

Glass-Fused-to-Steel Ethanol Storage

Product Description

BIOTANQ® is a registered Trade Name of Permastore Limited internationally recognised as the world's leading sectional bolted Glass-Fused-to-Steel tank & silo manufacturer, the modular design and build concept provides flexibility for rapid construction, ease of transportation to site and the ability to re-model, extend, dismantle and relocate.

Glass-Fused-to-Steel is the fusion of two materials combining the strength and engineering flexibility of steel with the corrosion resistance of glass.

The high temperature fusion process takes place within the range of 650 °C - 870 °C and is applied to both sides of the tank sheet resulting in an inert and durable finish.

Glass-Fused-to-Steel Inspection Data

Test	Specification	Minimum Inspection Frequency	Inspection Method
Inside Surface Inspection			
Inside surface – high voltage discontinuity test	Zero discontinuities	Every panel	EN 14430 - Test A
Inside surface - inspection of glass thickness	Maintained in the range from 280µm to 460µm	In accordance with ISO 2859 Part 1	EN ISO 2178
Outside Surface Inspection			
Outside surface - inspection of glass thickness	Maintained in the range from 250µm to 500µm	In accordance with ISO 2859 Part 1	EN ISO 2178
Outside surface - inspection of glass colour	Maximum allowable tolerances: L : ± 2, a : ± 3 & b : ± 4	In accordance with ISO 2859 Part 1	Calibrated colour comparator

Glass-Fused-to-Steel - Chemical Resistance and Physical Properties – In Accordance with ISO 28765

Inside Surface Test	Test Standard	Quality Specification	Minimum Test Frequency
Chemical Resistance			
Citric acid at room temperature	EN 14483-1:2004 Clause 9	Class A	Monthly
Boiling citric acid	EN 14483-2:2004 Clause 10	Maximum weight loss 5g/m ² after 2½ hours	Annually
Boiling distilled or demineralized water Liquid phase	EN 14483-2:2004 Clause 13	Maximum weight loss 5g/m ² after 48 hours	Annually
Hot sodium hydroxide	EN 14483-4:2004 Clause 9	Maximum weight loss 7g/m ² after 24 hours	Annually
Physical Properties			
Impact	ISO 4532, 20N force	Maximum cracking 2mm after 24 hours	Monthly
Adherence level	EN 10209: Annex D	Class 2	Monthly
Scratch hardness	EN 101	Mohs 5	Monthly

Contact Sealant Immersion Testing and Technical Product Data

Test	Test Results	Test Method
Immersion Resistance Testing		
Immersion bead peel adhesion test with E100 ethanol	Grade 1	DIN 54457
Technical Product Data		
Shore A-hardness	20 approx.	ISO 868
Tensile strength	1.5 N/mm ² approx.	ISO 8339
E-modulus	0.3 N/mm ² at 100% elongation approx.	ISO 8339
Elastic recovery	>90%	ISO 7389

Ancillary Contact Items Immersion Testing Data

Material / Finish	Tested in Accordance with Standard
Viton gasket material	ASTM D2000
Polypropylene material	ASTM D543 & ASTM D570
Glass flake vinyl ester finish	LP Specification T4 (modified) & EPA-PG6/23 Compliant

Further Information

For additional information on BIOTANQ[®] Glass-Fused-to-Steel products please visit our website:
www.biotanq.com

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