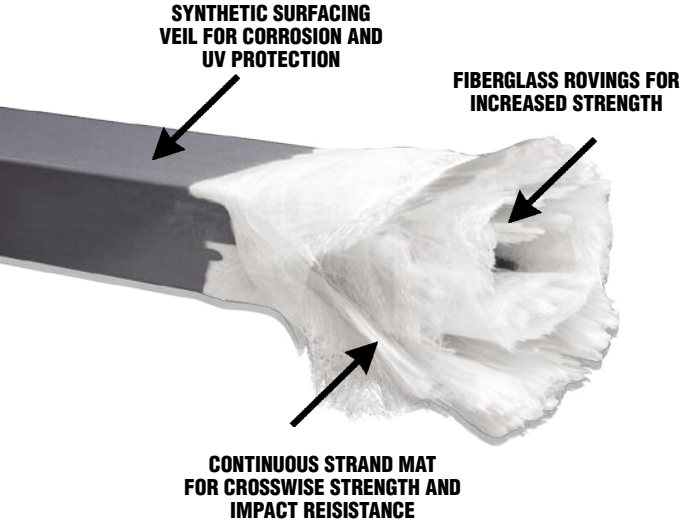
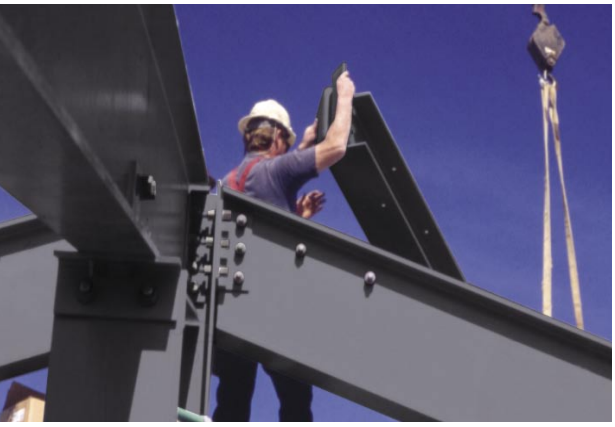
COMPARE

EXTREN® vs. STEEL

GEF Incorporated, 6497 Winfield Road, Winfield WV 25213 (304) 755-1600





Unlike steel, which will rust when exposed to weathering and chemicals, EXTREN® fiberglass structural shapes are highly corrosion resistant.

Strongwell combines superior raw materials, composite design, and the pultrusion process to manufacture EXTREN® — the highest quality pultruded fiberglass structural shapes available.

EXTREN® fiberglass structural shapes offer superior:

- **STRENGTH** — Stronger than steel, pound-for-pound in lengthwise direction
- **CORROSION RESISTANCE** — Resists most acids, caustics and salts
- **LIGHTWEIGHT** — Weighs 25% as much as steel
- **LOW MAINTENANCE** — Provides long-term, cost effective solutions

In addition, EXTREN® is:

- **DIMENSIONABLY STABLE**
- **EMI/RFI TRANSPARENT**
- **FIRE RETARDANT** — EXTREN® can utilizing a fire retardant isophthalic polyester or vinyl ester resin system. EXTREN® contains **UV INHIBITORS** and can be custom manufactured in special **COLORS**.

For more EXTREN® design information, visit www.strongwell.com/designmanual for the online Strongwell Design Manual!

Is EXTREN® the best material choice to meet the requirements of your application?

Turn over to compare the features of EXTREN® and steel structural shapes on a point-for-point basis!

COMPARE!	EXTREN® FIBERGLASS STRUCTURAL SHAPES	VS.	STEEL A-36 CARBON
CORROSION RESISTANCE	EXTREN® is available in either polyester or vinyl ester resin for resistance to a broad range of chemicals. Painting may be necessary when exposed to direct sunlight to prevent color fading.		Subject to oxidation and corrosion. Requires painting or galvanizing for many applications.
WEIGHT	Lightweight — weighs 25% as much as steel. 1/2" thick plate = 4.7 lbs./sq. ft.		Could require lifting equipment to move and place. 1/2" thick plate = 20.4 lbs./sq. ft.
CONDUCTIVITY	Low electrical conductivity properties — high dielectric capability. Low thermal conductivity 4 (BTU/SF/HR/F°/IN).		Conducts electricity. Potential Shock Hazard. Thermal Conductivity 260-460 (BTU/SF/HR/F°/IN).
STRENGTH	EXTREN® has a high strength-to-weight ratio and pound-for-pound is stronger than steel in the lengthwise direction. Tensile Strength = 30 KSI, CW = 7 KSI		Homogeneous material. Tensile strength = 60 KSI Yield strength = 36 KSI
STIFFNESS	Modulus of Elasticity = 2.5 MSI Will not permanently deform under working load.		Flexural modulus = 29 KSI Modulus of Elasticity = 29 MSI
IMPACT RESISTANCE	Glass mat in EXTREN® distributes impact load to prevent surface damage. Will not permanently deform under impact.		Can permanently deform under impact.
EMI/RFI TRANSPARENCY	Transparent to EMI/RFI transmissions.		Can interfere with EMI/RFI transmissions.
VERSATILITY	Pigments added to the resin provide color throughout the part. Special colors available.		Must be painted for color. To maintain color and corrosion resistance, repainting may be required.
EASY FIELD FABRICATION	EXTREN® can be field fabricated using simple carpenter tools with carbide or diamond tip blades. Lightweight for easier erection and installation.		Often requires welding and cutting torches. Heavier material requires special handling equipment to erect and install.
COST	Lower installation and maintenance costs in industrial applications often equals lower lifecycle costs.		Lower initial cost.

THE CHOICE! EXTREN® Fiberglass Structural Shapes and Plate!

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