

**GRANOL EXTERNAL WALL INSULATION SYSTEM WITH ACRYLIC OR SILICONE FINISH ONTO BLOCKWORK**

**M21 INSULATION WITH RENDERED FINISH**

**210 EXTERNAL WALL INSULATION SYSTEM**

Drawing reference(s)

Manufacturer: Envirowall Ltd

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Granol Mineral Fibre or Polystyrene System with Granol-G highly polymer modified base coat with Silicone or Acrylic Primer and or Acrylic top coat.

Granol –G polymer modified cement-based adhesive

Dubbing out where blockwork is out of line– this can be done with standard sand cement mortar to ensure adequate base for adhering insulation slabs

Insulation – Fire retardant Expanded Polystyrene  $\lambda$  0.038w/m<sup>2</sup>  
Or Mineral Wool EWI Slab HD Density 140kg/m<sup>2</sup> minimum  
compressive strength 25kN/m<sup>2</sup>  $\lambda$  0.036w/m<sup>2</sup>

Insulation to be mechanically and adhesively fixed. Mechanical fixing to Ejot TID nylon fixings with nylon pin and 60mm mushroom head.(industry standard). Ensuring minimum 35mm embedment at a rate of 8/m<sup>2</sup> and confirmed after pull out tests on site

Profiles

Base profiles to suit insulation manufactured from aluminium.

Corner profiles to be UPVC with attached reinforcing mesh.

All insulation to be sealed at junctures with illmod 600 sealing tape 3-7mm.

Base coat to be Granol –G highly polymer modified base coat applied 2-3mm thick over insulation boards. Plastic coated glass fibre reinforcing mesh trowled into base coat mortar.

Base coat mortar allowed to fully cure before applying Granol Silicone or Acrylic Primer

Granol Silicone or Acrylic top coat to be applied and finished to an even texture. Colour and grain size to be confirmed to be confirmed

310 DESIGN.

Envirowall to provide drawings for all standard and non-standard details.

320 INSTALLATION REQUIREMENTS

Weathertight under all anticipated conditions

Capable of resisting all dead loads and design live loads including impact and wind loads and accommodating all thermal movements without damage.

330 IMPACT LOADING

Impact resistance of finished walls to be 10Nm between 1.5 and 6m above ground level and 5Nm over 6m above ground level

350 WIND LOADING

Design Wind loads + 1.0kN/m<sup>2</sup>

360 SAMPLES

Submit samples of 900mm x 600mm of insulated render with part PPC profile eg bellcast or undercill etc.) for approval. Keep approved samples on site for the duration of the contract for inspection/comparison purposes.

370 UNIFORMITY OF COLOUR AND TEXTURE OF COATINGS

Type/proportion of constituent materials: Unchanged once samples of coatings have been approved

**INSTALLATION**

410 SITE STORAGE OF GRANOL MATERIALS

Site storage and protection of Granol materials must be in accordance with the manufacture's instructions.

420 MIXING OF RENDERS AND ADHESIVES

All Granol renders are mixed using a paddle mixer in accordance with manufacturer's recommendations.

#### 430 WEATHER CONDITIONS

Application of the system must only be carried out in suitable weather conditions. Granol renders and adhesives must not be applied in rain, fog or mist, at temperatures below 5<sup>0</sup>C or above 30<sup>0</sup>C or if exposure to frost is likely to occur during drying. Granol renders and adhesives must not be applied to saturated or frostbound walls and insulation boards. In sunny weather work should commence on the shady side of the building and be continued round following the sun to prevent the rendering drying out too rapidly.

#### 440 COATING OF NEWLY APPLIED RENDER

Coating of newly applied render is to be delayed as long as possible, particularly in wet weather, mist, fog or cold conditions, to allow the render to dry out and shrink so that the surface can be stopped and sealed when painted. A minimum of 48 hours in good drying conditions is normally recommend.

#### 450 PROGRAMMING THE WORK

The Contract Administrator must ensure that the work is programmed to be carried out during suitable weather conditions, taking into consideration seasonal variations and allow sufficient time in the programme for stoppages due to inclement weather.

