

FRP pultruded profile VS Aluminum

	FRP pultruded profiles	Aluminum
Corrosion Resistance	Resistance to water, chemicals. No need painting, etc.	Subject to oxidation and corrosion. Non-resistance to water, chemicals. Requires painting or galvanizing to attain the capacity of anti-corrosion.
Weight	Light weight, about three quarters that of aluminum	Light weight, about one third that of copper or steel.
Electric conductivity	Does not conduct electricity.	Conducts electricity Often be used for grounding potential.
Thermal conductivity	Low thermal conductivity. 0.2-0.5 W/(m·K)	High thermal conductivity. 203 W/(m·K)
Strength	Stronger than aluminum in lengthwise direction. Ultimate flexural strength: LW is about 300 MPa CW is about 70 MPa	Homogeneous material Flexural strength is about 200-280 MPa
Impact resistance	Glass mat in pultruded parts, distributes impact load to prevent surface damage even in sub-zero temperatures. Will not permanently deform under impact.	Low impact resistance Can permanently deform under impact.
Appearance	The selection of color is achieved by adding different pigments in the matrix of resin. No need the second coating. Maintenance is free. Special surface can be customized.	Sliver. Other colors can be attained by painting and electroplating.
EMI/RFI Transparency	Transparent to EMI/RFI transmissions. Can be applied to the cover of random and antenna.	Highly reflective to the transmission of EMI/RFI.
Fabrication	Cutting and drilling and other processing can be done by using simple carpenter tools with carbon or diamond tip. Utilizes adhesive bonding and/or mechanical joining. No torches or welding.	Good machinability - welding, brazing, soldering or rmechanical joining.
Cost	The material cost is a little higher than processing fee.	Similar or slightly lower to FRP pultruded profiles.