



One Coat Render

Application & Maintenance Guide

Product Description:

Kilsaran One Coat Renders are through coloured decorative rendering mortars designed for single coat application to most common brick work and block work backgrounds.

Product Use:

Kilsaran One Coat Renders are formulated for both hand and machine application. Kilsaran One Coat Renders can be applied to suitably prepared exterior or interior substrates. Please note it is recommended that One Coat renders are given a scrapped texture finish to ensure a uniform colour finish. Condition of use on smooth concrete and low suction backgrounds is outlined in Section 3.2.2 of this document.

Section 1: Product Specification & Control

1.1 Product Standard

Kilsaran One Coat Renders are produced in an ISO 9001 quality-controlled environment to the requirements of a one coat render as set out in EN 998-1:2010 – *Specification for mortar for masonry – Part 1: Rendering and plastering mortars*. Kilsaran One Coat Renders are a CS III render as standard, however they are available in all strength classifications as set out in EN 998-1:2010.

1.2 Product Specification

Kilsaran One Coat Renders are manufactured and marketed in accordance with the requirements set out in Construction Products Regulation (EU) No. 305/2011, and Annex ZA of the current harmonised standard EN 998-1:2010. All Kilsaran One Coat Renders hold a declaration of performance (DOP) and CE certificate, which declares the essential characteristics of the product.

1.3 Building Regulations 1997-2014

Part D – Materials and Workmanship

D3 - Kilsaran One Coat Renders, as mentioned in this document, comprise of 'proper materials' fit for their intended use, bear a CE Marking in accordance with the provisions of the Construction Products Regulation, and comply with the harmonised standard I.S. EN 998-1:2010.

Part A – Structure

A1 Loading – Kilsaran One Coat Renders have adequate strength and stability by complying with the relevant sections of I.S. EN 13914-1:2016. (see section 3.1.1 of this document)

A2 Ground Movement – Kilsaran One Coat Renders can be readily used on masonry walls of properly designed buildings, designed 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

Kilsaran One Coat Renders are non-combustible and have a Class A1 Reaction to Fire rating.

Part C – Site Preparation and Resistance to Moisture

C3 Dangerous Substances

C4 Resistance to Weather and Ground Moisture

Kilsaran One Coat Renders do not compromise the fitting of adequate damp-proof membranes, appropriate radon and dangerous substances protection membranes and other gas handling systems to meet the requirements of the Building Regulations. Kilsaran One Coat Renders, when properly applied on adequately designed buildings, will provide adequate weather resistance in all exposures, as outlined in Section 3.1.3 of this document.

Part E – Sound

E1 Airborne Sound (Walls) – Kilsaran One Coat Renders will complement the airborne sound resistance of concrete or masonry walls and can be readily used in the design and specification of party walls to meet the airborne sound requirements of the Regulation.

Part L – Conservation of Fuel and Energy

L1 Conservation of Fuel and Energy – Kilsaran One Coat 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. (see Section 5.5 of this document)



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Section 2: Controls

2.1 Manufacture

Kilsaran One Coat Renders are manufactured in a computerised batching facility to controlled product formulations. All components, including additive additions, are weight batched to ensure accuracy.

2.2 Quality Control

Kilsaran One Coat Renders are manufactured under a certified ISO 9001 Quality Management System and a certified EN998-1:2010 Factory Production Control system. These Systems control incoming raw materials, production processes, material packaging, material storage and delivery. Kilsaran's manufacturing facility houses an onsite test laboratory where quality control testing is carried out on raw materials and finished product.

2.3 Delivery, Storage and Marking

Kilsaran One Coat Renders are bagged into sealed moisture resistant 25kg paper bags. Bags are delivered on a pallet with a plastic stretch hood. Kilsaran One Coat Renders are packaged in their own clearly identifiable bag with, the product name, colour, and batch number printed on its side. Bags of Kilsaran One Coat Render have a shelf life of 12 months when stored unopened in their original packaging and kept dry and clear from the ground.

2.4 Ancillary Items

Kilsaran One Coat Renders only require the addition of clean potable water. Each 25kg bag is supplied with all the components fully mixed.

Other items which may be required include;

- Rigid PVC, or stainless steel beading profiles
 - Angle bead
 - Stop bead
 - Belcast bead
 - Reveal bead
 - Expansion bead profile
- Alkali resistant mesh
- Kilsaran Super Bond Render – a highly polymer modified proprietary render designed to provide a key on smooth and friable backgrounds.
- Plasterers knife
- Plasterers float and sponge
- Ashlar cutter
- Plasterer's straight edge
- Thickness gauge
- Soft bristle brush
- Measuring bucket
- Spraying machine (PFT, Lancy, M-tec, Putzmeister etc.)

