GRP vs Traditional Materials

ENGINEERED COMPOSITES
STRENGTHENING INDUSTRY

Compare	GRP	Steel	Aluminium	Timber
Corrosion Resistance	**Excellent Corrosion Resistance** Can be designed to suit most chemical environments	**Low Corrosion Resistance** Subject to oxidation and corrosion. Requires painting or galvanizing.	**Low Corrosion Resistance** Subject to galvanic corrosion. Requires anodizing or other coatings	**Low Corrosion Resistance** Can warp, rot and decay from exposure to moisture, water and chemicals. Requires coating or preservatives.
Weight	**Lightweight** (up to 80% lighter than steel & approx. 30% the weight of aluminium)	**Extremely Heavy** Requires heavy lifting gear to manoeuvre.	**Lightweight** (about 1/3 that of copper or steel)	**Dependent on size**
Slip Resistance For Flooring	**Extremely High Slip Resistance** Engineered Composites integral grit finish offers slip resistance for a walking surface even in wet or oily conditions	**Little or No Slip Resistance** A major health & safety risk for companies	**Little or No Slip Resistance** A major health & safety risk for companies	**Little or No Slip Resistance** A major health & Safety risk for companies
Conductivity	**Non-Conductive** No earthing required	**Conducts Electricity** Earthing required	**Conducts Electricity** Earthing required	**Non-Conductive** No earthing required
Strength	**High Strength-to-Weight Ratio** Stronger than steel on a kg-for-kg basis	**High Strength** Heavy in weight to achieve its high strength properties	**Low Strength**	**Dependant on Size** To achieve reasonable strength properties product sizes have to be extremely large
Impact Resistance	**High Impact Resistance** Will not permanently deform under impact	**Medium to Low Impact Resistance** Can permanently deform under impact	**Low Impact Resistance** Easily deforms under impact	**Medium to Low Impact Resistance** Can permanently deform under impact
Fabrication	**Easily Field Fabricated** Can be easily field fabricated using simple carpenter tools with carbon or diamond tip blades. Lightweight for easier erection and installation.	**Fabrication more Complex** Often requires welding and cutting torches. Heavier material requires special handling equipment to erect and install.	**Fabrication more Complex** Welding, brazing, soldering or mechanical joining required.	**Easily Fabricated** Fabricated using tools such as jigsaws and circular saws.
Maintenance	**Maintenance Free** GRP has a design life of 50 years	**Constant Maintenance Required** Due to rust, damage, or re-painting. High cost implications.	**Constant Maintenance Required** Due to rust, damage, or re-painting. High costs implications.	**Constant Maintenance** Due to rot, decay, re-painting, or insect attacks. High cost implications.
Cost	**Long Term Cost Savings** Lower installation and maintenance costs in industrial application = very low lifecycle costs.	**Low Cost, High Maintenance** Lower initial material cost, however costly to maintain. High lifecycle costs.	**Low Cost, High Maintenance** Lower initial material cost, however costly to maintain. High lifecycle costs.	**Low Cost, High Maintenance** Lower initial material cost, however costly to maintain. High lifecycle costs.
Ergonomic	**Good Ergonomic Properties** The innate elasticity of GRP provides comfort to workers as it has a slight 'give' underfoot.	**No Ergonomic Properties** Steel does not provide comfort underfoot. Can lead to back ache for workers who are on-foot for long periods of time.	**No Ergonomic Properties** N/A	**Good Ergonomic Properties** Provides comfort underfoot
EMI/RFI Transparency	**Transparent to EMI/RFI transmissions**	**Can interfere with EMI/RFI transmissions**	**Can interfere with EMI/RFI transmissions**	**Transparent to EMI/RFI transmissions**
Aesthetics	**Pigments added to Resin** The pigments provide colour throughout the part. No maintenance required. Bespoke colours available.	**Painted or Dyed for Colour** To maintain colour and corrosion resistance, repainting may be required.	**Painted or Dyed for Colour** To maintain colour and corrosion resistance, repainting may be required.	**Primed and Painted for Colour** To maintain colour and corrosion resistance, repainting may be required

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