

Strongwell offers a broad range of FRP (Fiber Reinforced Polymer) guardrail/handrail systems, in addition to its full line of molded and pultruded FRP grating, structural shapes, and fabricated structures. Strongwell's fiberglass products are an ideal solution for your offshore needs.

SAFRAIL™ Guardrail/Handrail is American Bureau of Shipping (ABS) Type Approved per certificate # 18-HS1773291-PDA (for 2" Square and 1.9" Round configurations), and is available in Polyester, Vinyl Ester, or Phenolic resin systems. As a full-FRP system (now including internal fixed and adjustable connectors), SAFRAIL™ Guardrail/Handrail meets or exceeds numerous safety standards (see next page for more details).



The introduction of SAFRAIL™ Phenolic Guardrail/Handrail is a dramatic innovation for markets where fire safety is a major concern; offering superior corrosion resistance, resistance to high temperatures, low smoke, and low toxic fume emissions¹. The nonflammable nature of phenolics enable this guardrail/handrail to withstand higher temperatures than traditional FRP products for extended periods of time without major structural damage. Combined with very low thermal conductivity, SAFRAIL™ Phenolic Guardrail/Handrail offers the best strength-to-weight ratio for projects that require maximum weight optimization with fire protection not available from alternative materials.

SAFRAIL™ Phenolic Guardrail/Handrail is an excellent match for use with Strongwell's DURAGRID® Phenolic Grating, the first composite grating to receive U.S. Coast Guard approval for Level 2 (L2) installations.

¹ Toxicity levels comply with IMO

PERFORMANCE STANDARDS	TEST SUMMARY
OSHA 1910.29 (U.S.)	200 lb or 50 lb/ft
BS 14122-3 (U.K.)	300 N/m (20.6 lb/ft) with deflection limited to 30mm (1.18")
NORSOK C-002 and N-003 (Norway)	1.0 kN (225 lb) or 1.5 kN/m (100 lb/ft)
ASTM E985 (International)	890 N (200 lb) or 730 N/m (50 lb/ft) with deflection limited to $[h/24 + L/96]$
AS 1657 (Australia)	550 N (125 lb) or 330 N/m (22.6 lb/ft)
AFNOR NF E 85-101 (PETROBRAS)	Total Horizontal Load of 400 lb at three locations or 600 N/m (41.1 lb/ft); Total Vertical Load of 225 lb at two locations; Horizontal Dynamic Test of 180 J

TESTING STANDARDS	RESULT SUMMARY
ASTM E84 (Flame Spread)	Class 1 flame rating of 25 or less
ASTM D256 (Izod Impact)	Performed between 20°C and -160°C
ASTM D638 (Tensile Properties)	Stress and Modulus vary with resin and profile
ASTM A112 (UV Degradation)	Tensile Strength Retained = 99.5% Impact Strength Retained = 98.4%

For more information about these certifications and how to use Strongwell's Offshore Guardrail/Handrail offerings in your next project or refurbishment job, please contact Strongwell directly or visit www.strongwell.com.



Orange SAFRIL™ being field fabricated by factory trained installers in the South China Sea. Square tube handrails are easily field fabricated, however, round tube handrail is more difficult and should be fabricated in a qualified shop.



A three meter section of assembled round tube SAFRIL™ can be easily lifted with one hand.

BENEFITS OF STRONGWELL FRP



WON'T RUST, ROT, OR CORRODE



EASY TO INSTALL



VIRTUALLY MAINTENANCE FREE



UV & IMPACT RESISTANT



LIGHTWEIGHT



STRONG



SAFE IN EXTREME COLD



LOW ELECTRICAL & THERMAL CONDUCTIVITY



STRONGWELL

ISO 9001 Quality Certified Manufacturing Plants



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