assessed by checking the surface for loose render by tapping with a hammer and listening for a hollow sound. If render is loose it must be removed and replaced.
- At existing window and door frame reveals, the existing plaster reveals should only be removed if a minimum clearance of 30mm cannot be achieved between the reveal and the window/door frame. This clearance must allow for opening sections of window and door frames. This is to allow the application of insulation around the reveals and heads of the doors and windows to significantly reduce cold bridging.
- For existing concrete sills, best practice is to cut back the concrete sill and insulate over it to minimise the effects of cold bridging at this junction.
- 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.
- Refer to the site package for guidance on modifications of down pipes, soil and vent pipes, pipe extensions etc.
- Where possible all pipe work should be relocated as required to accommodate the insulation. Where pipe work cannot be relocated and is to be housed in the depth of the system, access for maintenance must be maintained through the use of removable covers or alternative design to be approved by the Certificate holder.
- Base beads and all full system beads are fixed as specified. Insulation and render only beads are fixed as specified in the site package.
- The starter track is mechanically fixed to the substrate level with the DPC line. This provides a horizontal line for the installation of insulation panels as well as providing reinforcement to the lower edge of the system.
- XPS boards are then fixed to the wall below the starter track to provide the necessary resistance to impact and capillary action. To minimise the effects of cold bridging, the XPS should extend below ground level where possible. Where this is not possible the first run of XPS insulation boards is positioned at ground level.
- The insulation boards are bonded to the wall by applying the specified adhesive (see Table 1) to the boards. The insulation board should be immediately placed on the substrate and pressed into place.
- Before applying adhesive to mineral wool, the boards must be cleared of dust and loose particles. The boards should be initially covered with adhesive by applying a thin layer using a smooth edge trowel in order to increase adhesion.
- Subsequent rows of insulation boards are installed on top of the starter track and positioned so that the vertical board joints are staggered and overlapped at the building corners.
- To avoid thermal bridging, ensure a tight adhesive free joint connection between adjacent insulation boards. A foam filler approved by the Certificate holder may be used for filling gaps up to 5mm. Larger gaps should be avoided. Where 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.
- At façade openings, e.g. window and door openings, insulation boards must be continued around the corner. Insulation boards must overlap at these locations and can be cut to size to facilitate this. Any projecting EPS boards should be levelled out using a rubbing board with local trimming as required on mineral wool boards.
- 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 DHPCLG, Detail 2.21, to achieve an R-value of 0.6m²K/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 Section 4.5 of this Certificate.
- To minimise the effects of cold bridging in all other junctions over and above windows and doors, designers should consider the recommendations of the Acceptable Construction Details Document (published by the DHPCLG), Section 2 – External Wall Insulation. Where clearance is limited, strips of approved insulation (with better thermal resistance values) should be installed to suit available margins and details recorded as outlined in Section 4.5 of this Certificate.
- Details of mechanical fixings (including their arrangement in the insulation boards) are specified in the project specific design based on pullout test results, substrate type and wind loading data. A minimum number of 7 mechanical fixings per m² for EPS and phenolic, and 12 per m² for MW shall be installed unless otherwise specified in the project specific design.
- Above two stories an additional stainless steel fire fixing is provided at a rate of 1 per m².
- The heads of mechanical fixings cannot protrude beyond the plane of the boards, i.e. they should be exactly flush. Excessively deep insertion of fixing heads in the insulation material can cause cracking of the boards which in turn weakens the insulation. Filling indentations in these areas can cause thermal bridges and consequently may lead to plaster loosening in such areas.
- 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 with PVC stop-ends are installed in accordance with the Certificate holder's instructions, with a thin 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.
- Lamella fire stops are installed in accordance with the Certificate holder's instructions as defined in Section 4.2 of this Certificate, at locations defined in the project specific site package.
- For EPS insulation, any high spots or irregularities should be removed by lightly planning with a rasp to ensure the application of an even thickness of base coat. After sufficient stabilisation of the installed insulation (normally 2 days, during which time the insulation should be protected from exposure to extreme weather conditions to prevent degradation), the insulated wall is ready for the application of the base and finish coats.
- EPS boards exposed to UV light for extended periods prior to the application of the render coatings are subject to breakdown and should be rasped down as required in preparation for rendering.
- Movement joints shall be provided in accordance with the project specific site package.
- At all locations where there is a risk of insulant exposure, e.g. window reveals, eaves or stepped gables, the system must be protected, e.g. by an adequate overhang or by purpose-made sub-sills, seals or flashings.
- Building corners, door and window heads and jambs are formed using angle beads bonded to the insulation in accordance with the Certificate holder's instructions.
- To minimise the thermal bridge effect during the installation of railings, exterior lighting, shutter guide rails, canopies, aerials, satellite dishes etc, the Certificate holder offers a range of anchoring options. These anchors must be installed in accordance with the Certificate holder's instruction, as defined in the project specific site package, during the installation of the insulation boards.
- Where the external insulation meets intersecting walls etc, and the abutting structure cannot be cut back, the edge of the insulation where it meets the wall should be

protected using PVC universal stop-trim, followed by the application of a low modular silicone sealant between the top coat and the abutting structure.

