

K Rend External Renders

Enduit de Surface Oberflächenbeschichtung

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 2017**.



PRODUCT DESCRIPTION:

This Certificate relates to K Rend External Renders, a range of polymer-modified, self-coloured renders developed by Kilwaughter Minerals Ltd.

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

This Certificate is generally a confirmation of BBA Certificate No. 97/3428 issued by the British Board of Agrément, PO Box 195, Bucknalls Lane, Garston, Watford WD25 9BA.

USE:

K Rend External Renders are designed for weatherproofing external vertical concrete block or brick masonry walls but the cementitious renders 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 & MARKETING:

The products are manufactured and marketed by:

Kilwaughter Minerals Ltd.,
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1.1 ASSESSMENT

In the opinion of NSAI Agrément, K Rend External Renders if used in accordance with this Certificate can meet the requirements of the Building Regulations 1997 to 2017, as indicated in Section 1.2 of this Irish Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2017

REQUIREMENTS:

Part D – Materials and Workmanship

D3 – K Rend External Renders, as certified in this Certificate, are comprised of ‘proper materials’ fit for their intended use (see Part 4 of this Certificate).

D1 – K Rend External Renders, as certified in this Certificate, meet the requirements of the building regulations for workmanship.

Part A - Structure

A1 – Loading

K Rend External Renders, as certified in this Certificate, have adequate strength and stability (see Parts 3 and 4 of this Certificate).

A2 – Ground Movement

K Rend External Renders, 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 cementitious K Rend External Renders, as certified in this Certificate, are non-combustible and have Class 0 surface spread of flame rating. They are readily amenable to fire safety design across the range of fire resistance requirements for buildings of all purpose groups and can meet the requirements for fire safety.

The silicone K Rend External Renders are not non-combustible and have Class B-s2, d0 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*. Renders that achieve a 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 2017.

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 the 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).

K Rend External Renders do not compromise the fitting of adequate damp-proof courses, appropriate Radon and dangerous substances protection membranes and gas handling systems to meet the requirements. K Rend External Renders, when properly applied on adequately designed buildings, will provide adequate weather resistance in all exposures, as specified in Part 4 of this Certificate.

Part E – Sound

E1 – Airborne Sound (Walls)

K Rend External Renders 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.

Part L – Conservation of Fuel and Energy

L1 – Conservation of Fuel and Energy

K Rend External Renders 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 this requirement.

2.1 PRODUCT DESCRIPTION

Most K Rend External Renders are cementitious based and pigment coloured. Except for the addition of mixing water, each render is supplied with all of the ingredients fully mixed in plastic lined 25kg bags. K Rend Silicone TC15 is a synthetic resin topcoat supplied in 25kg tubs. K Rend External Renders are available in a range of types that are designed for different situations. They are all polymer modified and they also contain other additives as required – for example, some contain silicone as a water repellent, and others are designed for machine spray application.

The recommended rendering thickness (finished thickness after texturing) for the cementitious renders is 16mm for one coat application. For a two coat application, the recommended rendering thickness is 8-10mm for the base coat and 10-12mm for the finish coat.

The product range consists of a range of K Rend base coats, which are applied as backing coats for K Rend finishes, and a range of self-coloured finishes.

The base coat range is as follows:

- **K Rend UF Base:** A general grade backing coat that may be hand or spray applied. Thickness is 8-10mm and coverage is 1.8kg per mm thick (14-18kg/m² approximately). It may also be used as a suitable base for thin coat acrylic type finishes and can also be used as a one-coat render at 16mm thick to be floated up for subsequent painting.
- **K Rend HP12 Base:** A cement-based, highly polymer modified base coat. It also makes a suitable scud coat and can be used for over difficult substrates where the incorporation of alkali resistant mesh reinforcement is advised. Thickness is 4-6mm and coverage is 1.8kg per mm thick (7-10kg/m² approximately).
- **K Rend HPX Base:** A cement-based, highly polymer modified and fibre reinforced base coat designed for use over difficult substrates. It has good adhesion properties and combats high suction backgrounds. In some cases, the incorporation of alkali resistant mesh reinforcement is advised. Thickness is 3-6mm and coverage is 1.5kg per mm thick (5-9kg/m² approximately).

The self-coloured finish range is as follows:

- **K Rend Silicone WP/FT:** A hand applied, silicone enhanced, cement based and polymer

modified, self-coloured render, which, is applied as per the manufacturer's instructions and this Certificate, results in a decorative, low maintenance, textured finish with water repellent properties. It is available in two textures, a standard texture (referred to as Silicone WP) and a fine texture (referred to as Silicone FT), and in a wide range of colours. If used over a K Rend Basecoat, thickness is 10-12mm and coverage is 2kg per mm thick (20-24kg/m² approximately). If used as a one coat finish over blockwork (possibly in two passes), thickness is 16-18mm and coverage is 2kg per mm thick (32-36kg/m² approximately). Following application the render is textured in a separate application to give the desired finish.