Section 3: Project Design

3.1 Product

Kilsaran One Coat Render will enhance the weather resistance of concrete and masonry walls and provide a decorative finish. Kilsaran One Coat Renders are suitable for external or internal application to properly designed and constructed walls.

3.1.1 Strength & Stability

Kilsaran One Coat Renders comply with the relevant sections of I.S. EN 13914-1:2016. This standard gives recommendations for building details, design and material specifications. Kilsaran One Coat Renders should not be used in areas where there is evidence of corrosion of steel reinforcement or other metal products in the background. Kilsaran One Coat Renders are not suitable for application over gypsum plaster or previously decorated areas. Kilsaran One Coat Render is a CS III render to I.S. EN998-1:2010 and will have adequate resistance to impact and abrasion when used in all normal situations.

3.1.2 Structural Fire Safety

Kilsaran One Coat Renders are non-combustible and have a Class A1 Reaction to Fire rating, as set out in section 5.2.2 of EN998-1:2010.

3.1.3 Weather Resistance

Kilsaran One Coat Renders when applied to properly designed buildings and applied in accordance with this document, I.S. EN13914-1 and SR325:2013+A1:2014 will have adequate resistance to wind and wind-driven rain in all exposures in Ireland.

SR325:2013+A1:2014, Section 5.5 – *Exclusion of Moisture* outlines in Table 10 that a severe exposure category obtains in districts where the driving rain index is 7 or more.

I.S. EN 13914-1:2016, Section 6.7 – *Resistance to rain penetration* states that for factory made renders being used in severe conditions of exposure, where the rendering is subject to much rain, renders which conform to the requirements of EN 998-1 and having a capillary water absorption Class W2 should be used. Kilsaran One Coat Render is independently tested and confirmed to have Class W2 capillary water absorption.

3.2 Installation Control

The application of Kilsaran One Coat Renders must be carried out in accordance with this document, the manufacturer's instructions and the recommendations set out in I.S. EN 13914-1:2016.



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3.2.1 Site Survey and Preliminary Work

Kilsaran One Coat Renders are satisfactory for use on brickwork, block work and suitably prepared concrete backgrounds. It is essential that such walls are designed and constructed to prevent moisture penetration and the formation of condensation. Kilsaran One Coat Renders are not suitable for application to gypsum plaster.

Older buildings in coastal areas should be checked for salt content of the substrate. Test results will determine the suitability of the substrate to receive a render, and will highlight any need for substrate treatments. Kilsaran One Coat Renders should not be applied to an area where there is evidence of corrosion of steel reinforcement in the masonry. Kilsaran One Coat Render should be protected at the top of walls by an adequate overhang or by adequately sealed, purpose made flashing.

A pre-application survey of the property should be carried out by the designer and/or rendering contractor to determine the suitability of the substrate to receive the render, and to note whether any repairs to the structure are necessary prior to application. The survey should take into account, but may not be limited to;

- Preliminary treatment of the background
- Positioning of beads
- Detailing around doors windows and openings
- Damp-proof course level
- Exact position of movement joints
- Areas where flexible sealants must be used
- Any alterations in external plumbing or ducting

3.2.2 Preparation of Substrate

Kilsaran One Coat Renders should only be applied to stable and mature backgrounds. A minimum of one month should be allowed following completion of the wall construction before application of the render commences. All substrates must be clean, sound, and free from dust, grease and debris. Fill any voids and recesses with Kilsaran GP Render and to level uneven surfaces and minimise variations in the finished product.

Do not apply Kilsaran One Coat Renders to frozen, thawing or excessively wet substrates.

Kilsaran One Coat Renders rely on a combination of suction and surface texture to achieve sufficient bond. The recommendations set out in I.S. EN 13914-1:2016 *Design, preparation and application of external rendering and internal plastering – External rendering* should be followed. In particular section 6.4 - *Adequacy of the background*, should be consulted. The substrate should be checked for suction by spraying the surface with water. If the water is not absorbed, or the absorption is excessively slow, obtaining a sufficient bond may not be possible. In such instances a preparatory treatment such as Kilsaran Super Bond Render may be required, and advice

should be sought from Kilsaran. However if the water is readily absorbed by the substrate then it may be too absorbent and pre-wetting of the substrate will be necessary to prevent render mixing water being readily extracted by the background. In most instances the excessive suction of a substrate can be controlled by spraying, but not soaking, the substrate with water in the hours prior to render application.

