IRISH AGRÉMENT BOARD
CERTIFICATE No. 05/0219
Parex Lanko, 19 Place de la Resistance,
92446 Issy les Moulineaux, Cedex, France.
T: +33 1 41174545
F: +33 1 41174678
W: www.parexlanko.com

Parex Monorex
Monocouche Colour Through Render

Enduit de Façade
Oberflachenbeschichtung

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

NSAI Agrément Certificates establish proof that the certified products are **'proper materials'** suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2017**.

PRODUCT DESCRIPTION:
This Certificate relates to the Parex Monorex Moncouche Colour Through Render developed by Parex Lanko in France as a single coat, breathable, waterproof and decorative coloured render. It is a cementitious and lime render with a designed mix formulation and containing special additives principally for workability, water retention, adhesion and waterproofing. It is supplied as a ready mixed dry material, to which a controlled amount of water is added during its application using a rendering and plastering machine. It is applied as a single coat render without the need for a scud coat for most applications and is available in a range of colours. Overall thickness generally varies from a minimum of 15mm to a maximum finished thickness of 20mm.

The Monorex Rendering System is certified by CSTB, France, Certification No. CSTBat-05M135. The CSTB carries out surveillance of the Parex Lanko plants as part of their certification scheme.

This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2017.

USE:
The Parex Monorex Monocouche Colour Through Render is designed principally for weatherproofing external vertical concrete block or brick masonry walls, but can also be used as an internal decorative render. Conditions for use on fair-faced concrete and high suction surfaces are detailed in Section 2.4.2 of this Certificate.

MANUFACTURE AND MARKETING:
The product is manufactured by:

Parex Lanko,
Usine de Malesherbes,
Zi Avenue du General Patton,
45330 Malesherbes,
France.

The product is marketed in Ireland by:

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

1.1 ASSESSMENT

In the opinion of NSAI Agrément, the Parex Monorex Monocouche Colour Through Render, if used in accordance with this Certificate, can meet the requirements of the Building Regulations 1997 - 2017 as indicated in Section 1.2 of this Certificate.

1.2 BUILDING REGULATIONS 1997 to 2017

REQUIREMENT:

Part D – Materials and Workmanship

D3 – The Parex Monorex Monocouche Colour Through Render, as certified in this NSAI Agrément Certificate, is comprised of proper materials fit for their intended use (see Part 4 of this Certificate).

D1 – The Parex Monorex Monocouche Colour Through Render, as certified in this Certificate, meets the requirements for workmanship.

Part A – Structure

A1 – Loading

The Parex Monorex Monocouche Colour Through Render, as certified in this Certificate, has adequate strength and stability (see Parts 3 and 4 of this Certificate).

A2 – Ground Movement

The Parex Monorex Monocouche Colour Through Render, as certified in this Certificate, can be readily used on masonry walls of properly designed buildings to meet the requirements in respect of ground movement.

Part B – Fire Safety

B2 – Internal Fire Spread (Linings)
B3 – Internal Fire Spread (Structure)
B4 – External Fire Spread
Part B Vol 2 – Fire Safety
B7 – Internal Fire Spread (Linings)
B8 – Internal Fire Spread (Structure)
B9 – External Fire Spread

The Parex Monorex Monocouche Colour Through Render, as certified in this Certificate, is non-combustible and has a Class 0 surface spread of flame rating. It is readily amenable to fire safety design across the range of fire resistance requirements for buildings of all purpose groups and can meet the requirements of this Regulation.

Part C – Site Preparation and Resistance to Moisture

C3 – Dangerous Substances
C4 – Resistance to Weather and Ground Moisture

The Certificate holder has taken the responsibility of classifying and labelling the system components under CLP Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures. Users must refer to the relevant Safety Data Sheet(s).

The Parex Monorex Monocouche Colour Through Render, as certified in this Certificate, does not compromise the fitting of adequate damp proof courses, appropriate Radon and dangerous substance protection membranes and gas handling systems to meet the requirements of this Regulation. The Parex Monorex Monocouche Colour Through Render, when properly applied on adequately designed buildings, will provide adequate water resistance in all exposures, as specified in Part 4 of this Certificate.

Part E – Sound

E1 – Airborne Sound (Walls)

The Parex Monorex Monocouche Colour Through Render will complement the airborne sound resistance of concrete or masonry walls and can be readily included in the design and specification of party walls to meet the airborne sound requirements of this Regulation.

Part L – Conservation of Fuel and Energy

L1 – Conservation of Fuel and Energy

The Parex Monorex Monocouche Colour Through Render will contribute to the thermal resistance of concrete or masonry walls and can be readily included in the analysis of the thermal performance of external walls for the determination of the elemental or overall U-values to meet the requirements of this Regulation.