- **K Rend Silicone Spray E-Grade:** A machine applied, silicone enhanced, cement based and polymer modified, self-coloured render, which, when applied as per the manufacturer's instructions and this Certificate, results in a decorative, low maintenance, textured finish with water repellent properties. It is available in a wide range of colours and is used as a one coat finish over blockwork. Thickness is 16-22mm and coverage is 1.6kg per mm thick (26-32kg/m² approximately). Following application the render is texture in a separate application to give the desired finish.
- **K Rend K1 Spray:** A machine or hand applied, cement based and polymer modified, self-coloured render, which, when applied as per the manufacturer's instructions and this Certificate, results in a decorative, low maintenance, textured finish. It is available in a wide range of colours and is used as a one coat finish over blockwork. Thickness is 16-18mm and coverage is 1.6kg per mm thick (26-29kg/m² approximately). The scraped finish will require application of 2mm more render than the specified thickness to allow for material lost in the scraping process. Following application, the render is textured in a separate application to give the desired finish.

K Rend K1 Spray is suitable for use on areas of the wall above the DPC level. It is not suitable for use on previously decorated surfaces. Additional advice for project specifications where applications are onto high or low absorption medium density concrete blockwork should be sought from the Certificate holder.

K Rend Silicone K1 is a similar product to K Rend K1 Spray but uses a silicone water repellent.

- **K Rend Silicone Dash:** A silicone enhanced, cement based and polymer modified, self-coloured dash receiver. It is normally applied for any dry dash or roughcast finish. It is available in a wide range of colours and is normally applied onto K Rend Basecoats. Thickness is 6-10mm and coverage is 1.5kg per mm thick (10-15kg/m² approximately).
- **K Rend Silicone Roughcast:** A silicone enhanced, cement based and polymer modified, self-coloured render coating. It is available in a wide range of colours and is normally applied to K Rend Silicone Dash. Coverage is 12-15kg/m² approximately.
- **K Rend Silicone TC15:** K Rend Silicone TC15 is a silicone enhanced, synthetic resin topcoat supplied in 25kg tubs. Used with K Rend UF Base and K Rend alkali resistant mesh (depending on the substrate). The render is a thin-coat render which is float-applied at 2.5kg/m² to 1.5mm thickness, to give an overall thickness (including the K Rend UF Base coat at a thickness of 15mm) of approximately 16-17mm. The product must be stirred before use.

2.1.1 Ancillary Items

Materials required may include:

- UPVC K Bead, feather-edge angle, stop, expansion, drip, bell cast and frameseal beads
- Stainless steel drip, stop, movement and corner beads
- K Rend alkali resistant mesh

Special equipment and tools required may include:

- Plasterers knife
- Trowel, steel trowel
- Large and small scrapers
- Ashlar cutter
- Plasterer's straight edge
- Thickness gauge
- Soft bristle brush
- Measuring bucket
- Spraying machine

2.2 MANUFACTURE

K Rend External Renders are manufactured on a computer-controlled batch mixing plant incorporating individual weigh-bins, transfer screw conveyors and mixer. The computer is pre-programmed with the formulations, mixing sequences and mixing times.

2.2.1 Quality Control

Quality control checks are carried out on the incoming raw materials, during production and on

the finished product. The management systems of Kilwaughter Minerals Ltd have been assessed and registered as meeting the requirements of ISO 9001 by BSI Management Systems (Certificate No. FM 85394).

2.3 DELIVERY, STORAGE AND MARKING

The products are packed in 3-ply poly-lined paper sacks with weldable external valves, with the exception of K Rend Silicone TC15 which is packed in tubs. Each sack/bucket is marked bearing details of product name, colour, job number, date of production and bags per tonne. The bags are then placed on pallets which bear the manufacturer's name and the NSAI Agrément logo with the number of this Certificate. The height of bags stacked on a pallet of K Rend UF Base must not exceed 1m and no more than four pallets should be stacked. K Rend External Renders should be stored in dry conditions, off the ground, in a proper store area and used in rotation. Renders should be used in the order in which they are received and each delivery kept separate to avoid confusion. When stored unopened, the products have a shelf life of 12 months from the date of manufacture.

2.4 INSTALLATION

2.4.1 Installation Control

Application of K Rend External Renders is to be carried out by competent, skilled renderers or contractors experienced with this type of system, in accordance with the Certificate holder's instructions and the relevant recommendations of IS EN 13914-1:2016 *Design, preparation and application of external rendering and internal plastering – External rendering*.