- Prior to application of base coat and finish coat, all necessary protective measures such as taping off of existing window frames and covering of glass should be in place.
- If it is not possible to install the ETICS to all external walls, alternative forms of thermal upgrades, such as full fill cavity wall insulation or dry lining should be provided where physically and economically feasible. There should be an adequate overlap at the junction between the ETICS and the alternative insulation method selected to limit thermal bridging at this interface.
- In sunny weather, work should commence on the shady side of the building and be continued following the sun to prevent the rendering drying out too rapidly.
- Base coat is mixed and must not be applied until after the adhesive has hardened, i.e. not less than 24 hours afterwards.
- Apply the base coat to the insulation boards to the width of the mesh. The reinforcing mesh must be pressed into the base coat with a 100mm overlap. The mesh should always be embedded in such a way that in the case of thin-layered reinforcement the mesh is in the middle of the base coat layer, and in the case of thick-layered reinforcement it is in the upper third of the base coat layer. The mesh can be laid either vertically or horizontally.
- An additional diagonal reinforcement must be applied around the façade openings. This involves embedding diagonal strips of reinforcing mesh into the base coat at a 45° angle in relation to the lines determined by the reveal.
- The primer and/or finish coat must not be applied until after the base coat has dried out fully (3 days approximately).
- Primers (see Table 1 for approved list of primers and their compatibility with finishing coats) shall be applied in accordance with the Certificate holder's instructions and allowed to dry fully prior to the application of the finishing coat. Render primers prevent penetration of impurities from the adhesive into the render, protects and reinforces the substrate, and increases the bond strength between the render and the substrate.
- Finishing coats are applied in accordance with the Certificate holder's instructions.
- To minimise colour shade variations and to avoid dry line jointing, continuous surfaces should be completed without a break. If breaks cannot be avoided, they should be made where services or architectural features, such as reveals or lines of doors and windows, help mask cold joints. Where long uninterrupted runs are planned,

containers of the finish coat should be checked for batch numbers. Containers with different batch numbers should be checked for colour consistency.

- All rendering should follow best practice guidelines, e.g. BS 8000-0:2014 *Workmanship on construction sites – Introduction and general principles* and IS EN 13914-1:2016 *Design, preparation and application of external rendering and internal plastering – External rendering*.
- On completion of the installation, external fittings, rainwater goods etc. are fixed through the system into the substrate in accordance with the Certificate holder's instructions.
- When obstructions abut external walls such as a boundary wall, best practice would be to cut back the boundary wall to allow for the continuation of the external insulation system, or in the case of unheated lean-to buildings the external insulation system should continue around the lean-to.
- All necessary post-application inspections should be performed and the homeowner's manual completed and handed over to the homeowner accordingly.