2.1 PRODUCT DESCRIPTION

The Parex Monorex Monocouche Colour Through Render is a single-coat breathable, waterproof and decorative colour render. It is a cementitious and lime render with a designed mix formulation and containing special additives principally for workability, water retention, adhesion and waterproofing. It is supplied as a ready-mixed dry material, to which a controlled amount of water is added during its application using a rendering and plastering machine. It is applied as a single coat render without the need for a scud coat for most applications and is available in a range of colours. Overall thickness varies from a minimum of 15mm to a maximum finished thickness of 20mm. Parex Monorex renders are available in a range of surface finishes, textures and colours, details of which are available from the manufacturer.

The Parex Monorex Monocouche Colour Through Render is designed principally for weatherproofing external vertical concrete block or brick masonry walls, but can also be used as an internal decorative render. Conditions for use on fair-faced concrete and high suction surfaces are detailed in Section 2.4.2 of this Certificate.

2.1.1 Ancillary Items

(a) Materials required with the renders include:

Rigid PVC or stainless steel drip, stop movement and corner beads. Alkail resistant fibreglass mesh. Microgobetis 2000 for use on low suction substrates. Latex 2000 for scudding brickwork or aerated concrete blocks.

(b) Special equipment and tools required include:

Rendering and plastering machine (Putzmeister, Lancy, PFT), spray gun, plasterers knife, trowel, steel trowel, long and short-toothed scrapers, ashlar cutter with fixed blades, plasterer's straight edge, thickness gauge, soft bristle brushes.

2.2 MANUFACTURE

Parex Monorex Renders are manufactured to specially formulated batched mixtures of Portland cement, calcium hydroxide (lime), siliceous and calcareous sands, mineral pigments and performance enhancing admixtures. Admixtures include rheological and waterproofing agents.

Mixing of the components is performed in a two-stage operation. After initial mixing of the binder, additives and pigment, the remaining materials are then added and mixed in a separate chamber before being sent for packaging in 30kg bags.

All individual components of each specific batch mixture are tested for conformance with the particular specifications before use. Aggregates are supplied fully graded and to tight specification tolerances. The manufacturer operates and maintains a document quality system to ensure that the product conforms to the specified requirements.

List of purchased goods include:

- Portland cement
- Sand (crushed and whole mixture)
- Calcium hydroxide (lime)
- Various additives – waterproof agents, air entraining agents, plasticisers, performance modifiers and pigments.

2.2.1 Product Quality Control

The quality control system includes raw material supply, handling, storage, packaging and delivery. Product is bagged in moisture resistant paper bags with printed instructions on storage requirements. The manufacturing facility houses a test laboratory where quality control testing is carried out on the raw materials and finished product. In addition, Parex Lanko operate a main R&D laboratory, which perform mix formulations and additional product testing. These laboratories are subject to third party surveillance from the Centre Scientifique et Technique du Bâtiment (CSTB). Both the manufacturing plant and the R&D Laboratory have received ISO 9001 certification.

2.3 DELIVERY, STORAGE AND MARKING

2.3.1 Marking and product identification details

Parex Monorex Renders are bagged into sealed moisture resistant paper bags at the end of the production run and stored on pallets. Each bag has printed on it the manufacturer's name, NSAI Agrément logo with the number of this Certificate, date of manufacture, manufacturing address, and a production trace number which identifies the particular product and weight of contents. Bags of Parex Monorex Render have a shelf life of one year from date of manufacture.

2.3.2 Delivery

Parex Monorex Renders are delivered on pallets in 30kg sealed moisture resistant paper bags for additional protection. Each cling film wrapped pallet contains 40 bags and weighs approximately 1200kg.

2.3.3 Protection of materials

Due to the waterproofing additive in the product mix, Parex Monorex Renders are less susceptible

to moisture absorption than conventional renders when stored in normal dry conditions. Bags must be stored off the ground, under cover for protection from the elements and should be used in rotation to ensure the one year shelf life is not exceeded.

2.4 INSTALLATION

2.4.1 Installation Control

The Parex Monorex Monocouche Colour Through Renders must be installed in strict accordance with the manufacturer's instructions and the relevant recommendations of IS EN 13914-1:2016 *Design, preparation and application of external rendering and internal plastering – External rendering*, and applied only by fully trained applicators. The renders should be applied to properly designed walls and over substrates conforming to the requirements set out by the manufacturer. The manufacturer provides advice, training and support for applicators as well as full technical backup for architects and builders regarding all details and specifications to be applied. The manufacturer also offers a 10 year guarantee on Parex Monorex Monocouche Colour Through Renders that have been applied in accordance with their application methods.