Where the substrate consists of different materials, or materials of variable suction, the recommendations set out in I.S. EN 13914-1:2016 should be followed. Section 6.4 - *Adequacy of the background*, 7.5 – *Preparation of background* and 6.14.5.3 – *Dissimilar backgrounds that cause differential movement*, outline steps to be taken when rendering over backgrounds with variable suction. Kilsaran Super Bond Render can be applied as a stipple coat to such substrates to equalise the suction from the background.

Kilsaran One Coat Renders can be spray applied to most common block and brick surfaces without the need of a scud coat. If applying the render by hand the use of a suitable scud coat is required. A 2:1 sand and cement coat or an adhesive spatter dash (Kilsaran Super Bond Render) should be applied to the background by throwing it from a short distance, ensuring complete and even coverage of the substrate. 1 -2 hours after its application, dampen down the scud with a fine mist of water to ensure adequate hydration of the cement. Allow the scud coat to dry and harden fully before application of Kilsaran One Coat Renders.

(i) Concrete block and clay brick surfaces

All block work and brick work should be designed and constructed in accordance with current standards and regulations and in particular SR325:2013+A1:2014 – *Recommendations for the design of masonry structures in Ireland to Eurocode 6*.

(ii) Concrete surfaces

When applying Kilsaran One Coat Render to concrete backgrounds ensure all dirt, dust, loose matter, efflorescence, formwork oil and organic growth is removed by brushing and washing the surface with a suitable solution. In cases where Kilsaran One Coat Renders are to be applied at wall openings incorporating concrete lintels, refer to section 3.2.4 (Design Detail) of this document.

For projects involving the use of Kilsaran One Coat Renders on concrete, a method statement must be prepared by the designer and rendering contractor. The method statement should address the choice of shutter, mould release agent, removal of laitance, and the application of a render key coat such as Kilsaran Super Bond Render. In all cases the key coat material needs to be approved by Kilsaran. Application of Kilsaran One Coat Renders to concrete surfaces is limited to two stories above ground level. In all instance guidance should be sought from Kilsaran.



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3.2.3 Application

It is essential that the application of Kilsaran One Coat Renders is carried out by experienced rendering contractors, strictly in accordance with this document and the recommendations set out in I.S. EN 13914-1:2016.

Kilsaran One Coat Renders should not be applied in rain or mist, at temperatures below +5°C or above +30°C, or if frost is forecast during or soon after the curing process. Kilsaran One Coat Renders should not be applied to frost-bound walls and, as stated in section 7.4.1 and 7.9.1 of I.S. EN 13914-1:2016, the temperature at the face of the wall should be greater than +5°C.

Kilsaran One Coat Renders should be mixed with 5-6 litres of clean potable water (per 25kg bag) in a suitable mixer or continuous spray-render machine until a uniform material with a consistent workability is achieved.

Kilsaran One Coat Render is applied in one coat consisting of two passes. The first pass should be applied at a thickness of 3-5mm, followed by a second pass (approximately 30 minutes later) to give a total monolithic coat thickness of 18-23mm. The surface is then levelled using a straight edge or trowel and allowed to gain its initial set which is typically up to 16 hours (depending on substrate and drying conditions). Protect newly rendered surfaces from excessive drying caused by strong sunlight or prevailing winds. In sunny weather work should commence in the shade and follow the sun around the building during the course of the day.

Kilsaran One Coat Render must be protected from rain, mist and temperatures below +5°C, during the curing period. Polythene sheeting is recommended for curing and should hang clear of the face of the wall ensuring not to form a tunnel through which the wind could increase the evaporation of water from the newly rendered surface. The sheeting must not be allowed to come into contact with the newly rendered surface as this could produce a patchy appearance.

When the product has cured sufficiently and gained an initial set the surface of the render is removed by using a toothed scrapper/nail float in a circular motion. 3-5mm of render should be removed in the scraping process, ensuring the thickness of the finished render is a minimum of 15mm and no greater than 20mm at any given point.

Kilsaran One Coat Renders, when used as a render coat to receive dry dashing stone, must be applied in two passes. The first pass should be applied at a thickness of approximately 5mm. At this point a layer of alkali resistant mesh (4mm aperture) should be troweled into the fresh render surface, ensuring it does not penetrate to the background. The second pass should be applied (approximately 30 minutes later) to give a total coat thickness of 18-20mm. The surface is then levelled using a straight edge or trowel and dashing stone is applied by gently throwing from a close distance ensuring complete coverage.