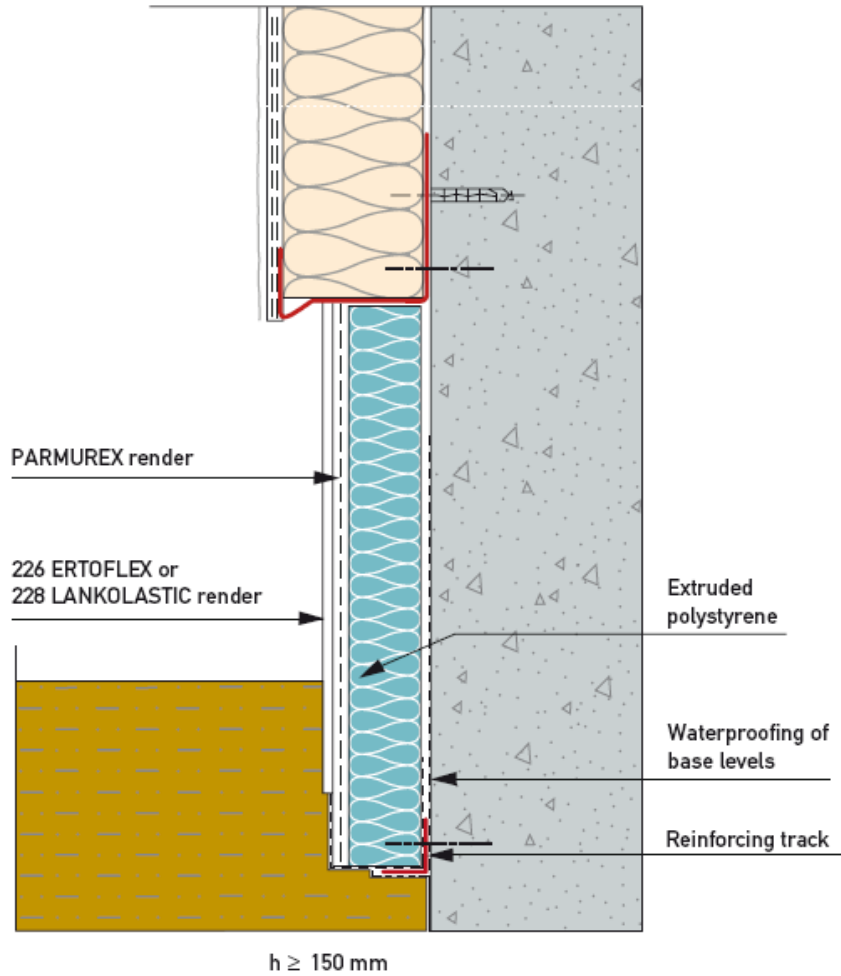


Figure 2: Below DPC Detail

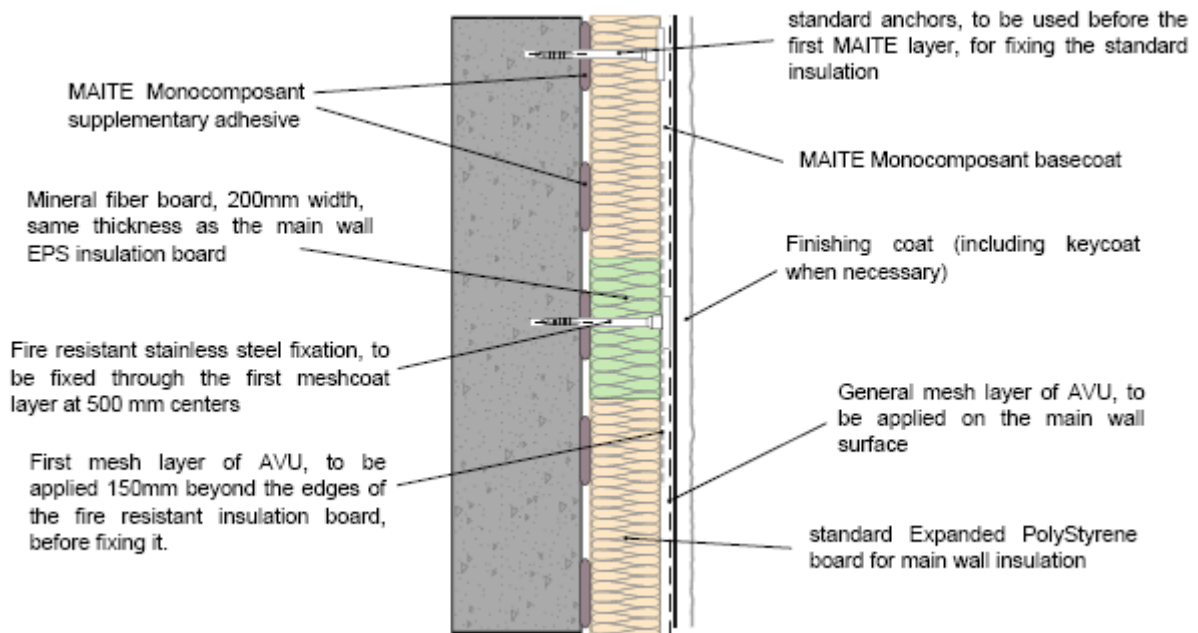


Figure 3: Horizontal/Vertical Fire Barriers

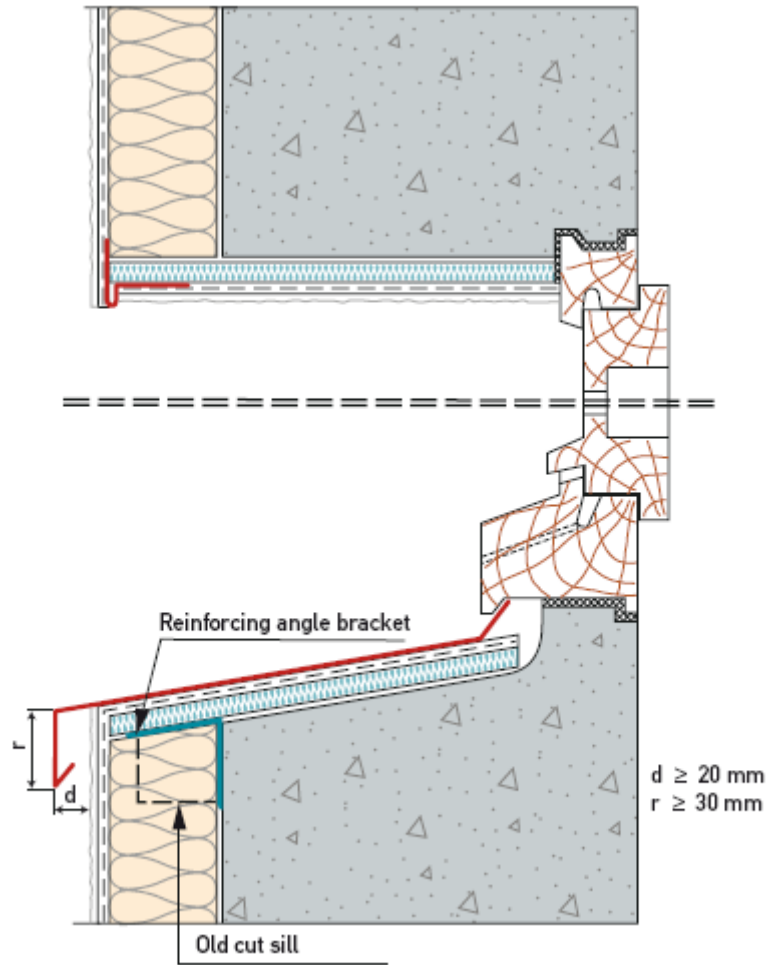


Figure 4: Window Sill & Head Details

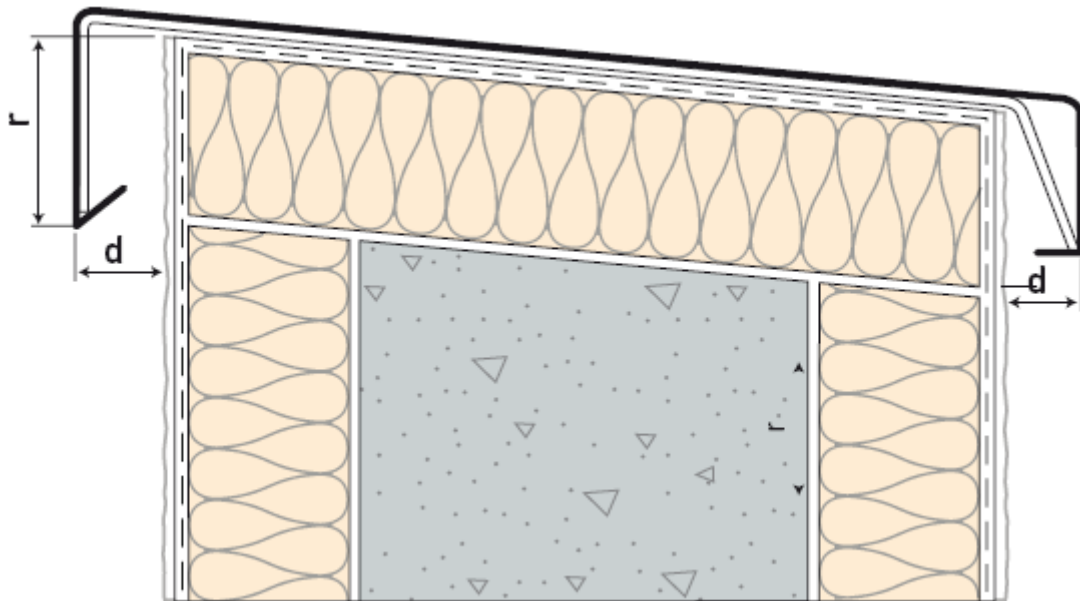


Figure 5: Parapet Detail

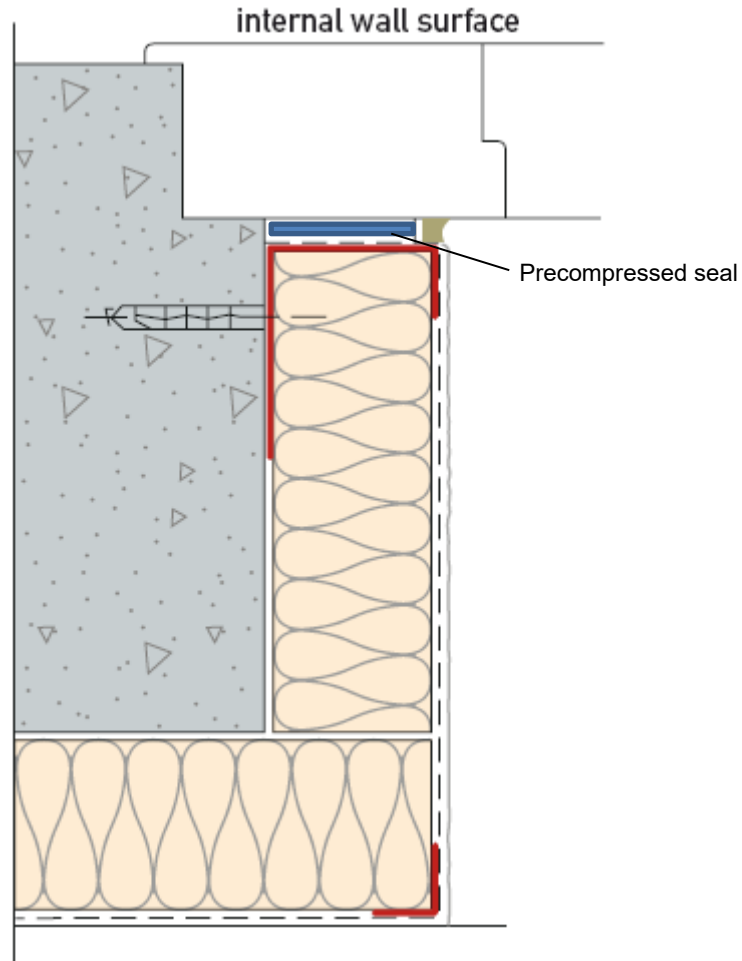


Figure 6: Window Reveal Detail

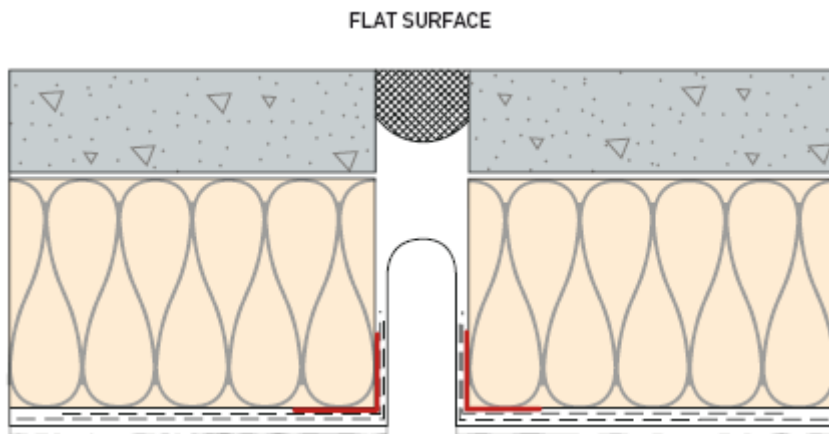


Figure 7: Expansion Joint Detail

3. GENERAL

The system is designed by Tradecraft Ltd on a project specific basis. Where the external insulation system is being applied to improve the thermal performance of an existing building, Tradecraft 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, condensation risk analysis, 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 5250:2011+A1:2016 *Code of practice for control of condensation in buildings*. This includes the use of approved detailing as shown in Figures 1 to 7 incorporating the requirements of SR 54:2014 *Code of practice for the energy efficient retrofit of dwellings* and, where possible, meeting all of the Acceptable Construction Details published by the DHPCLG.
- 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 IS EN 1991-1-4:2005 *Actions on structures – General actions – Wind actions*.
- j) Design for fire resistance, fire spread and fire stopping, as defined in Section 4.2 and 4.3 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 home owner'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 the DHPCLG.

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, the plinth insulation must be kept 10mm above ground level.

4.1 STRENGTH AND STABILITY

4.1.1 Wind Loading