#### 460 PROTECTION TO NEW WORK

The main contractor must provide protection to new work during inclement weather using a protection system suited for the worst weather conditions that can reasonably be anticipated. The main contractor must monitor local weather forecasts and if necessary, modify their protection system accordingly. Failure to carry out such protective measures must make any resulting failure in the Granol products or systems the sole responsibility of the main contractor.

#### 470 COVERAGE RATES

Envirowall Limited will not, under any circumstances, guarantee coverage rates quoted for products. The rates quoted are based on site experience but may vary due to site conditions, operator skills etc. Contractors quoting for contracts must ensure that coverage figures can be achieved in each

particular instance. No claim against Envirowall limited will be allowed relating to coverage of materials.

#### 480 AVOIDANCE OF COLOUR SHADING

To minimise colour shade variations of 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 drainpipes, reveals or lines of doors and windows, help mask cold joints. Where long uninterrupted runs are planned, bags of the material should be checked for batch numbers should be checked for colour consistency. Materials having the same batch number should be used to complete an elevation.

BS 5262: 1991 AND BS 8000 : PART 10 : 1995

All rendering should be in accordance with the relevant recommendations of BS 5262 : 1991, Code of Practice for external renderings, BS 8000 Part 10 : 1995, code of Practice for plastering and rendering, and Envirowall Limited's instructions.

BS 6150 : 1991 AND BS 8000 : PART 12 : 1989

All Granol masonry paints and decorative finishes must be applied during suitable weather conditions to dry backgrounds, strictly in accordance with Envirowall Limited's instructions and the relevant clauses in BS 6150 : 1991, Code of Practice for painting of buildings, and BS 8000 : Part 12 : 1989, workmanship on building sites, Code of Practice for decorative wallcoverings and painting.

#### 490 REPAIR TO DAMAGE

An Envirowall Registered Contractor using the appropriate components must be used to repair damaged areas and procedures detailed in the Envirowall installation instructions.

Conventional rendering techniques and Granol render materials are used to repair damage to the product. Damage to the product should be repaired immediately and repairs should be carried out in accordance with the relevant recommendations of BS 5262 : 1991. Regular maintenance checks should be carried out on architectural details for shedding water and on external plumbing and fittings to prevent penetration of water into the rendering.

## 500 HEALTH AND SAFETY

The fibres as used in Granol renders may irritate the skin. Protective clothing should be worn to avoid contact with both dry, unmixed material and with wet mortar. Great care must be taken to avoid contact with eyes.

When mixing Granol materials a filter respirator should be worn.

Where excessive concentrations of dust may accumulate the measures defined in the Health and Safety Executive publication EH40/96 'Occupational Exposure Limits 1196 for unlisted substances should be followed. Note that EH40 is published annually, and the current edition should be followed.

## 510 DURABILITY

The system should remain effective for at least 30 years, provided any damage to the surface finish is repaired immediately, and regular maintenance is undertaken including checks on joints in the system and on external plumbing fittings to identify leakage of rainwater into the system, and appropriate steps are taken to correct the defects.

## 520 LIME BLOOM

Render containing Portland cement may be subject to lime bloom during the application and curing process. The occurrence of this may be reduced by programming the work to be carried out during suitable weather conditions and by provision of adequate protection from rain, cold, and mist or fog conditions during curing and hardening of the render. The effect is less noticeable on lighter colours. It can be expected to disappear with time, the rate depending on the environment to which it is exposed.

For sensitive areas where aesthetics are one of immediate importance the contractor should allow for careful removal of lime bloom should the above precautions not be successful.

## 530 SPILLAGE OF GRANOL COATING MATERIALS AND MASONRY PAINTS

Granol renders coatings and paints are highly adhesive and all necessary precautions must be taken to protect footpaths, windows, adjacent walls, roof surfaces etc. from spillage, which may cause stains. All windows and

adjacent surfaces should be protected during the application of Envirowall and Granol products.

#### 540 WINDOW CILL PROTECTION

Where window frames incorporating window cills are to be provided by others, then the cill projection must be to a minimum of 50mm beyond the outside line of the Granol system.