2.4.2 Site Survey and Preliminary Work

Advice concerning site survey and preliminary work for the application of the Parex Monorex Render is available to the designer and rendering contractor from the Certificate holder.

A pre-application survey of the property must be carried out to determine its suitability to receive the product and whether repairs to the building structure are necessary before application. A specification must also be prepared by the designer for each elevation indicating:

- Preliminary treatment of the background;
- The position of beads;
- Detailing around windows, doors, eaves;
- DPC level;
- Exact position of movement joints;
- Areas where flexible sealants must be used;
- Any alterations to external plumbing, fixtures and fittings.

2.4.3 Preparation of Substrate

Parex Monorex Render should only be applied to mature stable surfaces. A minimum of one month should be allowed following completion of the wall construction before starting installation. In slow drying situations, a longer interval should be allowed. All substrates must be clean, sound and dust free. As with traditional renders, Parex Monorex Renders rely on a combination of suction and surface texture to achieve bond. The recommendations set out in IS EN 13914-1:2016 should be followed. It is essential that all steps are taken to ensure that a satisfactory bond is achieved between the render and the substrate.

(i) Concrete block and clay brick surfaces

All blockwork and brickwork should be designed and constructed in accordance with current standards and good building practice.

In particular, the requirements of IS EN 1996-1-1:205 + A1:2012 *Eurocode 6 – Design of masonry structures – Part 1-1: General rules for reinforced and unreinforced masonry structures (including Irish National Annex)* must be met.

When applying Parex Monorex Render to concrete block masonry, no scud (splatter dash) is required, unless the masonry has too high or too low a suction. The applicator must always check for this condition. High suction surfaces including clay brickwork will require the application of a scud coat to control the suction. This scud coat is achieved by the application of ready-to-use Microgobetis 2000. The Monorex render is then applied after the scud coat has dried (1h to 24h depending on atmospheric conditions).

(ii) Concrete surfaces

Use of Parex Monorex Renders on concrete or fair-faced construction is limited to two storeys above ground level.

For concrete surfaces, all dirt, dust, loose matter, efflorescence, formwork oil and organic growth must be removed by brushing and washing as required with suitable solutions before render is applied. Where Parex Monorex Render is applied at wall openings incorporating concrete lintels, Alkali resistant glass fibre mesh shall be incorporated into render to provide additional strength. The manufacturer's guidance should be sought in all such instances.

For each project involving the use of Parex Monorex render on concrete or fair-faced concrete, a method statement must be prepared. This method statement should address issues including choice of shutter mould release agent, removal of laitance or dust on the concrete surface and the application of a key coat with a bonding agent. Where Parex Monorex is to be applied to concrete or fair-faced concrete, the surfaces shall be prepared by one of the following methods:

- Preliminary projection of a Monorex grain made by adding 0.5 litres of Latex 2000 emulsion to the mixing water of a 30kg bag of Monorex; or
- Application of a rough coat using ready-to-use Microgobetis 2000. The Monorex render is then applied after the rough coat has dried (1h to 24h depending on atmospheric conditions).

2.4.4 Application Details

Parex Monorex Renders must only be applied on site by trained applicators.

Parex Monorex Renders are mixed on site in a rendering and plastering machine with a controlled amount of clean water (6.8 – 7.4 litres per 30kg bag of render) and applied to the substrate using the machines pump pressure combined with an independent source of air pressure (10.14 bar) supplied to the application nozzle. Parex Monorex Renders can normally be applied in a single coat, however for poor quality brickwork or uneven surfaces, a levelling coat may be required to ensure a final minimum render thickness of 15mm is achieved.

Parex Monorex Renders should not be applied onto saturated surfaces and should also be protected from rainwater during application and for at least 5 to 10 hours after application. Finished renders should be protected from weather and ongoing site work until fully cured. As with all cement based products, application should not be carried out in freezing or thawing conditions, in temperatures below 5^{o}C for light colours (8^{o}C) for strong colours), or where there is a risk of frost damage to freshly applied render. For temperatures above 30^{o}C special precautions should be taken and the manufacturer's advice should be sought. Once applied, Parex Monorex should be allowed to cure for 3-16 hours (depending on substrate and drying conditions) before finishing.