The Pariso Mince External Wall Insulation System 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 1991-1-4:2005. A general factor of safety of 1.5 is applied to design wind loads.

4.1.2 Impact Resistance

a) The Pariso Mince External Wall Insulation System has been classified as defined in Table 2 to 6 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.

4.2 BEHAVIOUR IN RELATION TO FIRE

The reaction to fire classification according to IS EN 13501-1:2007 was A2-s1, d0 for the full MW system including insulation board, adhesive, base coat, finishing coats and decorative coats, and B-s1,d0 for the full EPS system including insulation board, adhesive, base coat, finishing coats and decorative coats (see Table 7).

Systems that achieve a Class A or Class B Reaction to Fire Classification are suitable for use up to a maximum of six storeys (18m) 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 (15m) in height on purpose group 1(b), as defined in TGD to Part B of the Building Regulations 1997 to 2019.

The mineral wool board is classified as non-combustible as per Table A8(d) of TGD to Part B of the Building Regulations 1997 to 2019.

With regard to fire stopping of cavities 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 to 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 is 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/m³), 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.

4.3 PROXIMITY OF HEAT PRODUCING APPLIANCES

Combustible material must be separated from a brick or blockwork chimney by at least 200mm from a flue, or 40mm from the outer surface of the brick or blockwork chimney, in accordance with Clause 2.15 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.