#### 550 SCAFFOLDING

Wherever possible independent scaffolding should be used to avoid the need to subsequently make good putlog holes and other breaks in the work. Where the scaffolding is required to be tied back to the building it is normal to recommend "bix-outs" to reduce the incidence of patches left by putlogs and to provide access points for future scaffolding required for maintenance inspection and repairs.

The scaffolding must be arranged to enable good access to be obtained to the whole of the face of the building and sufficient clearance for working is to be provided between the scaffolding and the finished surface of the external wall insulation system.

An allowance must be included for the thickness of the finished system on the face of the building.

#### 560 LINE AND LEVEL OF BUILDING

The terms "line and level" used in conjunction with this specification refer only to dealing with minor localised variations in the surface to which the system is applied.

The system cannot correct major variations in line and level over several storeys in height and over large areas of elevations, and in these cases will basically follow the line of the existing building unless these building irregularities are overcome by a treatment, prior to the applications of the External Wall Insulation system.

The contractor must inspect the existing wall and where necessary include for a bed coat of dubbing render to take up any variation in the flatness of the backing wall.

#### 570 LINE AND LEVEL STOREY HEIGHT

Surfaces should be sound, clean and free from all loose material. The flatness of the surfaces ,must be checked; this may be achieved using a straight edge spanning the storey height. Any excessive irregularities, i.e. greater than 10mm, must be made good using dubbing render prior to the installation to ensure that the insulation boards are installed with a smooth, in-plane finished surface. Horizontal projections, ledges etc. should be removed or dubbed out to provide a level surface to receive the system to the approval of the Contract Administrator.

#### 580 SEALING TAPE

Prior to the application of the insulation boards, supply and apply Illmod 20/3 EWI sealing tape to seal all joints between all system abutments and against other materials e.g. window/door frames, soffit boards, projecting vents, gas and electric meter boxes etc.

#### 590 FIXING AND LEVELLING OF BASE BEADS

Supply and securely fix the following aluminium base profile beads using 6/5 hammerset screws at max. 300mm centres ensuring that the base profile is always fixed in the last plug slot on both ends of the plate. Unevenness in the wall surface should be overcome using packing shims and the base profile set flat and checked to ensure that it is true to line and level before securing to the structure. Fill any gaps between the base profile and the background with dubbing render

At building corners, cut and mitre the base profile to size. Join mitred edges with base profile connection clips

Supply and fix aluminium base profile at base of insulation system and to a line approved by the Contract Administrator. Join lengths of the support rails using base profile connection clips

#### 600 ADHSIVE MORTAR

Mix Granol-G 1 Composite Mortar in the ratio 25 kg (1bag) to approximately 6.5 litres of water using a paddle mixer until a smooth workable consistency is achieved. The material is left to stand for at least 10 minutes and then re-mixed before use. Mixed mortar must be applied within 3 hours. Material which has become stiff must not be re-mixed. Granol-G Composite Mortar can be applied manually by trowel or by machine spray projection.

## 610 INSULATION SLABS

Supply and apply flat back to the surface of the existing structure in accordance with the following fixing clause insulation slabs. The slabs shall be tightly butt jointed and shall be laid with staggered joints and overlapped at building corners and in such a manner that board joints do not occur within 200mm of the corners of the openings. Board pieces narrower than 200mm shall not be used without the approval of Envirowall Limited.

## 620 BEDDING ADHESIVE

Supply, mix and apply Granol -G Composite Mortar in accordance with the manufacturers printed instructions.

Work in Granol -G Composite Mortar in a thin pressed trowelled coat across the whole surface of the insulation board and then apply with a 10 x 12mm – notched trowel Granol -G Composite Mortar across the whole surface of the prepared board.

## 630 APPLYING THE INSULATION

Press the insulating boards firmly against the wall and adjust the position slightly to ensure that any skin which may have formed on the surface of the Granol -G Composite Mortar is broken.

Press the boards firmly with a wooden board to ensure maximum contact of at least 40% between the Granol -G mortar and the background and continuously check the surface for flatness and plumb with a spirit level.