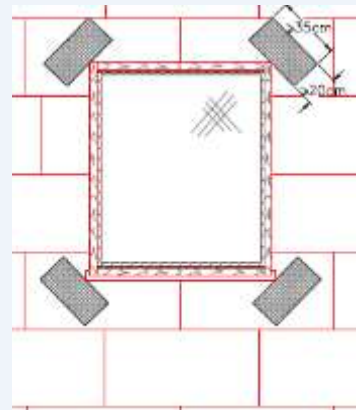
3.2.4 Application relating to Design Details

(i) Parapets

Kilsaran One Coat Renders should 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

An alkali resistant mesh (such as Ceresit CT325) must be included in rendering along a lintel, and at natural stress points around window and door openings. The mesh should be fully embedded in the first pass of render either at diagonals or overlapping around the opening. In the interest of durability, stainless steel or PVC beads should be used. Beads must not be used at corners where ashlar finishes are being applied. See below diagram for guidance.



(iii) Ground level detail

A PVC or stainless steel belcast or stop bead should be placed 150mm above ground level or above the dpc level if it is at a higher level.

(iv) Dissimilar Backgrounds

When using Kilsaran One Coat Render over dissimilar backgrounds, section 6.14.5.3 of I.S. EN 13914-1:2016 should be consulted. Where different backgrounds meet, joints should be covered by an alkali resistant mesh (such as Ceresit CT325). The mesh should be embedded in a thin coat of Kilsaran One Coat Render as a preliminary process to the first coat.

(v) Expansion joints

Adequate expansion joints must be incorporated into all render finishes and must follow expansion and movement joints in the background. Ensure the render never spans or covers a joint in the background. Expansion joint location should be determined by the designer in conjunction with BS 6093:2006 – *Design of joints and jointing in building construction* and SR325:2013+A1:2014.





Section 4: Maintenance

While Kilsaran One Coat Renders are through coloured and assumed to be maintenance free, regular checks should be carried out to ensure architectural details are shedding water clear of the building, are present and are functioning correctly. In addition external plumbing fittings such as gutter and downpipes should be checked for condition and functioning.

4.1 Cleaning

Kilsaran One Coat Renders may be cleaned as often as required by means of hosing them down with water and giving them a light brushing, or occasionally by using a pressure washer and a mild masonry detergent diluted in the washing water. When using a pressure washer care should be taken not to hold the nozzle of the washer lance too close to the rendered surface. Ensure the spray nozzle is adjusted to allow a wide fan of water clean the surface from a distance, rather than concentrating a jet of water on any particular area. Timing of cleaning cycles is solely dependent on local atmospheric conditions and exposure to pedestrian, cycle traffic etc. (ground floor locations). For surfaces affected with organic growth, such as algal, fungal etc., the affected areas should be brushed clean and treated with a suitable biological cleaning solution such as Kilsaran Ceresit CT 99.

4.2 Repairs

4.2.1 -General

Kilsaran One Coat Renders are through-coloured rendering mortars therefore once applied and finished, any repairs undertaken are likely to be visible to some extent. As a result, Kilsaran always recommend that areas, needing repairs should have full panels removed and re-applied. In some cases areas of the façade that have architectural or design features (such as ashlar cuts) can be used as an edge of a panel or section, making them suitable as a natural division between acceptable sections and those needing repair. All newly repaired areas will have a fresh 'new' appearance early in its life, but these areas should weather in over time. In all instances the quality of the repair is highly dependent on the skill, experience and patience of the plastering contractor carry out the work.

4.2.2 –Damaged or de-bonded render

As Kilsaran One Coat Renders are through-coloured rendering mortars, small knocks and scrapes will not be as noticeable as with natural un-coloured traditional products that have a painted finish. If a repair is necessary or if an area of the rendered surface has become de-bonded, the material should be removed back to the substrate, and in the case of de-bonded areas removed back to the substrate until a stable, sound render edge is achieved.

Once all damaged and/or de-bonded render has been removed from the affected area, the edges of the existing render should be protected with masking tape, and a key coat of Kilsaran Super Bond should be applied and allowed to cure. Following this, a coat of fresh One Coat Render should be applied to the area, ensuring to leave it 2-3mm proud of the existing surface. When the newly applied render has 'picked up' and an initial set has occurred, the surface should be given scraped finished, back flush with the surrounding area.

