

# TECHNICAL DATA SHEET

Permal  
Gloucester

09/03/01 Issue 04

## PERMAGLASS MER 20 GLASS EPOXY LAMINATE FOR ELECTRICAL INSULATION

### FEATURES

- ♦ Halogen free.
- ♦ Meets UL 94 V-0 FR requirements.
- ♦ Low smoke and toxic fume emission.
- ♦ High Comparative Tracking Index.
- ♦ Excellent protection against arcing.

### GENERAL:

Permaglass MER20 is a unique epoxy composite developed for London Underground. Permaglass MER20 offers a very high Comparative Tracking Index and excellent protection against arcing.

Permaglass MER20 is partially compliant with London Underground specification RSE/STD/014 Part 1 : Issue A, Fire and Arc Protection Standard. (Permaglass MER35 is fully compliant with the above standard).

Permaglass MER20 offers UL94 V-O FR requirements, and outstanding results when tested to BS6853 fire precaution specifications.

<u>Properties</u>	<u>Result</u>	<u>Test Method</u>
<b>PHYSICAL:</b>		
Specific Gravity	1.9	BS.2782 Part 6 (602A)
Water Absorption	0.025%	BS.2782 Part 4 (430A)
<b>MECHANICAL:</b>		
Flexural Strength	160 MPa	BS.2782 Part 10 (1005)
Flexural Modulus	16 GPa	BS.2782 Part 10 (1005)
Tensile Strength	90 MPa	BS.2782 Part 10 (1003)
Tensile Modulus	90 MPa	BS.2782 Part 10 (1003)
Tensile Modulus	12 GPa	BS.2782 Part 10 (1003)
Shear Strength	90 MPa	BS.2782 Part 3 (340B)
Compressive Strength	260 MPa	BS.2782 Part 3 (345A)
Charpy Impact	45 KJ/M <sup>2</sup>	BS.2782 Part 3 (359)

<u>Properties</u>	<u>Result</u>	<u>Test Method</u>
<b>ELECTRICAL:</b>		
Electrical Strength	9 kv/mm	BS.2782 Part 2 (221 G)
Insulation Resistance	> 10 <sup>10</sup> Ohms	BS.2782 Part 2 (232)
Volume Resistivity	> 10 <sup>14</sup> Ohm cm	BS.2782 Part 2 (230A)
Surface Resistivity	> 10 <sup>14</sup> Ohms	BS.2782 Part 2 (231A)
Comparative Tracking Index	>600V	BS.5901
<b>FLAMMABILITY:</b>		
Fire Propagation	Sub-Index 1=1.1 Index 1 = 12.5	BS.476 Part 6
Surface Spread of Flame	Class 1	BS.476 Part 7
Three Metre Cube	A <sub>0</sub> (On Max) 3.93	BS.6853
Smoke Emission Test	A <sub>0</sub> (On End) 3.81 A <sub>0</sub> (Off) 4.21	
Flammability Temperature Index Test	>350°C	BS.6853
Underwriters Laboratory Flammability Classification	V-0 M = 2	UL94 NF F 16-101 (102)
Smoke and Toxicity Classification	F = 0	NF F 16-101 (102)

ALL VALUES ARE BASED ON LIMITED TEST RESULTS AND SHOULD NOT BE TAKEN AS INDICATIVE OF MAXIMUM OR MINIMUM VALUES.

**STANDARD SHEET SIZE:**

1220 x 1220

2440 x 1220

(thickness 3mm - 50mm)

Other sizes may be available on request