4.4 THERMAL INSULATION

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

Declarations of Performance are 0.038W/mK for the standard white EPS board, 0.031W/mK for the graphite enhanced EPS board, and 0.038W/mK for the mineral wool board (density 140kg/m³). These have not been assessed by NSAI Agrément. Table 7 shows typical insulation thicknesses to achieve the required 0.27W/m²K U-value (retrofit only) for different construction types.

Calculation of U-values will be required on individual projects to confirm a U-value of 0.27W/m²K or better has been achieved, based on the wall construction and the insulation used. The thermal conductivity (λ) value of the insulation to be used in all U-value calculations must be the $\lambda_{90/90}$ value.

When the system is to be applied to a masonry cavity wall, consideration should be given to the treatment of the unventilated 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 external insulation 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.

4.5 LIMITING THERMAL BRIDGING

The linear thermal transmittance ' ψ ' (Psi) describes the heat loss associated with junctions and around openings. Window and door reveal design used on the Pariso Mince External Wall Insulation System 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 ' γ ' 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 the Acceptable Construction Details published by the DHPCLG, 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.

' ψ ' values for other junctions outside the scope of this Certificate should be assessed in accordance with BRE IP1/06 *Assessing the effects of thermal bridging at junctions and around openings* and BRE BR 497 *Conventions for calculating linear*

thermal transmittance and temperature factors in accordance with Appendix D of TGD to Part L of the Building Regulations 1997 to 2019.

As per Acceptable Construction Details, a minimum thermal resistance of 0.6m²K/W should be provided at window reveals, heads and sills.

4.6 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.

4.6.1 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 Section 4.5 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.

4.6.2 Interstitial Condensation

An interstitial condensation risk analysis will be carried out by Tradecraft Ltd in accordance with BS 5250:2011+A1:2016 and the design modified as appropriate to reduce the risk of surface condensation to acceptable levels.

4.6.3 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.

4.7 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.

4.8 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.

4.9 DURABILITY

4.9.1 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 fixings specifications;
- Joint design;
- Construction details;
- Maintenance requirements.

The assessment indicates that the system should remain effective for at least 30 years, providing that it is designed, installed and maintained in accordance with this Certificate. Any damage to the surface finish shall be repaired immediately and regular maintenance shall be undertaken as outlined in Section 4.7 of this Certificate.

4.9.2 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 dependent 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 case of algal growth, the procedure in the Parex Lanko 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.

4.10 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.

4.11 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING

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

4.12 OTHER INVESTIGATIONS

- (i) Existing data on product properties in relation for 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 and movement joints) were assessed and approved for use in conjunction with this Certificate.
- (iv) Site visits were conducted to assess the practicability of installation the history of performance in use of the product.

Rendering system: Base coat with finish coat indicated hereafter	Single standard mesh	Double standard mesh	Reinforced mesh + standard mesh
With or without REVLANE+ REGULATEUR: - REVLANE+ IGNIFUGE TALOCHE FIN - REVLANE+ IGNIFUGE TALOCHE GROS - REVLANE+ IGNIFUGE RIBBE FIN	Category II	Category I	
With REVLANE+ REGULATEUR: - GRANILANE+	Category I		
With or without REVLANE+ REGULATEUR: - REVLANE+ SILOXANE IGNIFUGE TF - REVLANE+ SILOXANE IGNIFUGE RB - REVLANE+ SILOXANE IGNIFUGE TG	Category I		
With SILICANE FOND & SILICANE PEINTURE: - SILICANE TALOCHE FIN - SILICANE TALOCHE GROS	Category II	Category II	
With REVLANE+ REGULATEUR: - PAREX DECO TRAVERTIN	Category I		
MAITE with SILICANE FOND & SILICANE PEINTURE:	Category II	Category I	
MAITE with MARBRI GRANULATS	Category II		Category I
With or without SILICANE FOND: - CALCIFIN	Category II	Category I	
With or without SILICANE FOND: - CALCILISSE	Category III	Category I	
- EHI GM - EHI GF	Category I		

Table 2: Impact Resistance – MAITE as base coat and EPS insulation

Rendering system: Base coat with finish coat indicated hereafter	Single standard mesh	Double standard mesh	Reinforced mesh + standard mesh
With or without REVLANE+ REGULATEUR: - REVLANE+ IGNIFUGE TALOCHE FIN - REVLANE+ IGNIFUGE TALOCHE GROS - REVLANE+ IGNIFUGE RIBBE FIN	Category I		
With REVLANE+ REGULATEUR: - GRANILANE+	Category II	Category I	
With or without REVLANE+ REGULATEUR: - REVLANE+ SILOXANE IGNIFUGE TF - REVLANE+ SILOXANE IGNIFUGE RB - REVLANE+ SILOXANE IGNIFUGE TG	Category I		
With SILICANE FOND & SILICANE PEINTURE: - SILICANE TALOCHE FIN - SILICANE TALOCHE GROS	Category II	Category II	
With REVLANE+ REGULATEUR: - PAREX DECO TRAVERTIN	Category I		
MAITE with SILICANE FOND & SILICANE PEINTURE:	Category II		
MAITE with MARBRI GRANULATS	Category I		
With or without SILICANE FOND: - CALCIFIN	Category II	Category I	
With or without SILICANE FOND: - CALCILISSE	Category II	Category I	
- EHI GM - EHI GF	Category I		

Table 3: Impact Resistance – MAITE as base coat and MW insulation

Rendering system: Base coat with finish coat indicated hereafter	Single standard mesh	Double standard mesh	Reinforced mesh + standard mesh
MAITE with MARBRI GRANULATS	Category I		
With or without REVLANE+ REGULATEUR:			
- REVLANE+ TALOCHE FIN/GROS - GRANILANE+ (CERASTONE)			