2.4.2 Site Survey and Preliminary Work

Advice concerning site survey and preliminary work for the application of K Rend K1 Spray 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

K Rend External Renders should only be applied to mature stable surfaces. A minimum of one month should be allowed following completion of

the wall construction before application of the render commences. In slow drying situations, a longer interval should be allowed. All substrates must be clean, sound and dust free. As with traditional renders, K Rend External 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. K Rend have a range of preparatory key coats available to improve render adhesion to the substrate.

Prior to application of K Rend K1 Spray, the substrate should be checked for suction by spraying the surface with clean water. If water is not absorbed, it will be impossible to obtain a good bond and the application should not commence until the surface has dried out. If however the water is readily absorbed by the substrate, the background may be too absorbent and some wetting will be necessary to prevent the water required for the hydration and workability of the product from being extracted too quickly.

Wherever possible, independent scaffolding should be used to avoid the need to subsequently make good putlog holes and other breaks in the work.

(i) Concrete block and clay brick surfaces

The K Rend External Renders are suitable for use on medium density concrete blockwork (1400 to 1800kg/m³) manufactured in accordance with IS EN 771-3:2011+A1:2015 *Specification for masonry units – Part 3: Aggregate concrete masonry units (Dense and lightweight aggregates)*. 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 1996-1-1:2005+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.

(ii) Concrete surfaces

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. The manufacturer's guidance should be sought in cases where K Rend External Renders are applied at wall openings incorporating concrete lintels.

For each project involving the use of K Rend External Renders on concrete or fair-faced concrete, a method statement must be prepared. This method statement should address such issues as 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. Rendering on this type of background is limited to a maximum of two storeys above ground level.

2.4.4 General Application Details

K Rend External Renders must only be applied on site by trained applicators.

Where applicable, the products should be added to clean water and thoroughly mixed using a drill and paddle or a free-fall mixer in accordance with the individual product data sheets. Products applied using a spray machine are used in accordance with the instructions of the spray machine manufacturer.

The products should not be applied in rain or mist, at temperatures above 35°C or below 5°C or, if exposure to frost is likely to occur, during curing. In common with traditional sand and cement renders, they must not be applied to frost-bound walls.

Once the products have been mixed to the desired consistency, additional water should not be added. As is the case with traditional renders, slumping of the material may occur if the mix is too wet, increasing the risk of settlement cracks developing.

The base coat will remain workable for approximately 45 minutes at 20°C after mixing. The products should not be remixed once the material has started to set.

In sunny weather, work should commence on the shady side of the building and be continued around following the sun to prevent the rendering drying out too rapidly.

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, bags/tubs of the product should be checked for batch numbers – bags/tubs with different batch numbers should be checked for colour consistency.

On completion of the rendering, the surface must be checked to ensure even coverage of render.

2.4.5 Application of K Rend K1 Spray

K Rend K1 Spray is applied by hand and trowel or spray applied using suitable equipment, to the required thickness of 6 to 8mm. Reinforcing mesh is applied around all openings including reveals (and is immediately embedded into the

base coat), followed by additional pieces of reinforcing mesh (which are also embedded) applied diagonally at the corners of openings, to provide the necessary reinforcement in accordance with the Certificate holder's instructions.

Once the first pass stiffens, the second pass is applied to a thickness between 10 and 12mm and is levelled to a uniform thickness. Scraping should take place when the render sets but before it fully hardens (typically between 4 and 36 hours). It is essential that all areas are textured at the same stage of readiness to achieve an even shade of finish.

2.4.6 Application of K Rend Silicone TC15

The initial application of K Rend UF Base is applied by hawk and trowel, or spray applied using suitable equipment, onto the blockwork to a thickness of 7mm. Before the initial base coat layer has set, a key is formed by scratching the render surface, which is then left for 3 hours.

A new batch of K Rend UF Base is prepared and applied as before, up to a total thickness of 15mm. The base coat is lightly wetted with water and smoothed over with a trowel. The surface is then left to cure for a minimum of 14 days before the K Rend TC Primer is applied.

Once the base coat has set, K Rend TC Primer is applied by roller at 0.25kg/m² and left to dry for a minimum of 24 hours. Once the primer is dry, K Rend Silicone TC15 is float-applied at 2.5kg/m² to 1.5mm thickness, to give an overall thickness of approximately 17mm.

2.4.7 Design Details

(i) Parapets

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

(ii) Window and door reveals

Alkali resistance mesh reinforcement must be included in rendering along the lintel. External arrisses are formed using bevelled timber battens or by using the appropriate beading. In the interest of durability, only approved beading should be used (see Part 4.4 of this Certificate). Beads must not be used at corners where ashlar features are being formed.

