

FILON IsoFil

GRP Sheeting for Water Treatment Plants

Introduction

FILON Isofil is a glass fibre polyester sheet (GRP) manufactured from random glass fibres and either isophthalic polyester or vinyl ester resin. The sheets have been specially formulated for use in water treatment plants and other associated processes.

The sheets are unaffected by constant immersion in water at temperatures from -20°C to 120°C. For operational temperatures above 51°C Filon Products recommends **FILON Isofil HT** (vinyl ester grade).

The heat deformation temperatures of the resin employed in FILON Isofil sheets is 40 per cent higher than the conventional orthophthalic resin normally used in GRP. Isophthalic resins are noted for their high chemical resistance and low water absorption. Vinyl ester resins are noted for their high heat distortion temperature and exceptional chemical resistance, particularly towards chloride containing media or organic solvents.

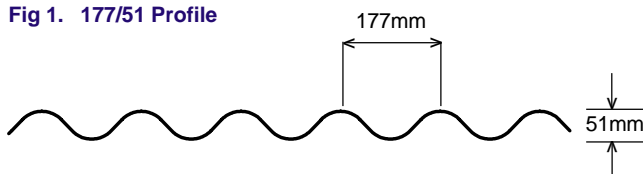
Sheets are manufactured from **Norpol 720/700 Isophthalic resin or Norpol DION VE1062 Vinyl Ester resin, both supplied by Reichhold UK** and reinforced with 'E-Glass' fibres.

Sheets are manufactured in a continuous controlled process which ensures a constant uniform product.

Product Range

FILON Isofil sheets are supplied in translucent material with a nominal thickness of 1.2mm. They are available in both flat panels, and profile sheets as illustrated in **Fig. 1**, in lengths to suit individual applications.

Fig 1. 177/51 Profile



Applications

FILON Isofil sheets are suitable for oil/water separators, micro flotation processes, crossflow separators, biological waste processing, and for similar applications.

Sheets have been formulated for specific applications and they should not be used for roofing or cladding without reference to Filon Products Ltd.

Performance

Structure and Mechanical : Typical Values

	ISOFIL Isophthalic	ISOFIL HT Vinyl ester
Tensile Strength (BS 2782 Part 3)	129N/mm ²	94N/mn ²
Elongation E Break	1.4%	1.0%
Initial Flexural Strength (BS 2782 Part 3)	223N/mm ²	170N/mm ²
Flexural Strength after immersion for 2 hours in boiling water (BS 2782 Part 3)	192N/mm ²	160N/mm ²
Strength Retention	86%	94%
Flexural (Bending) Modulus (BS 2782 Part 3)	7.8KN/mm ²	7.0KN/mm ²
Flexural (Bending) Modulus Strength after 2 hours in boiling water (BS 2782 Part 3)	6.6KN/mm ²	6.9KN/mm ²
Strength Retention	85%	98%
Barcol Hardness	50-55	60-65
Thermal Movement Coefficient of Linear Expansion	20 x10 ⁻⁶ per °C	
Operating Temperatures (Atmospheric)	-20 to+50°C	-30 to +120° C
Operating Temperatures (Constant immersion in hot water)	Up to +50°C	+51 to +120°C
Water Absorption (24 hours at 20°C)	0.29%(10mg)	0.27% (10mg)
Water Absobtion (7 days at 20°C)	0.53%(19mg)	0.64%(24mg)
Density	1.480g/cm ³	
Glass Content	30% by weight	

Re-working and Machining

During re-working and machining dust can be generated. The concentration of dust should be kept as low as is reasonably practical and certainly below the **Occupational Exposure Limits (10mg/m³ total inhalable dust and 4mg/m³ respirable dust - 8 hour TWA values)**.

For work indoors or confined spaces, adequate ventilation should be provided.

For extensive operations dust extraction equipment should be used.

Operators should wear a suitable dust mask and goggles.

In some 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 with soap and water. Any eye contamination must be washed out with copious amounts of water.

Technical Services

Technical and advisory services are available from Area Sales Managers or from Filon Technical Services Department.

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