Table 4: Impact Resistance – MAITE as base coat and PHS insulation

Rendering system: Base coat with finish coat indicated hereafter	Single standard mesh	Double standard mesh	Reinforced mesh + standard mesh
With REVLANE+ REGULATEUR: - REVLANE+ IGNIFUGE TALOCHE FIN - REVLANE+ IGNIFUGE TALOCHE GROS - REVLANE+ IGNIFUGE RIBBE FIN	Category III	Category II	Category I
With REVLANE+ REGULATEUR: - REVLANE+ SILOXANE IGNIFUGE TF - REVLANE+ SILOXANE IGNIFUGE RB - REVLANE+ SILOXANE IGNIFUGE TG	Category III		Category I
With SILICANE FOND & SILICANE PEINTURE: - SILICANE TALOCHE FIN - SILICANE TALOCHE GROS	Category III	Category I	
With REVLANE+ REGULATEUR: - GRANILANE+	Category II	Category I	
FACITE with SILICANE FOND & SILICANE PEINTURE	Category II	Category I	

Table 5: Impact Resistance – FACITE as base coat and MW insulation

Rendering system: Base coat with finish coat indicated hereafter	Single standard mesh
UNITE: - Rough/partly smoothed rough - Scraped - Structured	Category I

Table 6: Impact Resistance – UNITE as base coat and EPS insulation

Insulation	Declared Thermal Conductivity ($\lambda_{90/90}$) of Insulation (W/mK)	Thickness of Insulation (mm)	U-Value (W/m ² K)
No external insulation	-	-	1.30
Standard white EPs	0.038	120	0.27
		160	0.21
Graphite enhanced EPS	0.031	100	0.27
		130	0.21
Mineral Wool	0.038	120	0.27
		160	0.21
These values are based on a typical house of 215mm hollow block construction (Building Regulations Part L 2017) with the following construction (internal to external): <ul style="list-style-type: none"> • 15 mm sand & cement render • Hollow block with 10mm mortar joint – 215mm • Adhesive – 1-2mm • Insulation board – as specified • Render finish with mesh basecoat – 7mm 			
No external insulation	-	-	1.30
Standard white EPS	0.038	120	0.27
		160	0.21
Graphite enhanced EPS	0.031	100	0.27
		130	0.21
Mineral Wool	0.038	120	0.27
		160	0.21
These values are based on a typical house of concrete block cavity-wall construction (Building Regulations Part L 2017) with the following construction (internal to external): <ul style="list-style-type: none"> • 13 mm sand & cement render • Concrete block – 100mm • Unventilated uninsulated air cavity • Concrete block – 100mm • Adhesive – 1-2mm • Insulation board – as specified • Render finish with mesh basecoat – 7mm 			

Table 7: Typical U-values (W/m²K)

Configuration	Declared organic content of the rendering system	Declared flame retardant content of the rendering system	Euroclass according to EN 13501-1
Insulation product: <ul style="list-style-type: none"> • EPS panels, density $\leq 20\text{kg/m}^3$, Euroclass E, thickness $\leq 300\text{mm}$ Base coat: <ul style="list-style-type: none"> • MAITE MONOCOMPOSANT Finishing coats: <ul style="list-style-type: none"> • EHI GM • EHI GF 	Base coat: 7.0% Finishing coats: 2.5 to 3.0%	Base coat: 0% Finishing coats: 0%	B-s1, d0
Insulation product: <ul style="list-style-type: none"> • EPS panels, density $\leq 20\text{kg/m}^3$, Euroclass E, thickness $\leq 300\text{mm}$ Base coat: <ul style="list-style-type: none"> • MAITE MONOCOMPOSANT Finishing coats: <ul style="list-style-type: none"> • REVLANE+ IGNIFUGE TALOCHE FIN/GROS • REVLANE+ IGNIFUGE RIBBE FIN • REVLANT+ SILOXANE IGNIFUGE TF/RB/TG • SILICANE TALOCHE • MAITE MONOCOMPOSANT with SILICANE PEINTURE • CALCIFIN • PAREX DECO TRAVERTIN • CALCILISSE • GRANILANE+ • MAITE with MARBRI GRANULATS 	Base coat: 7.0% Finishing coats: 3.3 to 10.1%	Base coat: 0% Finishing coats: 0 to 18.2%	B-s2, d0
Insulation product: <ul style="list-style-type: none"> • Rock wool panel (MW), Euroclass A1 Base coat: <ul style="list-style-type: none"> • MAITE MONOCOMPOSANT Finishing coats: <ul style="list-style-type: none"> • EHI GM • EHI GF • MAITE MONOCOMPOSANT sprayed/MARBRI GRANULATS • SILICANE TALOCHE • CALCIFIN • CALCILISSE • MAITE with SILICANE PEINTURE • PAREX DECO TRAVERTIN • REVLANE+ SILOXANE IGNIFUGE TG 	Base coat: 7.0% Finishing coats: 2.5 to 7.0%	Base coat: 0% Finishing coats: 0%	A2-s1, d0
Insulation product: <ul style="list-style-type: none"> • Rock wool panel (MW), Euroclass A1 Base coat: <ul style="list-style-type: none"> • MAITE MONOCOMPOSANT Finishing coats: <ul style="list-style-type: none"> • REVLANE+ IGNIFUGE TALOCHE FIN/GROS • REVLANE+ IGNIFUGE RIBBE FIN • REVLANE+ SILOXANE IGNIFUGE RF/RB 	Base coat: 7.0% Finishing coats: 8.5 to 10.1%	Base coat: 0% Finishing coats: 17.4 to 18.2%	A2-s2, d0
Insulation product: <ul style="list-style-type: none"> • Rock wool panel (MW), Euroclass A1 Base coat: <ul style="list-style-type: none"> • MAITE MONOCOMPOSANT Finishing coats: <ul style="list-style-type: none"> • GRANILANE+ 	Base coat: 7.0% Finishing coats: 8.0%	Base coat: 0% Finishing coats: 0%	B-s1, d0

