

Pariso Mince External Wall Insulation System

Système d'isolation pour murs extérieurs Wärmedämmung für Außen-wand

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 2010**.



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);
- 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 DoEHLG;

- Provision for fire stopping at external compartment walls and floors.

The system is designed and manufactured by Parex Lanko. Parex Lanko 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 Parex Lanko and NSAI Agrément to install the system.

This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2010.

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 (18 metres) in height in purpose groups 1(a), 1(b), 1(c), 2(a), 2(b), 3, 4(a) and 4 as defined in TGD to Part B of the Building Regulations 1997 to 2010.

Detail Sheet 1 covers the system for use as external insulation on new concrete and masonry residential buildings, up to a maximum of 15 storeys (45 metres) in height in purpose groups 1(a), 1(b), 1(c), 2(a), 2(b), 3, 4(a) and 4 as defined in TGD to Part B of the Building Regulations 1997 to 2010.

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

In an Irish context, Category I 'Impact Resistance' (see Table 2) includes a wall at ground level readily accessible to the public and vulnerable to hard body impacts but not subjected to abnormally rough use. 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 does not include any wall at ground level.

MANUFACTURE, DESIGN AND MARKETING:

The product is manufactured by:

Parex Lanko,
19 Place de la Resistance,
F-92446 Issy les Moulineaux,
Paris,
France.
T: 0049 141 17 45 45
F: 0049 141 17 46 70
W: www.parexlanko.com

The product is designed and marketed 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

In the opinion of NSAI Agrément, the Pariso Mince External Wall Insulation System if used in accordance with this Certificate can meet the requirements of the Building Regulations 1997 to 2010, as indicated in Section 1.2 of this Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2010

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

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 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.

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 2010 (see Part 4 of this Certificate).

	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 160
	Supplementary adhesive: <ul style="list-style-type: none"> • MAITE Monocomposant (cement based powder requiring addition of about 17% in weight water) • COLLE CCP (grey cement-based powder requiring addition of about 25% in weight water) 	-
	Anchors: <ul style="list-style-type: none"> • FXE: Hilti SD-FV8, Fischer TERMOZ 8 N, Spit ISO • FXP-M: Hilti SX-FV, Fischer TERMOZ 8U • FXP-S: Hilti XI-FV 	-
Base coat	MAITE Monocomposant: 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
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"> - AVPC (>160g/m², standard alkaline resistance for system with adhesive fixing) - AVU (>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"> - AVR (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 Monocomposant projeté, MAITE Monocomposant avec granulats and E.H.I. (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 	-
Finishing coats	Ready to use pastes – acrylic binder: <ul style="list-style-type: none"> • REVLANE TALOCHE FIN (particle size 1.0 mm) • REVLANE TALOCHE GROS (particle size 1.6 mm) • REVLANE RIBBE FIN (particle size 1.6 mm) • REVLANE RIBBE GROS (particle size 2.5 mm) • REVLANE ROULE (particle size 0.8 mm) 	Regulated by particle size About 1.5
	Ready to use pastes – acrylic binder with coloured marble aggregates: <ul style="list-style-type: none"> • GRANILANE+ (particle size 1.2 mm) • GRANILANE+ GM (particle size 1.8 mm) 	Regulated by particle size
	Ready to use pastes – acrylosiloxane binder: <ul style="list-style-type: none"> • REVLANE SILOXANE TL (particle size 1.6 mm) • REVLANE SILOXANE RB (particle size 1.0 mm) 	Regulated by particle size
	Ready to use pastes – acrylic binder: <ul style="list-style-type: none"> • REVLANE SOUPLE TALOCHE GF (particle size 1.2 mm) • REVLANE SOUPLE TALOCHE GM (particle size 1.8 mm) 	Regulated by particle size
	Ready to use pastes – silicate binder: <ul style="list-style-type: none"> • SILICANE TALOCHE (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 Monocomposant sprayed • MAITE Monocomposant with marble aggregates: <ul style="list-style-type: none"> - MAITE Monocomposant - MARBRI Granulats (particle size 3.0 – 6.0mm) 	About 2.0 About 6.0

Table 1: Definition of the Construction Product (Kit)

