

Polystal® - GRP P115

High-performance composite profiles

Polystal® GRP is a composite of glassfibres and synthetic resin. The distinctive Polystal® surface is sealed with resin and lubricant free owing to the state-of-the-art manufacturing procedure. The material can thus be easily up-jacketed with thermoplastics and offers the most excellent processing performance.

PHYSICAL PROPERTIES

Glass Content	(%)	80 ± 2.5 %	(DIN EN ISO 1172)
Density	(g/cm ³)	2.1	(DIN 53479)
Modulus of elasticity	(N/mm ²)	> 50,000	(DIN EN ISO 527-4)
Tensile strength of area	(N/mm ²)	1,500 ± 5 %	(DIN EN ISO 527-4)
Elongation at break	(%)	> 2.5	(DIN EN ISO 527-4)
Ovality	(%)	< 6	
Coefficient of Thermal Expansion (CTE)	(1/°C)	6.6 x 10 ⁻⁶	(DIN ISO 7991)
Absorption of Water	(%)	≤ 0.1	(DIN EN ISO 62)
Electrical Resistance	(Ω cm)	1.6 x 10 ¹⁶	(ASTM D 257)
Electrical Surface Resistance	(Ω)	1.3 x 10 ¹⁴	(ASTM D 257)
Dielectric Coefficient at 1 MHz	(E _r)	4.9	(ASTM D 150)
Loss Factor at 1 MHz	(tan δ)	0.0093	(ASTM D 150)

CHARACTERISTIC VALUES

Outside Diameter (tolerance)	(mm) (inches)	11.50 (± 0.20) 0.45276 (± 0.00787)	
Performance Diameter	(mm) (inches)	11.50 0.45276	
Weight	(g/m)	222.00 ± 4 %	
Force at Break	(N)	155,724* ± 5 %	(DIN EN ISO 527-4)
Tensile Force at 0.5 % Elongation at 1.0 % Elongation	(N) (N)	24,864 49,728	(DIN EN ISO 527-4)
Minimum Bend Diameter at 25 °C	(mm) (inches)	1,150.0 45.27550	
Longtime Flexion Test at 1 % RFD and 80 °C after 24 h at 2 % RFD and 25 °C after 24 h		without break or delamination without break or delamination	Siemens-Method

RFD Strain of the edge fibers

*calculated value

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