



Zerodec Specification

(Glass Reinforced Gypsum)

GRG - Glass Reinforced Gypsum
 PGRG - Polymer and Glass Reinforced Gypsum

Introduction

'ZERODEC' is the trade name given to a type of glass reinforced gypsum exclusively produced by GILLESPIE (UK) LIMITED, 1-3 East Street, Farnham, Surrey GU9 7XU (telephone 01252 323311, fax 01252 336836). Its method of production is protected by patent.

Specification

The (item) is to be made of hand-laminated (not cast) glass reinforced gypsum, combined with continuous strand monofilament glass fibre, thoroughly wetted out and trimmed all edges at green stage, the feed water having been polymer-modified and treated with super-plasticiser and fungicide. Units shall be cured for 12 hours at a constant thermostatically controlled temperature of 30oC, and should have a finished weight not exceeding 7 KG/m2 and a nominal thickness of 5mm.

1. PHYSICAL CHARACTERISTICS

1.1 Water Penetration

The material shall be suitable for all internal application, and shall not absorb moisture which may be present through excessive humidity.
 The material should not be used externally, nor in locations where it is likely to be continuously submerged.

1.2 Fire Propagation

BS476 : Part 5 and Part 6 : 1968 as amended by AMD 549 July 1970.

The material so tested shall be designated P (ie to achieve Class 0) and have a final fire propagation index of 0.9, with intermediate indices: i1 0.69 i2 0.06 i3 0.12

The material so tested shall produce no smoke.

Surface Spread of Flame - The material shall be tested in accordance with BS476. Part 7; 1971, and shall be classified Class 1.

Non-Combustibility - The material shall be tested in accordance with BS476. Part 4; 1970, and shall be classified NON-COMBUSTIBLE.

1.3 Chemical Resistance

The material will not be required to be exposed to liquid chemicals or deliquesced crystals.

1.4 Thermal Insulation

The material shall have a thermal conductivity (K) value of not greater than 0.375 W/m deg. C.

1.5 Density

The material shall incorporate a surface gel-coat and have a density of 1660 kg/m3.

1.6 Expansion

The material shall have a thermal coefficient of expansion not exceeding 14.94 x 10-6/deg. C.

1.7 Structural Characteristics

The material shall have an ultimate tensile strength of not less than 8.27N/mm2.

Bending Strength LOP 11.4 N/mm2

MOR 29.8 N/mm2

Young's Modulus 1.61 x 105

Impact Strength measured by IZOD method 19.09 kg.cm/cm2

Pull Out Force of T section 38 x 32 mm T Bar 367 kg/50cm

T section laminated over at ends 552 kg/50cm

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1.8	<p>Anti-Static The material shall hold negligible static charges in order to minimise dust attraction.</p>
1.9	<p>Ultra Violet The material shall not be affected by ultra-violet light.</p>
1.10	<p>Asbestos The material shall contain no asbestos.</p>
1.11	<p>Fungoid Attack The material shall not sustain fungoid growth under normal conditions.</p>
2	<p>MATERIAL</p>
2.1	<p>Plaster High quality hard alpha-hemihydrate casting plaster with a low expansion coefficient.</p>
2.2	<p>Glass Fibre Glass fibre tissue to be used as a first layer to produce a smooth finish and continuous strand mat laid down in multiple layers to provide thickness/strength of laminate.</p>
2.3	<p>Polymer Patent polymers to achieve improved tensile strength and reduce the permeability of the plaster.</p>
2.4	<p>Water Clean water, fit for drinking and used in such proportion as to ensure maximum workability and optimum water/plaster ratio.</p>
2.5	<p>Mould Release Agents Proprietary mould release agents/waxes applied to the moulds between each production. The agents/waxes shall not have any adverse effect upon the surface of the component.</p>
3.	<p>WORKMANSHIP</p>
3.1	<p>Design Mix All components shall be manufactured to a consistent mix, with all constituent materials accurately gauged, batched or weighed.</p>
3.2	<p>Curing All components shall be cured for 12 hours in a dehumidifying oven at a constant thermostatically controlled temperature of 30oC and moisture extraction rate to maintain a relative humidity of 30%</p>
3.3	<p>Quality Control All components shall be individually inspected, and any surface blemishes rectified accordingly.</p>
4.	<p>PERFORMANCE</p>
4.1	<p>Squareness The component, where rectangular, shall be tested for squareness by measuring the diagonals. The difference between the two measurements shall not exceed 0.5% of the length of the diagonal.</p>
4.2	<p>Flatness The deviation from the horizontal plane shall not exceed + 2mm in 1 metre length.</p>
4.3	<p>Dimensional Tolerance The dimensional accuracy of any component shall be within + 2mm per metre length.</p>