	Components	Thickness (mm)
Finishing coats	Cement based powder requiring addition of about 17% in weight water: <ul style="list-style-type: none"> • MAITE Monocomposant associated with the following paints: <ul style="list-style-type: none"> - Ready to use pigmented liquid to apply in two layers – acrylic binder: PEI MAT - Ready to use pigmented liquid to apply in two layers – acrylosiloxane binder: REVLANE SILOXANE PEINTURE - Pigmented liquid requiring addition of 20% in weight water for the first layer and ready to use for the second layer – acrylic binder: REVLANE SOUPLE PEINTURE - 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 Monocomposant and before SILICANE PEINTURE) 	About 1.5
	Cement based powder requiring addition of about 23% in weight water: <ul style="list-style-type: none"> • EHI (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 26% to 27% 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)

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. Ancillary materials are as follows:

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

2.2 MANUFACTURE, SUPPLY AND INSTALLATION

Parex Lanko is responsible for the manufacture and supply of all components to approved specifications, in accordance with the Parex Lanko approved supplier system. Parex Lanko has appointed Tradecraft Ltd as distribution partner in Ireland, with responsibility for:

- Project specific design in accordance with approved design process;
- Training, monitoring and review of licensed applicators in accordance with approved training and assessment procedures;
- Product supply;
- Technical support;
- Sales and marketing.

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

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.

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 Parex Lanko, prepare a bespoke site package 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 accordance with the project specific site package, including the Certificate holder's installation manual.

Mineral fibre board and lamella 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.

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 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

- 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.
- 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.
- 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.
- At façade openings, e.g. windows and doors, 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 DoEHLG, Detail 2.21, to achieve an R-value of 0.6m²K/W. 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 DoEHLG), 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 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.
- 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. 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.
- 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.
- 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 in the reinforcing mesh.
- 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.
- All rendering should follow best practice guidelines, e.g. BS 8000-10:1995 *Workmanship on building sites – Code of practice for plastering and rendering* and IS EN 13914-1:2005 *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.