Table 8: Reaction to Fire

Configuration	Declared organic content of the rendering system	Declared flame retardant content of the rendering system	Euroclass according to EN 13501-1
Insulation product: <ul style="list-style-type: none"> • EPS panels, density $\leq 20\text{kg/m}^3$, Euroclass E, thickness $\leq 300\text{mm}$ Base coat: <ul style="list-style-type: none"> • FACITE Finishing coats: <ul style="list-style-type: none"> • FACITE with SILICANE PEINTURE • GRANILANE+ • SILICANE TALOCHE FIN/GROS 	Base coat: 3.2% Finishing coats: 6.3 to 8.0% Except for FACITE (3.2%) with SILICANE PEINTURE (15%)	Base coat: 0% Finishing coats: 0%	B-s2, d0
Insulation product: <ul style="list-style-type: none"> • EPS panels, density $\leq 20\text{kg/m}^3$, Euroclass E, thickness $\leq 300\text{mm}$ Base coat: <ul style="list-style-type: none"> • FACITE Finishing coats: <ul style="list-style-type: none"> • REVLANE+ IGNIFUGE TALOCHE FIN/GROS • REVLANE+ IGNIFUGE RIBBE FIN • REVLANT+ SILOXANE IGNIFUGE TF/RB/TG 	Base coat: 3.2% Finishing coats: 9.9 to 11.4%	Base coat: 0% Finishing coats: 17.2 to 17.5%	B-s2, d0
Insulation product: <ul style="list-style-type: none"> • EPS panels, density $\leq 20\text{kg/m}^3$, Euroclass E, thickness $\leq 300\text{mm}$ Base coat: <ul style="list-style-type: none"> • UNITE Finishing coats: <ul style="list-style-type: none"> • UNITE 	Base coat: 2.6% Finishing coats: 2.6%	Base coat: 0% Finishing coats: 0%	B-s1, d0

Table 8 contd: Reaction to Fire

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 issue 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 NSAI Agrément 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.

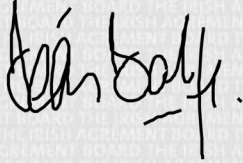
5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is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

NSAI Agrément

This Certificate No. **09/0342** is accordingly granted by the NSAI to **ParexGroup SA** on behalf of NSAI Agrément.

Date of Issue: **November 2009**

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

Revisions

11th January 2018: References to Building Regulations and standards updated.

12th March 2021: General revisions.



NSAI

Agrément

CERTIFICATE NO. 09/0342
DETAIL SHEET 1

Pariso Mince 60 Year External Wall Insulation System

PRODUCT DESCRIPTION

This Detail Sheet relates to the Pariso Mince 60 Year External Wall Insulation System, as defined in NSAI Agrément Certificate 09/0342.

USE:

The system for use as external insulation on new concrete and masonry residential buildings, 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 (15m) in height on purpose group 1(b) as defined in TGD to Part B of the Building Regulations 1997 to 2019. The mineral wool system is non-combustible with a fire classification of A2-s1, d0 to IS EN 13501-1 and may be used on heights in excess of this – the Certificate holder must be contacted for the specific build-up, fixing details etc.

Part One / Certification

1

1.1 ASSESSMENT

In the opinion of NSAI Agrément, the Pariso Mince 60 Year External Wall Insulation System, if used in accordance with this Detail Sheet, meets the requirements of the Building Regulations 1997 - 2017 as indicated in Section 1.2 of Certificate 09/0342.

1.2 BUILDING REGULATIONS 1997 to 2019

This matter is dealt with in NSAI Agrément Certificate 09/0342.

Part Two / Technical Specification and Control Data

2

2.1 PRODUCT DESCRIPTION

The Pariso Mince 60 Year External Wall Insulation System is summarised in Table 1.

2.2 MANUFACTURE, SUPPLY AND INSTALLATION

This matter is dealt with in Section 2.2 of NSAI Agrément Certificate 09/0342.

2.3 DELIVERY, STORAGE AND MARKING

This matter is dealt with in Section 2.3 of NSAI Agrément Certificate 09/0342.

2.4 INSTALLATION

This matter is dealt with in Section 2.3 of NSAI Agrément Certificate 09/0342.