All finished thickness of applied render depends on substrate condition and design finish required. For a scraped finish, Monorex renders shall be applied to a thickness of 18mm to 20mm to allow for the removal of 2mm to 3mm during scraping. This provides a minimum finished protecting render coat of 15mm. It is important that a consistent minimum thickness is achieved and that the maximum thickness of 20mm is not exceeded. Use of an appropriate render thickness gauge is recommended throughout the application of Parex Monorex Monocouche Colour Through Render.

During application, doors and windows should be protected from overspray with polythene sheeting as required. All masking must be removed immediately after finishing. All evidence of render inadvertently applied to glass of aluminium must be removed immediately to prevent etching of the surface.

Renders must satisfy the weatherproof and decorative requirements of the installation as laid down in IS EN 13914-1:2016.

2.4.5 Design Details

(a) Parapets

Parex Monorex Renders must not be applied onto flat or sloping surfaces. An adequate flashing must always be provided to prevent water penetrating behind the render.

(b) Window and door reveals

Alkali resistant glass fibre mesh reinforcement must be included in rendering along the lintel. External arrisses are formed using bevelled timber battens or by using rigid powder coated or stainless steel beads to meet the requirements of IS EN 13914-1:2016. In the interest of durability, stainless steel beading should be used. Beads must not be used at corners where ashlar features are being formed.

(c) Ground level detail

In the interest of aesthetics, a bellcast or stop bead should be provided 150mm above ground level or above the DPC where the DPC is at a higher level. Render is dressed down to the stop bead. The bellcast is then rendered to complete the façade.

(d) Dissimilar backgrounds

Where different backgrounds meet, in areas of weak substrate or areas subject to high stress (corners of doors, windows), joints should be covered by alkali resistant fibreglass mesh prior to applying the Parex Monorex Render. The mesh should be bedded in a thin coat of Parex Monorex Render as a preliminary process to the final coat.

(e) Expansion joints

Where expansion or movement joints occur they should be brought through to the surface and not covered by the Parex Monorex Render. The manufacturer can advise on movement beads which can be used at expansion joint locations. In the interest of durability, stainless steel expansion joint beading should be used.

Part Three / Design Data 3

3.1 GENERAL
Parex Monorex Monocouche Colour Through Renders will enhance the weather resistance of concrete and masonry walls and provide a decorative finish. The renders are satisfactory for external or internal application to properly designed and constructed walls.

3.2 STRENGTH AND STABILITY
Parex Monorex Monocouche Colour Through Renders comply with the relevant sections of IS EN 13914-1:2016. This standard gives recommendations for building details, design and material specifications. Parex Monorex Renders should not be applied in areas where there is evidence of corrosion of steel reinforcement or other metal products in the background. Monorex renders are not suitable for application over gypsum plaster or previously decorated surfaces.

3.3 STRUCTURAL FIRE SAFETY
Parex Monorex Renders are non-combustible and have a Class 0 spread of flame rating in accordance with Table A6 of TGD to Part B of the Building Regulations 1997 to 2017. The renders, being non-combustible, do not contribute to either fire propagation or surface flame spread. The renders are non-toxic in fire conditions.

3.4 WEATHER RESISTANCE
Parex Monorex Renders, when used on properly designed buildings in accordance with this Certificate, the manufacturer's instructions and when applied as per the codes of practice of IS EN 13914-1:2016 regarding thickness and exposure, will have adequate resistance to wind and wind-driven rain in all exposures (normal and severe) in Ireland. Appendix C of BS 8104:1992 *Code of practice for assessing exposure of walls to wind driven rain* together with information provided by the Irish Meteorological Office should be consulted. It is important that application and building design/construction details take full account of likely weather exposure conditions.

Due to the waterproofing additive in the product mix, Parex Monorex Render prevents water reaching the substrate during rain.

Part Four / Technical Investigations 4

4.1 BEHAVIOUR IN RELATION TO FIRE
In accordance with Table A6 of TGD to Part B of the Building Regulations 1997 to 2017, Parex Monorex Renders have a Class 0 spread of flame classification and are non-combustible. Parex Monorex Renders are non-toxic in normal use and in fire conditions.

4.2 THERMAL CONDUCTIVITY
On the basis of material composition and density, Parex Monorex Renders have a λ value (thermal conductivity) of 0.57 W/mK.

4.3 WATER VAPOUR RESISTANCE
It can be assumed that Parex Monorex Renders, at a thickness of 20mm, have a water vapour permeance in the order of 0.54 MNs/g. The renders are not vapour barriers and are unlikely to lead to interstitial condensation.