Regularly check that the board and board edges are firmly adhered to the background and, if necessary, remove and apply additional Granol -G Composite Mortar.

**CAUTION:** The edges of the insulation board must be free from adhesive. When pressing the boards, remove any adhesive extruding from the side before laying the next board to make sure an open joint does not occur.

## 640 FIXING OF INSULATION SLABS

Supply and insert through the insulation slabs and into the structure mechanical fixings of type TID 8/60 ensuring minimum 35mm embedment in the sequence and pattern as advised by Envirowall Limited. Outer face of all slabs to be flat and in-plane. Additional fixings at 300mm centres to be fixed either side of building corners and around all wall openings. The distance of

the fixings from the face of the insulation at corners of the building and wall openings should include the thickness of the insulation board plus 75mm from the corner of the existing background.

The fixing must be driven into the background until the head sits flush with the surface of the insulation.

Pull out tests should be carried out prior to the use of these fixings to ensure they give adequate retention.

#### 650 SEALING PROFILE

Supply and apply Envirowall Sealing Profile (Ref: 8585) where system abuts window and door frames and embed the mesh strip in Granol-G on insulation to reveals. Remove self-adhesive tape and apply lightweight polythene protection to window and door openings.

#### 660 FORMING OF WALL SYSTEM JOINTS

Movement joints should be formed in the Granol system over existing movement joints in the background and where dissimilar background materials abut each other.

No additional joints are required for the integrity of the system. Day joints may be required for practical reasons and the positioning of these joints should be agreed between the client contractor and Envirowall prior to the commencement of the works.

#### 670 CORNER BEAD TO EXTERNAL BUILDING CORNERS

Supply and fix meshed stainless steel corner bead to all window/ door heads and jambs.

#### 680 SCRIM REINFORCEMENT TO ALL WALL OPENINGS

Prior to the application of the main scrim reinforcement, bed on Granol-G Composite Mortar 300 x 500mm minimum pieces of scrim diagonally across corners of all wall openings and cover with Granol-G composite mortar and leave flat to receive finish render.

#### 690 REINFORCING MORTAR

Supply, mix and apply Granol-G Composite Mortar in accordance with the manufactures printed instructions.

Supply and apply the mortar with a 10 x 12mm – notched trowel, to the entire surface of the insulation board in such a way that the combed bed corresponds to the notched comb profiles. Apply the alkali-resistant glass reinforcing mesh, overlapping joints by 100mm, overlapping joints at building corners and return into window/door reveals and heads. The surface is closed with a smoothing trowel ensuring the thickness of the reinforcing coat is nominal 5mm thick and that the mesh is fully embedded in the upper third of the mortar.

#### 700 SURFACE PREPARATION

The Granol-G must be allowed to dry and shrink for approximately 2 days in good drying conditions prior to applying the chosen Granol Silicone finish.

Granol-G must be flat, clean, dry and free from dust, grease, chalking or anything else likely to prevent a good bond, prior to applying the Granol Silicone or Acrylic finish.

#### 710 SURFACE FINISH JOINTS

Areas or panels in different colours are set out prior to applying the finish using Masking Tape

#### 720 SILICONE or ACRYLIC RENDER FINISH

Supply and apply a thick coat of Granol primer with brush or lambs wool roller (diluted up to 10% with water) in the colour shade of the topcoat.

Supply and apply strictly in accordance with the manufacturer's printed instructions, Granol Silicone or Acrylic render grained finish to approved colour.

Granol Silicone or Acrylic is ready to use after stirring briefly. A small amount of water may be added (max. 2%) if required, due to the substrate or the climatic conditions.

Apply the Granol Silicone or Acrylic with a stainless steel smoothing trowel in the thickness of the grain and rub with a plastic float in a circular motion. Granol Silicone or Acrylic can also be applied with a suitable conveying pump with spraying equipment. Granol Silicone or Acrylic dries naturally by

water evaporation; the drying time may be increased in high air humidity and/or low temperatures.

#### 730 CLEANING

Wipe clean at each work stage all exposed nosing, movement joints, cills etc.