	Components	Thickness (mm)
Insulation materials with associated methods of fixing	Insulation product: EPS: EPS-EN 13163-T2-L2-W2-S2-P4-DS(70,-)1-DS(70,90)1-DS(N)2-WL(T)1-TR100, TR150, TR200	40 to 300
	MW: MW-EN 13162-T5-CS(10/&)10-TR5 Nominal density 140kg/m ³	30 to 300
	Supplementary adhesive: <ul style="list-style-type: none"> • MAITE (cement based powder requiring addition of about 17% in weight water) • COLLE CCP+ (grey cement-based powder requiring addition of about 22% in weight water) 	-
	Anchors: <ul style="list-style-type: none"> • IFXV (ejotherm STR U/STR U 2G, Koelner KI-10NS, Koelner TFIX-8S, Koelner TFIX-8ST) • IFXF (ejotherm NTK U, Ejot H1 eco, Ejot H3, Koelner KI-10, Koelner KI-10M, Koelner KI-10N, Koelner KI-10PA, Koelner TFIX-8M) 	-
	NOTE: In some cases in new construction, such as with precast concrete panels where it is difficult to drill the high strength concrete, EPS insulation boards may be applied by bonding with adhesive only. The adhesive will be applied to the entire surface of the insulation boards with a notched trowel half-moon diameter 20mm.	
Base coat	MAITE: powder requiring addition of about 17% in weight water, consisting of cement, a vinylic micronised copolymer, calcium carbonate and silicate as particles and specific additives	> 6.0 (Two coats)
Glass fibre meshes	<ul style="list-style-type: none"> • Standard meshes (glass fibre meshes with mesh size between 3 and 6mm): <ul style="list-style-type: none"> - IAVPC (>160g/m², standard alkaline resistance for system with adhesive fixing) - IAVU (>160g/m², high alkaline resistance for system with mechanical fixing) • Reinforced meshes (implemented in addition of the standard mesh to improve the impact resistance, usually the first 2.4m height, classified as high impact areas): <ul style="list-style-type: none"> - IAVR (500g/m², high impact resistance) 	-
Key coat	<ul style="list-style-type: none"> • REVLANE+ REGULATEUR: ready to use pigmented liquid to apply before each of the following finishing coats except for MAITE projeté, MAITE avec granulats and EHI (i.e. only for use with acrylic) • SILICANE FOND: uncoloured liquid requiring addition of 100% weight SILICANE PEINTURE, to apply before silicate-based finishing coats (Note: SILICANE FOND can be used as a pure product before application of CALCIFIN) 	-
Finishing coats	Ready to use pastes – acrylic binder: <ul style="list-style-type: none"> • REVLANE+ IGNIFUGE TALOCHE FIN (particle size 1.0 mm, contains FRA) • REVLANE+ IGNIFUGE TALOCHE GROS (particle size 1.6 mm, contains FRA) • REVLANE+ IGNIFUGE RIBBE FIN (particle size 1.6 mm, contains FRA) 	Regulated by particle size
	Ready to use pastes – acrylic binder with coloured marble aggregates: <ul style="list-style-type: none"> • GRANILANE+ (particle size 1.8 mm) 	Regulated by particle size
	Ready to use pastes – acrylosiloxane binder: <ul style="list-style-type: none"> • REVLANE+ SILOXANE IGNIFUGE TF (particle size 1.6 mm, contains FRA) 	Regulated by particle size
	Ready to use pastes – silicate binder: <ul style="list-style-type: none"> • SILICANE TALOCHE FIN (particle size 1.0 mm) 	Regulated by particle size
	Cement-based powder requiring addition of about 17% in weight water: <ul style="list-style-type: none"> • MAITE with marble aggregates: <ul style="list-style-type: none"> - MARBRI Granulats (particle size 3.0 – 6.0 mm) 	About 6.0
	Cement based powder requiring addition of about 17% in weight water: <ul style="list-style-type: none"> • MAITE associated with the following paints: <ul style="list-style-type: none"> - Pigmented liquid requiring addition of 20% in weight SILICANE FOND to apply in two layers – silicate binder: SILICANE PEINTURE (application of SILICANE FOND after MAITE and before SILICANE PEINTURE) 	About 1.5

Table 1: Definition of the Construction Product (Kit)

	Components	Thickness (mm)
Finishing coats	Calcic-lime based powder requiring addition of 24% to 26% in weight water: CALCIFIN (particle size 1/0mm, consumption 1.8 to 2.2kg/m ² powder)	Regulated by particle size
	Cement based powder requiring addition of about 20% to 24% in weight water: <ul style="list-style-type: none"> • EHI GM (max particle size 3.0mm) with the two following possible textures: <ul style="list-style-type: none"> - Rough or partly smoothed rough - Scraped 	About 10.0 About 8.0 (after scraping)
	Cement based powder requiring addition of 20% to 24% in weight water: <ul style="list-style-type: none"> • EHI GF (Grains Fins; max particle size 2.0mm) with the two following possible textures: <ul style="list-style-type: none"> - Rough of partly smoothed rough - Scraped 	About 10.0 About 8.0 (after scraping)
Notes: <ul style="list-style-type: none"> • Mechanical fixings to be provided in accordance with the project specific design requirements based on test results. • Where required, 1 additional stainless steel fire fixing per metre squared shall be provided. • Fire fixings are not required two storey single occupancy dwellings. • Fixings must be provided around all window and door openings to ensure adequate and robust edge restraint over the design life. • Secure supports to be provided for soil and rainwater pipe brackets, aerials, lighting, cameras, signage etc. in accordance with the project specific design as appropriate. • Brick slips in accordance with I.S. EN 771-1 and the manufacturer's specification may also be used. 		

Table 1 contd: Definition of the Construction Product (Kit)

Part Three / Design Data

3

3. GENERAL

This matter is dealt with in NSAI Agrément Certificate 09/0342.

Part Four / Technical Investigations

4

4.1 STRENGTH AND STABILITY

This matter is dealt with in Section 4.1 of NSAI Agrément Certificate 09/0342.

4.2 BEHAVIOUR IN RELATION TO FIRE

This matter is dealt with in Section 4.2 of NSAI Agrément Certificate 09/0342.

4.3 PROXIMITY OF HEAT PRODUCING APPLIANCES

This matter is dealt with in Section 4.3 of NSAI Agrément Certificate 09/0342.

4.4 THERMAL INSULATION

This matter is dealt with in Section 4.4 of NSAI Agrément Certificate 09/0342.

4.5 LIMITING THERMAL BRIDGING

This matter is dealt with in Section 4.5 of NSAI Agrément Certificate 09/0342.

4.6 CONDENSATION RISK

This matter is dealt with in Section 4.5 of NSAI Agrément Certificate 09/0342.

4.7 MAINTENANCE

This matter is dealt with in Section 4.6 of NSAI Agrément Certificate 09/0342.

4.8 WEATHERTIGHTNESS

This matter is dealt with in Section 4.7 of NSAI Agrément Certificate 09/0342.

4.9 DURABILITY

4.9.1 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;
- Accelerated aging test data.

The assessment indicates that the system should remain effective for at least 60 years, providing that it is designed, installed and maintained in accordance with this Certificate. Any damage to the surface finish shall be repaired immediately and regular maintenance shall be undertaken as outlined in Section 4.7 of this Certificate. Beadings and nosings shall be as shown in building details. The use of exposed plastic beads/nosings for weathering purposes is not permitted.

4.9.2 Aesthetic Performance

This matter is dealt with in Section 4.8.2 of NSAI Agrément Certificate 09/0342.

4.10 PRACTICABILITY

This matter is dealt with in Section 4.9 of NSAI Agrément Certificate 09/0342.

4.11 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING

This matter is dealt with in Section 4.10 of NSAI Agrément Certificate 09/0342.

4.12 OTHER INVESTIGATIONS

This matter is dealt with in Section 4.11 of NSAI Agrément Certificate 09/0342.