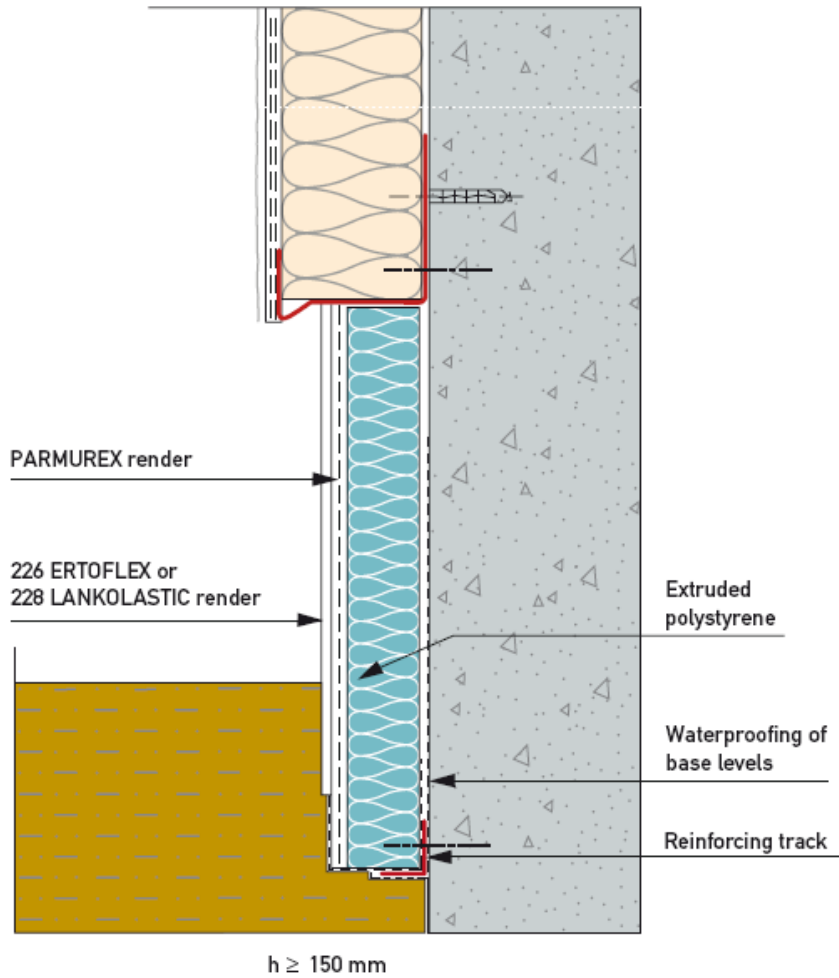


Figure 2: Below DPC Detail

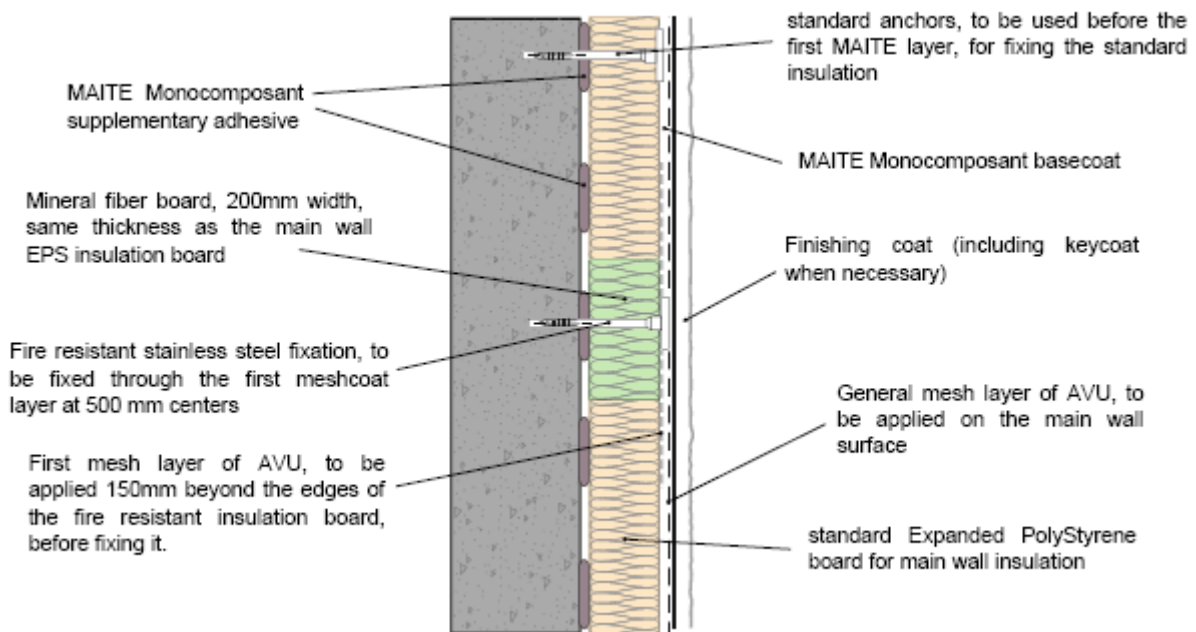


Figure 3: Horizontal/Vertical Fire Barriers

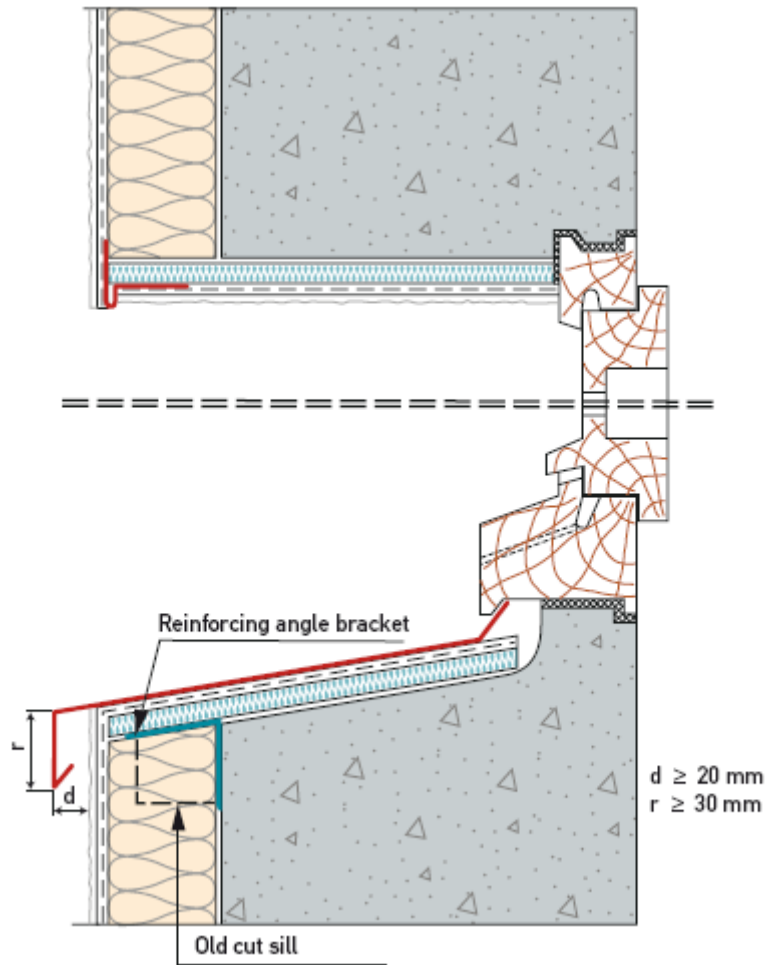


Figure 4: Window Sill & Head Details

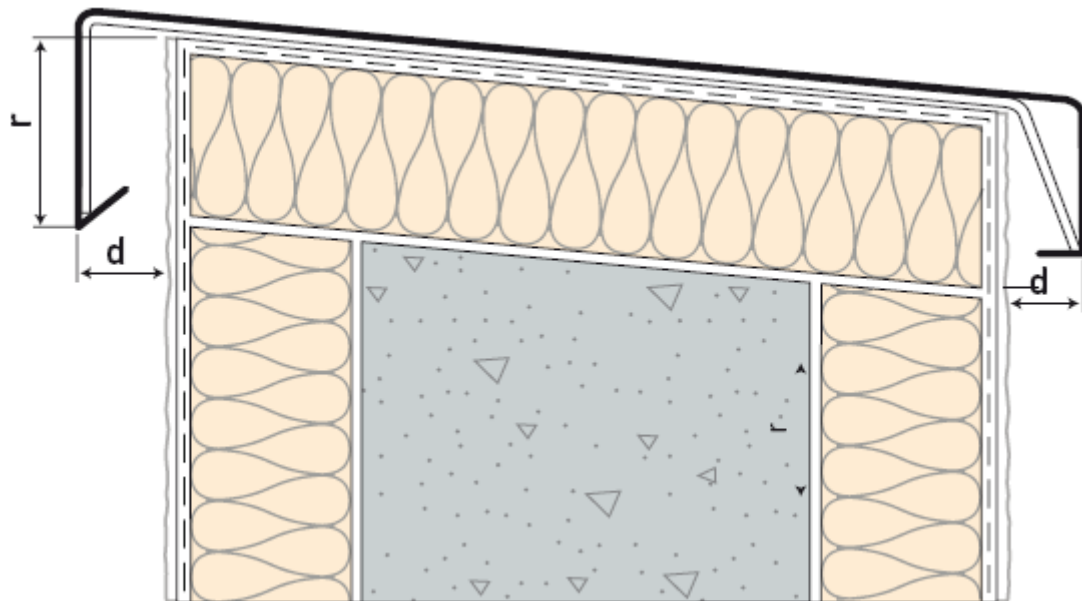


Figure 5: Parapet Detail

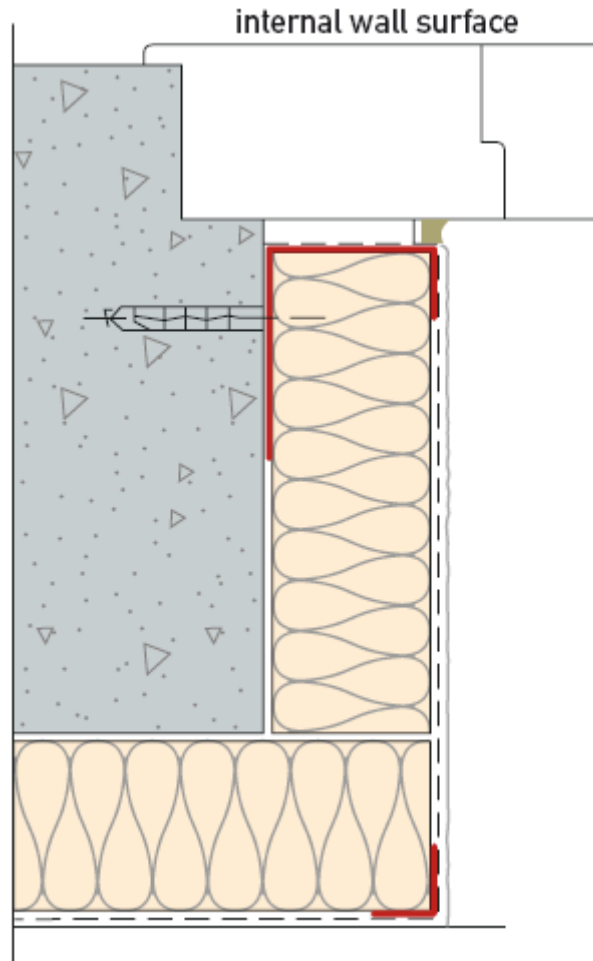


Figure 6: Window Reveal Detail

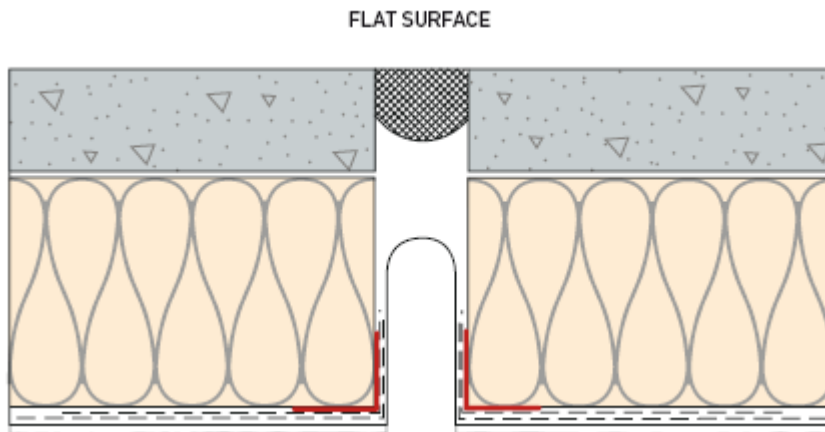


Figure 7: Expansion Joint Detail

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 5250:2002 *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 the Acceptable Construction Details published by the DoEHLG.
- d) Thermal insulation provision to Part L of the Building Regulations 1997 to 2010.
- 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) Design for fire resistance, fire spread and fire stopping, as defined in Section 4.2 and 4.3 of this Certificate.
- j) 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.
- k) Movement joints.
- l) A site specific maintenance programme for inclusion in the home owner's documentation.
- m) 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. 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 requirements of Part L of the Building Regulations 1997 to 2010. 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 DoEHLG.

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.

