

XSPAR™ CARBON FIBER REINFORCED POLYURETHANE PULTRUDED PROFILE

DESCRIPTION

XSpar™ CFRPU Profile is the 4.9mm thick Carbon Fiber Reinforced Polyurethane Pultruded Profile designed for structural strengthening and superior performance in infrastructure, marine, transportation, and other applications. This profile provides excellent mechanical properties, resulting in lightweight, durable material for structural and functional purposes.

Parameter	Unit	Value
Matrix		Polyurethane
Fiber		Carbon Fiber -
Standard Modulus		
Fiber orientation		Longitudinal
Appearance *1		Black/Gray
Length*2	m	min: 1 m; max 300 m
Width*2	mm	min: 80 mm; max: 204 mm
Thickness	mm	4,9 ± 5 %
Linear Weight	g/m	640-1000
Straightness Across Length x: length (m)	mm	max: 0.18 % * x* 1000
Moisture Retention @ 60 days	%	1
E x A (modulus*cross section area) @100 mm width	kN	78400
Density	g/cm ³	1,55
Flexural Modulus	GPa	130
Flexural strain to failure*3	%	0,9
Tensile Modulus	GPa	150-160
Tensile Strength	MPa	1500
Tensile strain to failure*3	%	0,85
Compressive Modulus	GPa	134
Compression Strength	MPa	1000
Compressive strain to failure*3	%	0,8
Transverse Flexural Strength	MPa	60
Transverse Flexural Modulus	GPa	8
Interlaminar Shear Strength	MPa	60
Tg (DMA tan delta)	°C	80-90

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

*1Apperance may change

*2 Length and Width may be changed as per customer request

*3 These values must be adapted to local design regulations as necessary and depend on the user's structure design structure and load parameters.

Mechanical values are obtained in 0° longitudinal direction of the fiber (except for Transverse Flexural Strength and Transverse Tensile Strength).

Packaging and Delivery

Aksa Carbon CFRPU Profile is covered with nylon peel ply on top and bottom sides and each 5 pcs laminates are stacked by plastic straps. Peel ply should be removed on each side before the use. Packaging appearance including, but not limited to, any damage of peel ply or any other peel ply related issue does not constitute a defect of this product.

Safety and Handling

It's strongly recommended to follow all local regulations on safety during handling this product including, but not limited to, protection equipment and measures required during the cutting operations. If required, this product may be protected with fire resistant material. Galvanic protection may be required depending on the user's design and application of this product. Carbon fiber and its dust are electrically conductive. Thus, there is a need to have special sealing for electrical equipment if there will be any profile cutting process performed.

Warning: Before using strong acids agents that could lead to degradation of this profile, consult sources knowledgeable in handling such materials.

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