

PERMASTRUCT®

Alternative, Clever

HANDRAIL ROUND 7MM

PermaStruct® FRP Handrails are the ultimate industrial railing for a wide range of applications. PermaStruct® FRP Handrails are far superior in performance and life cycle cost compared to traditional materials.



For illustration purposes only

NON CONDUCTIVE. LIGHTWEIGHT. CORROSION RESISTANT. LOW MAINTENANCE

Please ensure you download and read a copy of the **PermaStruct® Handrail** guide prior to, and during your fabrication. Failure to do so will void your warranty.

You can download the Handrail guide by scanning the QR Code or visiting <https://www.permacomposites.com/permastruct/resources/technical-information/>



Type: PermaStruct® Handrail Round 7mm

Product specifications:

Product code:	SHR50Y3000
Length:	3000 mm
Depth (d1):	50 mm
Width (d2):	7 mm
Thickness (t):	
Resin:	Isophthalic (ISO)
Colour:	Yellow RAL 1003
Weight:	

PermaStruct® FRP products are not limited to the colours, sizes and resin types and can be custom ordered in your preferred choice.

Dimensions may vary by ± 3 mm due to manufacturing tolerances.

Mechanical Properties

Property	Value	Unit	ASTM
Tensile Strength (LW)	280	MPa	D368
Tensile Strength (CW)	50	MPa	D638
Tensile Modulus (LW)	21.5	GPa	D638
Tensile Modulus (CW)	6	GPa	D638
Flexural Strength (LW)	300	MPa	D790
Flexural Strength (CW)	80	MPa	D790
Flexural Modulus (LW)	21	GPa	D790
Flexural Modulus (CW)	6	GPa	D790
Compressive Strength (LW)	285	MPa	D695
Compressive Strength (CW)	80	MPa	D695
Compressive Modulus (LW)	19.5	GPa	D695
Compressive Modulus (CW)	7.5	GPa	D695
In-Plane Shear Modulus	3.5	GPa	D7078
Short Beam Shear Strength	29	MPa	D2344
Min. Pin-bearing Strength	150	MPa	
Breaks Shearing Strength	44	MPa	D732
Impact Strength	200	KJ/mm ²	D256
Poissons Ratio (LW)	0.35		D3039
Poissons Ratio (CW)	0.2		D3039
LW: Lengthwise		CW:Crosswise	

Physical Properties

Property	Value	Unit	ASTM
Density	1750-1900	kg/m ³	D792
Barcol Hardness	45		D2583
Glass Transition Temp	110	°C	D7029
Coefficient of Thermal Expansion (LW)	12	mm/mm/°C	D696

Chemical resistance list

Chemical environment	Concentration %	Temp in °C
Acetic acid	50	30
Aluminium hydroxide	All	45
Ammonium bicarbonate	All	No
Ammonium chloride	All	82
Ammonium sulphate	All	60
Aqueous ammonia	28	30
Benzene		No
Benzoic acid	All	65
Chromic acid	20	No
Copper chloride	All	65
Copper cyanide	All	No
Ethylene glycol	100	65
Ferric chloride	All	65
Ferrous chloride	All	60
Gasoline	100	60
Glucose	100	38
Glycerine	100	65
Hydrobropic acid	25	38
Hydrochloric acid	<10	52
Hydrochloric acid	20	38
Hydrochloric acid	37	No
Lactic acid	100	52
Manganese sulphate	All	65
Sodium hydroxide	10	20
Sodium hydroxide	25	No
Sodium hydroxide	50	No
Nitric acid	5	48
Phosphoric acid	85	65
Potassium dichromate	100	60
Potassium nitrate	All	65
Sulfuric acid	25	52
Water (fresh)	100	70

"All" in the concentration column refers to concentrations from 0-99 in water.

"100" in the concentration column refers to concentrations of pure chemicals.

Although the greatest care was taken to compile this datasheet, all values and specifications are specifications of performance and are subject to verification by the production of certified test results of actual products manufactured pursuant to any order.