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SPECIFICATION DATA – Render Applications.

FOAMULAR METRIC 250 EXTRUDED POLYSTYRENE INSULATION
(For use as an alternate external insulation to expanded polystyrene, all grades)

Application External insulation in lightweight construction as substrate for render systems. (Also known as EIFS, external insulation and finishing systems)

Product Name: Owens Corning Foamular metric extruded polystyrene insulation.

Manufacturer: Owens Corning Asia Pacific. Shanghai, China.

Product Description: Closed cell, high density extruded polystyrene insulation.
Suitable for use as the insulation substrate for polymer modified render systems used as external wall cladding.

Foamular Metric's manufacturing process gives it many advantages over expanded polystyrene normally specified for this application.
Benefits are higher density and compressive strength, higher thermal performance, lower moisture absorption. (Moisture absorption lowers thermal performance)

Composition and Materials: Eifs systems are multilayered claddings consisting of the following elements;

- Attachments
- Reinforcement
- Insulation
- Render
- Base coat
- Finish coat

Each element is engineered to enhance the function of the other elements.

Advantages: Systems using polymer modified mesh reinforced render over external insulation give a seam free impact resistant cladding.

Energy efficiency is improved due to insulation envelope minimising thermal bridging.

Standard Systems: There are a number of eifs systems and polymer modified render products available throughout Australia. These systems use similar fixing methods although the individual components may vary slightly. These systems may vary state to state but the basic methodology is the same i.e., a polymer modified render system applied in 2 or 3 coats, reinforced with an alkaline resistant mesh over an insulation substrate (expanded or extruded polystyrene). Mechanically fixed to timber or steel stud wall framing using appropriate screws and nylon/plastic washers. The standard render thickness may vary although 4- 6mm overall thickness is most common.

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TECHNICAL DATA - APPLICABLE STANDARDS

The Australian Standard applicable to Rigid Cellular plastic sheets for thermal insulation is AS 1366 Parts 3 and 4.

Part 3 refers to Rigid cellular polystyrene- moulded (RC/PS – M) commonly known as expanded polystyrene.
Part 4 refers to Rigid cellular polystyrene – extruded (RC/PS – E), Extruded polystyrene.

The following comparisons are from the above standard and are relevant to the use of the materials as an insulation substrate for render applications.

COMPRESSIVE STRENGTH (KPA)

Expanded Grades	SL to M	70 to 105 kPa
Extruded	Class 1 to IV	120 to 240 kPa (minimum)

RATE OF WATER VAPOUR TRANSMISSION (ug/m2s)

Expanded	SL to M	630 to 530
Extruded	1 to IV	150 to 100

THERMAL RESISTANCE / R VALUE (M2K/W) 50mm @ 25°C

Expanded	SL to M	R1.0 to R1.20
Extruded	I to IV	R1.7 to R1.74

These figures are for the insulation alone. Completed wall systems will have higher total value dependant on individual component values.

FIRE INDICEES Ignitability, spread of flame, heat evolved, smoke produced

	(0 - 20)	(0 - 10)	(0 - 10)	(0 - 10)
Expanded	12	0	3	5
Extruded	9	0	1	4
With 4mm poly render	0	0	0	1

(Tested: 40mm eps with 4mm mesh reinforced polymer modified render – Insulclad.)

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RECOMMENDED APPLICATIONS

AS 1366 Part 4 Recommended application of rigid cellular polystyrene – extruded.
Table B1
Class i Suitable for use in limited load bearing application such as wall insulation and as a panel core material.
Class ii Suitable for load bearing applications under floors. Also suitable as a panel core material.
Class iii Suitable for use in load bearing applications, such as under cold storage floors where the highest thermal resistance is required. Also suitable as a panel core material.
Class iv Suitable for use in load bearing applications such as parking decks and protected membrane roof applications.

Notes: All classes are suitable for use where high moisture resistance is required.

FIXING METHOD EXTRUDED POLYSTYRENE.

Used as the external insulation substrate in a polymer modified render cladding system the fixing method is identical to that used for expanded polystyrene.

Mechanical fixing to timber or steel stud frame is by galvanised screws and nylon or plastic washers.

Maximum stud spacing's are 600mm. Insulation of 25 and 30mm thickness can only be used over a brace board of suitable type and thickness.

In wind zone classifications N1 and N2 maximum fixing spacing is 300mm.
In wind zone classifications N3 and C1 maximum fixing spacing is 200mm.

Extruded polystyrene boards bonded/mechanically fixed to concrete or masonry substrates are acceptable in all wind areas.

Disclaimer: This document provides comparative data for extruded polystyrene as an alternative insulation substrate to expanded polystyrene .The data is provided in good faith and has been sourced from Australian Standards. Data for polymer modified render systems has been gathered from render manufactures and render system providers.