Parameter	Details
Material Composition	Resin: Isophthalic polyester/vinyl ester Reinforcement: E-glass fiber layers with unidirectional roving Surface Treatment: UV-resistant gel coat or textured finish
Beam Height	50–300 mm (standard) Customizable up to 500 mm for heavy-duty applications
Flange Width	50–150 mm (adjustable based on load requirements)
Web Thickness	5–15 mm (optimized for shear strength)
Tensile Strength	600–1,000 MPa (dependent on fiber orientation and resin grade)
Flexural Strength	500–900 MPa
Compressive Strength	350–600 MPa
Chemical Resistance	Resistant to acids (H_2SO_4, HCl), alkalis (NaOH), solvents, and saltwater
Temperature Range	Continuous: -40°C to +120°C Short-term peak: +150°C
Fire Retardancy	ASTM E-84 Class A (flame spread ≤25) UL94 V-0 compliant
Weight	1.8–3.0 g/cm³ (70–80% lighter than steel)
Certifications	ISO 9001, ASTM D3918, DNV/ABS marine standards, RoHS compliance
Color Options	Standard: Gray, Black, Beige Customizable: RAL/Pantone-matched colors
UV Stability	UV-inhibited resin for outdoor durability (10+ years without degradation)

Key Technical Advantages:

- **High Load-Bearing Capacity**: Ideal for bridges, marine platforms, and industrial frameworks requiring lightweight structural support.
- **Corrosion-Free Performance**: Suitable for harsh environments like chemical plants, offshore platforms, and wastewater treatment facilities.
- **Non-Conductive & EMI-Resistant**: Safe for electrical substations, telecommunication towers, and rail electrification systems.
- **Modular Design**: Pre-drilled holes and standardized profiles for rapid assembly and integration with FRP grating systems.