

FILON[®] mpGRP

Multi Purpose Glass Reinforced Polyester
for permanent and temporary traffic signage



- ▲ For permanent and temporary signage
- ▲ Complies with BS EN 12899:2001 and 2007 part 1 for permanent signs
- ▲ Contains recycled content and is recyclable at end of life
- ▲ Superior strength and rigidity
- ▲ No salvage value, therefore no theft problems
- ▲ Used in marine and other harsh environments
- ▲ High durability, minimum maintenance
- ▲ Purpose designed, patented product
- ▲ Quality Assured to ISO 9001:2008

FILON[®] mpGRP

A new direction for traffic signage...

FILON mpGRP (multi-purpose GRP) brings the unique advantages of glass reinforced polyester (GRP) to the traffic signs marketplace, to offer a range of excellent advantages over conventional aluminium signs.

Signs that don't 'walk'

FILON mpGRP signs have no theft value for potential thieves. They will not melt down and have no intrinsic value to provide illegal funds.

Long term strength and durability with minimum maintenance

FILON mpGRP has been developed to provide high rigidity and strength, combined with lightness and ease of handling. Unaffected by high or low temperatures and by the extremes of European weather, the panels have a minimum lifespan of 12 years.

High impact resistance

FILON mpGRP panels pass the impact test specified under BS EN 12899-1 for road traffic signs.

Minimum surface preparation

Panels only require wiping clean prior to the application of self adhesive vinyl. The panels are coloured grey to eliminate the need to surface paint the reverse face, which is UV protected.

Immune to corrosion

GRP is widely used in marine and other harsh environments. Panels will not rust or corrode from road salt or chemically aggressive conditions which otherwise would result in deterioration of the sign.

Compatible with the reflective films and fixing systems you use

FILON mpGRP is compatible with 3M™ Scotchlite and Nikkalite reflective films and Bollhoff/Henrob riveting systems.

Compliant with regulatory standards

FILON mpGRP meets all the requirements of BS EN12899-1 following accelerated weathering tests. Regulatory and warning signs up to 2m² manufactured in accordance with FILON and NCI guidelines from one sheet of FILON mpGRP are compliant.

Recyclable

FILON mpGRP panels contain recycled content and can be returned to FILON Products Ltd for recycling at the end of their working life.



Passively safe

FILON mpGRP panels have undergone successful testing with passively safe posts at the MIRA (Motor Industry Research Association) test centre in Nuneaton (See photographs below).

From the expert in GRP...

FILON Products has fifty years experience in the manufacturing of Glass Reinforced Polyester (GRP) by continuous pultrusion to provide profiled and flat sheeting for internal and external applications. The outstanding durability of GRP laminates, coupled with high strength and low weight has resulted in their use for many diverse applications from boat hulls to radar domes.





Dimensions & colours

Panel sizes 2440mm (8'0") x 1220mm (4'0")
3050mm (10'0") x 1525mm (5'0")

Panel thickness 3.2mm +/- 5%

Panel colour Sign Grey FPL 966

Other colours and sheet sizes can be produced to meet specific customer requirements subject to a minimum 100 sheet production order quantity.

Performance

Test certified by BSI confirm that FILON mpGRP meets the performance specification under the requirements of BS EN 12899-1

Accelerated weathering:	PASS
Saline mist:	PASS
Sulphur dioxide:	PASS

These tests ensure long term resistance to atmospheric pollutants

Impact resistance:	PASS
Photometric requirements:	PASS
Accelerated weathering tests:	PASS

Wind resistance

Road traffic signs made from FILON mpGRP have been tested in-house for wind resistance as prescribed in BS 12899-1. Results obtained indicate that FILON mpGRP exceeds the required standard with regard to wind resistance.

Typical mechanical values under ISO 178 (formerly BS 2782: Part 3)

Tensile strength:	96-105N/mm ²
Tensile modulus:	6.4 – 7.6kN.mm ²
Flexural strength:	139 – 167N/mm ²
Flexural (bending) modulus:	4.7 – 5.5kN/mm ²
Elongation at break:	1.4 – 1.7%

Other Properties (typical values)

Manufactured to a purpose designed formulation for which a UK patent has been secured: Patent No. GB2258 235B.

Thermal movement co-efficient of linear expansion:	20 x 10 ⁻⁶ per °C
Operating temperature:	-20°C to + 100°C
Density:	1.52g/cm ³
Panel Weight (3.2mm):	5.2kg/m ²
Water absorption (24 hours at 25°C):	0.3%
Dielectric strength (step by step at 90°C):	17450V/mm
Glass content:	33%
Barcol hardness	>50



Sign Construction

FILON mpGRP panels are manufactured with a UV protected surface to the reverse side.

Stiffening & riveting

Support channels may be secured to the back of the panels by the following methods:

BOLLHOFF non-penetrating rivet system (see recommendations below)

Adhesives using 3M 4980 VHB tape or 3M Scotchweld DP 460 (approved for use with FILON mpGRP by 3M)

Support rails

FILON mpGRP has good tensile strength and impact resistance. The nature of GRP is that it is more flexible than aluminium. To obtain the best use and service life it is recommended that the support rails, which provide stiffening, are fixed in accordance with TABLE 1 specifications.

Table 1

Height of sign section (m)	Number of rails	Max Rail Spacing (mm)
0.5	2	400
0.75	3	325
0.90	3	400
1.00	4	300
1.20	4	366
1.50	5	350
1.75	6	380
2.00	7	317
2.25	8	340
2.44	8	335

Support rails should be fixed a minimum of 30mm from the running edge of the sign. If a sheet joining section is to be fitted by means of riveting, the rivet should not be within 15mm of the sheet edge.

FILON mpGRP is available in 3.2mm thickness. When fixing aluminium support rails by means of a non-penetrating rivet system, a maximum rivet spacing of 150mm should be adopted.

Note: FILON mpGRP signs will flex more than aluminium signs of the same size until they are mounted on posts, hence it is advisable to store completed signs flat or with support rails vertical to prevent possible damage to the sign facings.

Bollhoff/Henrob rivet recommendations

Due to the different properties of the aluminium alloy and GRP sign plate used for signs, it is necessary to change rivets for each material thickness as per TABLE 2

- At no time try to rivet within 15mm of the edge of the GRP sign plate.
- Riveting pressure may need to be adjusted to suit the ductility of the materials being riveted.
- It should not be necessary to change the upsetting die or the nose assembly.

Table 2

Rivet part No	R20845CK02	R20845O5
Rivet Length (mm)	8mm	8mm
Total Riveting Thickness (mm)	4.0	6.0
Sign Face	GRP	GRP
Stiffener	Aluminium	Aluminium

Note: These self-piercing rivets are supplied with either a silver or black Kalgard finish and are available from either Bollhoff or Henrob

Cutting & machining

Panels may be cut to shape using either routers, guillotines, lasers or diamond grit saws.

COSHH Regulations

When working in confined spaces adequate ventilation is required. For extensive operations dust extraction is necessary. Operators should wear suitable dust masks and goggles. In isolated cases GRP dust can cause slight transient irritation. Should effects be prolonged or any signs of a rash occur, obtain medical advice. All exposed skin must be thoroughly washed. Any eye contamination must be washed out with copious amounts of pure water. Do not smoke in or near stores of working area.

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