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.

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

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 2010. 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 *Actions on structures – General actions – Wind actions*. 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 of 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.

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 *Fire classification of construction products and building elements – Classification using data from reaction to fire tests* 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.

Systems that achieve a Class A 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(b), 1(c), 2(a), 2(b), 3, 4(a) and 4(b) as defined in TGD to Part B of the Building Regulations 1997 to 2010.

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 2010.

With regard to fire stopping of cavities and limitations on use of combustible materials, walls must comply with Sections B3.2, B3.3 and B4 of TGD to Part B of the Building Regulations 1997 to 2010.

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 fixings provided at 400mm vertical centres and 400mm horizontal centres respectively, including the second floor level of a three-storey single occupancy house. Firebreaks should be 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. Rockwool, 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 2010. 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 2010 can be achieved using the ClimaTech External Insulation System. The manufacturer's declared thermal conductivity values ($\lambda_{90/90}$) 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 3 shows typical insulation thicknesses to achieve the required 0.27W/m²K U-value.

Rendering system: Base coat with finish coat indicated hereafter	Single standard mesh	Double standard mesh	Reinforced mesh + standard mesh
REVLANE REGULATEUR: - REVLANE TALOCHE FIN - REVLANE TALOCHE GROS - REVLANE RIBBE FIN - REVLANE RIBBE GROS - REVLANE ROULE	Category II		Category I
REVLANE REGULATEUR + REVLANE PATE GRANULATS	Category II	Category I	
- MAITE Monocomposant projeté - MAITE Monocomposant avec granulats	Category II		Category I
- E.H.I. rustique ou écrasé - E.H.I. grate	Category II	Category I	

Table 2: Impact Resistance

Calculation of U-values will be required on individual projects to confirm a U-value of 0.27W/m²K 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.

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 D1 of TGD to Part L of the Building Regulations 1997 to 2010. When **all** bridged junctions within a building comply with the requirements of Table D1 of TGD to Part L, the improved ‘y’ factor of 0.08 can be entered into the DEAP building energy rating (BER) calculation.