(iii) Ground level detail

A bellcast or stop bead should be provided 150mm above ground level or above the DPC where the DPC is at a higher level. The K Rend External Render is dressed down to the stop bead. The plinth is then rendered to complete the façade.

(iv) 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 mesh reinforcement prior to applying the K Rend External Render. The mesh should be bedded in a thin coat of K Rend HPX Base as a preliminary process to the first coat.

(v) Expansion joints

Where expansion or movement joints occur they should be brought through to the surface and not covered by the K Rend External Render. Advice should be sought from the Certificate holder on movement beads that can be used at expansion joint locations. In the interest of durability, only approved expansion joint beading should be used (see Part 4.4 of this Certificate).



3.1 GENERAL

K Rend External Renders will enhance the weather resistance of concrete and masonry walls and provide a decorative finish. The renders are satisfactory for external application to properly designed and constructed walls and can also be used as an internal decorative render.

3.2 STRENGTH AND STABILITY

K Rend External Renders comply with the relevant sections of IS EN 13914-1:2016. The renders should not be applied in areas where there is evidence of corrosion of steel reinforcement or other metal products in the background. K Rend External Renders are not suitable for application over gypsum plaster or other previously decorated surfaces.

3.3 STRUCTURAL FIRE SAFETY

The cementitious K Rend External Renders are non-combustible and have Class A1 reaction to fire classification according to IS EN 13501-1:2007. These renders, being non-combustible, do not contribute to either fire propagation or surface flame spread.

K Rend Silicone TC15 has a fire classification of Class B-s2, d0, while the other silicone containing render (based on cement) has Class A1 reaction

to fire classification according to IS EN 13501-1:2007.

The renders are non-toxic in fire conditions.

3.4 WEATHER RESISTANCE

K Rend External Renders, when used on properly designed buildings, in accordance with this Certificate, the manufacturer's instructions, and when applied as per sections 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 water repellent additive in the product mix, K Rend External Renders prevent water reaching the substrate during rain.



4.1 BEHAVIOUR IN FIRE

In accordance with Table A6 of TGD to Part B of the Building Regulations 1997 to 2017, the cementitious K Rend External Renders have a Class 0 spread of flame classification and are non-combustible. The K Rend Silicone TC15 is not non-combustible and has Class B-s2, d0 reaction to fire classification according to IS EN 13501-1:2007. They are therefore 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 2017.

K Rend External Renders are non-toxic in normal use and fire conditions.

4.2 THERMAL CONDUCTIVITY

The thermal conductivity (λ) values for the K Rend External Renders are listed on the manufacturer's Declaration of Performance for each product.

4.3 WATER VAPOUR RESISTANCE

The water vapour permeability coefficient (μ) values of 12mm thickness of a sample of K Rend

External Renders tested to IS EN 1015-19:1999 AMD1 2014 *Methods of test for mortar for masonry – Determination of water vapour permeability of hardened rendering and plastering mortars* are listed in Table 1.

Product	Water Vapour Permeability Coefficient (μ)*
K Rend UF Base	≤ 0.21
K Rend HP12 Base	≤ 1.19
K Rend HPX Base	≤ 0.13
K Rend Silicone WP	≤ 0.13
K Rend Silicone FT	≤ 0.17
K Rend Silicone Spray E Grade	≤ 0.13
K Rend K1 Spray	≤ 0.11
K Rend Silicone Dash	≤ 0.13
K Rend Silicone Roughcast	≤ 0.18

Table 1: Water Vapour Permeability

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 colour retention of K Rend External Renders is good. The products are less susceptible to crazing and cracking than some traditional renders. K Rend External Renders 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 K Rend External Renders 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 should be undertaken before repairs are carried out. 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 ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING:

- Impact resistance following wet/heat and freeze/thaw cycling
- Flexural and compressive strength of mortars
- Water vapour resistance
- Dry bulk density*
- Compressive strength at 28 days*
- Adhesion*
- Capillary water absorption*
- Water vapour permeability coefficient*
- Reaction to fire*

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 the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- (iii) Site visits were conducted to assess the practicability of installation and the history of performance in use of the product.

4.8 CE MARKING

The manufacturer has taken responsibility of CE marking the K Rend External Renders 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 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.

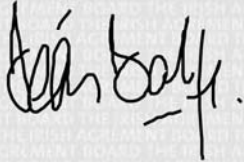
5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is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

NSAI Agrément

This Certificate No. **06/0248** is accordingly granted by the NSAI to **Kilwaughter Minerals Ltd** on behalf of NSAI Agrément.

Date of Issue: **April 2006**

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.n Sai.ie

Revisions: September 2007, December 2017

- Inclusion of Spray Rend.
- References to Building Regulations and standards updated, product specifications updated to reflect manufacturer's DoP, inclusion of K1 Spray and Silicone TC15.