4.2.3 –Cracks

Techniques and guidelines for the minimising the occurrence of cracks are outlined in this document and also I.S. EN 13914-1:2016 section 6.14, and specifically Section 6.14.5. Before commencing any repairs to cracks, an investigation should first be undertaken to establish their possible cause and if future cracking may occur. Cracks following straight lines are not typical of render failure, but rather as a result of movement in the background and/or structure. In these instances a survey of the affected area and its background should be conducted by a structural engineer. As per section 8.3.1 of I.S. EN 13914-1:2016, 'small inconspicuous cracks that remain dry and sound should be left alone'. For wider, visible cracks and damaged areas the following steps should be followed;

1. Use a disc cutter to cut a straight line 50mm either side of the crack and remove render back to the substrate.
2. Protect the other edges of the cut with masking tape and prime the inner edges of the channel with a SBR primer.
3. Whilst primer is still tacky apply a thin layer of One Coat Render to the area and insert a piece of CT325 mesh cut to length and width. Then apply a further coat of One Coat Render (wet on wet) and leave it 2-3mm proud of existing render (for scrapped texture finish). Leave level with surrounding areas for receiving dry dashed stone.
4. Allow the product to pick up and scrape back the excess render to leave it flush with the surrounding area. (scrapped texture finish)
5. Brush the dry product down to remove any dust (scrapped texture finish) and remove the masking tape from the area.





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4.2.4 –Painting

Painting of Kilsaran One Coat Render, whether to cover repaired areas or simply to change the colour of the façade, is possible using Kilsaran Ceresit CT 48 paint. Kilsaran Ceresit CT 48 is a high performance silicone based paint ideal for use over Kilsaran One Coat Render. It may be necessary to prime the surface of the render before painting commences. If required prime the surface with Kilsaran Ceresit CT 17 and allow to fully dry (approximately 4 hours) before application of follow on coats. It also may be necessary to pre-treat the rendered surface with a suitable wash to remove dirt and organic material. In this instance pre-treating the area with Kilsaran Ceresit CT99 is recommended. Once dry apply a coat of Kilsaran Ceresit CT 48 to the surface using a medium pile roller. For best results apply CT 48 in a criss-cross pattern to the rendered surface. Kilsaran Ceresit CT 48 is available in a wide range of colours, accommodating RAL numbers, NCS (Natural Colour Systems) colours and in colours complementing our One Coat Render colour range. Please note however that it is not possible to 100% colour match a mineral render colour with a synthetic product such as CT 48 silicone paint.

Section 5: Technical Data

Kilsaran One Coat Renders are produced in a certified ISO 9001 Quality controlled environment to meet the requirements of I.S. EN 998-1:2010. Kilsaran's documented quality control procedures outline the type and frequency of tests to be carried out in the on-site laboratory. In addition to in house testing, Kilsaran One Coat Renders have their essential characteristics independently assessed.

5.1 Behavior in Relation to Fire

Kilsaran One Coat Renders are non-combustible and have less than 1.0% of homogeneously distributed organic materials, thus classifying them as reaction to fire Class A1, without the need for test.

Reaction to Fire	Class A1
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5.2 Capillary Water Absorption

Kilsaran One Coat Renders have been independently tested in accordance with EN 1015-18 to determine their capillary water absorption coefficient value and have a capillary water absorption Class W2.

Capillary Water Absorption	Class W2
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5.3 Water Vapour permeability

Kilsaran One Coat Renders have been independently tested in accordance with EN 1015-19 to determine their water vapour permeability coefficient and have a vapour permeability of 0.12 μ .

Water Vapour Permeability	0.12 μ
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5.4 Durability

As stated in I.S. EN998-1:2010, section 5.2.3 – *Durability* the durability of a one coat rendering mortar shall be assessed by testing adhesion and water permeability after weathering cycles. Kilsaran One Coat Renders have been independently tested for both these characteristics in accordance with EN1015-21. The test values of adhesion and water vapour permeability after weathering cycles are as follows;

Adhesion After Weathering Cycles	≥ 0.2 N/mm ² (C)
Water Vapour Permeability After Weathering Cycles	< 1ml/cm ² after 48h

5.5 Thermal Conductivity

Kilsaran One Coat Renders have been independently tested in accordance with EN 1745:2002 to determine and assign their thermal conductivity on the basis of material composition and density. Kilsaran One Coat Renders have a λ value (thermal conductivity) of 0.47 W/mK.

Thermal Conductivity (λ)	0.47 W/mK
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 Kilsaran Concrete, Piercetown Dunboyne Co. Meath Ireland 13	
EN 998-1 One coat rendering mortar (OC) for use in external rendering and internal plastering.	
Compressive Strength	Category CS III
Reaction to Fire	Class A1
Water Absorption	W2
Water Vapour Permeability	$\mu < 10$
Water Vapour Permeability After Weathering Cycles	<1ml/cm ² after 48 Hours
Adhesion After Weathering Cycles	≥ 0.2 MPa (C)
Thermal Conductivity	($\lambda_{10, dry}$) 0.47 W/mK
Durability (against freeze - thaw)	Evaluation based on provisions valid in the intended place of use of the mortar.



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