Alternatively if **all** junctions can be shown to be equivalent or better than the Acceptable Construction Details published by the DoEHLG, then the improved ‘y’ factor of 0.08 can be used, i.e. R value = 0.6m²K/W for window/door reveals.

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 2010.

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 D1 of TGD to Part L of the Building Regulations 1997 to 2010, 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 5250:2002 and the design modified as appropriate to reduce the risk of surface condensation to acceptable levels.

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.

Recommendations for detailing at windows and doors have been 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 instruction.

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.

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.

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 2010 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.

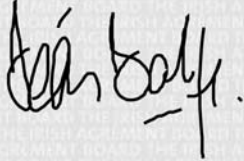
5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is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

NSAI Agrément

This Certificate No. **09/0342** is accordingly granted by the NSAI to **Parex Lanko** 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: April 2011

- **Addition of Detail Sheet for 60 year design life.**



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 15 storeys (45 metres) in height in purpose groups 1(a), 1(b), 1(c), 2(a), 2(b), 3, 4(a) and 4 as defined in TGD to Part B of the Building Regulations 1997 to 2010.

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 - 2010 as indicated in Section 1.2 of Certificate 09/0342.

1.2 BUILDING REGULATIONS 1997 to 2010

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 160
	Supplementary adhesive: <ul style="list-style-type: none"> • MAITE Monocomposant (cement based powder requiring addition of about 17% in weight water) • COLLE CCP (grey cement-based powder requiring addition of about 25% in weight water) 	-
	Anchors: <ul style="list-style-type: none"> • FXE: Hilti SD-FV8, Fischer TERMOZ 8 N, Spit ISO • FXP-M: Hilti SX-FV, Fischer TERMOZ 8U • FXP-S: Hilti XI-FV 	-
Base coat	MAITE Monocomposant: 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"> - AVPC (>160g/m², standard alkaline resistance for system with adhesive fixing) - AVU (>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"> - AVR (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 Monocomposant projeté, MAITE Monocomposant avec granulats and E.H.I. (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 	-
Finishing coats	Ready to use pastes – acrylic binder: <ul style="list-style-type: none"> • REVLANE TALOCHE FIN (particle size 1.0 mm) • REVLANE TALOCHE GROS (particle size 1.6 mm) • REVLANE RIBBE FIN (particle size 1.6 mm) • REVLANE RIBBE GROS (particle size 2.5 mm) • REVLANE ROULE (particle size 0.8 mm) 	Regulated by particle size About 1.5
	Ready to use pastes – acrylic binder with coloured marble aggregates: <ul style="list-style-type: none"> • GRANILANE+ (particle size 1.2 mm) • GRANILANE+ GM (particle size 1.8 mm) 	Regulated by particle size
	Ready to use pastes – acrylosiloxane binder: <ul style="list-style-type: none"> • REVLANE SILOXANE TL (particle size 1.6 mm) • REVLANE SILOXANE RB (particle size 1.0 mm) 	Regulated by particle size
	Ready to use pastes – acrylic binder: <ul style="list-style-type: none"> • REVLANE SOUPLE TALOCHE GF (particle size 1.2 mm) • REVLANE SOUPLE TALOCHE GM (particle size 1.8 mm) 	Regulated by particle size
	Ready to use pastes – silicate binder: <ul style="list-style-type: none"> • SILICANE TALOCHE (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 Monocomposant sprayed • MAITE Monocomposant with marble aggregates: <ul style="list-style-type: none"> - MAITE Monocomposant - MARBRI Granulats (particle size 3.0 – 6.0mm) 	About 2.0 About 6.0

Table 1: Definition of the Construction Product (Kit)

	Components	Thickness (mm)
Finishing coats	Cement based powder requiring addition of about 17% in weight water: <ul style="list-style-type: none"> • MAITE Monocomposant associated with the following paints: <ul style="list-style-type: none"> - Ready to use pigmented liquid to apply in two layers – acrylic binder: PEI MAT - Ready to use pigmented liquid to apply in two layers – acrylosiloxane binder: REVLANE SILOXANE PEINTURE - Pigmented liquid requiring addition of 20% in weight water for the first layer and ready to use for the second layer – acrylic binder: REVLANE SOUPLE PEINTURE - 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 Monocomposant and before SILICANE PEINTURE) 	About 1.5
	Cement based powder requiring addition of about 23% in weight water: <ul style="list-style-type: none"> • EHI (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 26% to 27% 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)

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

3. GENERAL

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

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.