4.4 DURABILITY
External render systems can last in excess of 40 years in accordance with BS 7543:2015 *Guide to durability of buildings and building elements, products and components* subject to normal use, regular inspection and maintenance. It is important to note that the durability of the render system is entirely dependent on the correct installation of the product in accordance with this Certificate, the manufacturer's instructions, IS EN 13914-1:2016 and ongoing care and maintenance as described in Section 4.5 of this Certificate. Critical details include rendering at window sills, raised features, junctions with eaves and verges, and the use of suitably designed overhangs and flashings. Reference should be made to IS EN 13914-1:2016 for general advice on design, in particular on the use of angle, stop and movement joint beads.

The history of the colour retention of the Parex Monorex Monocouche Colour Through Renders is good. The product is less susceptible to crazing and cracking than traditional renders. The product may become discoloured with time depending on the local environment. Cleaning with water and a stiff brush can normally restore appearance. The product may suffer from algae or lichen growth in a similar manner to traditional finishes; proprietary treatments are available to treat these.

4.5 MAINTENANCE AND REPAIR

While Parex Monorex Monocouche Colour Through Render can be assumed to be low maintenance, it is recommended that periodic checks are carried out to ensure that architectural details for shedding water clear of the building are still functioning properly.

Repairs may be necessary occasionally and an assessment of the cause of damage should be undertaken before repairs are carried out. When a repair is required, the damaged section of render should be cut out and the substrate cleaned and prepared as per the manufacturer's instructions. For small areas of repair the appropriate colour matched Monorex render may be applied by hand and allowed to dry as per the manufacturer's instruction. Parex Crylane coloured dye should then be applied over the entire section of wall to provide a uniform colour tone. Parex Crylane should only be applied by a trained applicator. The advice of the Certificate holder should be sought for particular installations, and repairs shall be carried out in accordance with IS EN 13914-1:2016.

4.6 TESTS AND ASSESSMENT WERE CARRIED OUT TO DETERMINE THE FOLLOWING:

- Reaction to fire*
- Capillary water absorption*
- Compressive strength*
- Coefficient of water vapour permeability*
- Adhesion after weathering cycles*
- Water permeability after weathering cycles*
- Dangerous substances*

4.7 OTHER INVESTIGATIONS

(i) Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on mechanical strength/stability and durability were assessed.

(ii) The manufacturing process was examined including methods adopted for Quality Control (see Table 1 for typical Parex Monorex Quality Control Testing Schedule). The Research & Development Laboratory of Parex Lanko was also visited where testing of the product was witnessed. NSAI Agrément also carried out site visits to see the application of the Parex Monorex Render. Existing buildings rendered with Parex Monorex Monocouche Colour Through Render were also visited as part of the durability assessment.

(iii) Site visits were conducted to assess the practicability of installation and the history of performance in use of the product.

TEST	LIMITS	FREQUENCY
Testing at Plant QC Lab		
Colour check	Match control	1/ sample
Sieve analysis on Sand - Retained on 4mm sieve - Passing 0.315mm sieve	 0% 44-56%	1/ 2 samples
Aspect ratio	0	1/ sample
Plastic density	1340-1540 kg/m^3	1/ sample
Water retention	93-99%	1/ sample
Consistency	35-65 mm	1/ sample
Testing at Central R&D Lab (28 day tests)		
Shrinkage	(-0.2)-(-1.2) mm/m	1/ month
Hardened dry density	1150-1350 kg/m^3	2/ month
Flexural strength	1-2 MPa	2/ month
E modulus	3000-5000 MPa	2/ month
Capillarity	<1.5	1/ month

Table 1: Typical QC Schedule

4.8 CE MARKING

The manufacturer has taken responsibility of CE marking the Parex Monorex Render in accordance with harmonised European Standard EN 998-1:2010 *Specification for mortar for masonry – Part 1: Rendering and plastering mortar*. An asterisk (*) appearing in this Certificate indicates that data shown is an essential characteristic of the product and declared in the manufacturer's Declaration of Performance (DoP). Reference should be made to the latest version of the manufacturer's DoP for current information on any essential characteristics declared by the manufacturer.

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

(a) the specification of the product is unchanged.

(b) the Building Regulations 1997 to 2017 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.

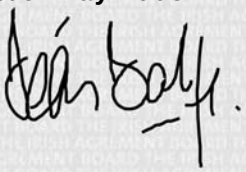
5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is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

NSAI Agrément

This Certificate No. **05/0219** is accordingly granted by the NSAI to **Parex Lanko** on behalf of NSAI Agrément.

Date of Issue: **May 2005**

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: Jan 2015, January 2018

- References to Building Regulations updated.
- References to Building Regulations and standards updated, product specifications updated to reflect manufacturer's DoP.