

EUROPLEX® Sheet GV 181

Polycarbonate

Evonik Industries AG

Message:

EUROPLEX® GV 181 is a glass-fiber-reinforced polycarbonate sheet material. It exhibits special physical properties, particularly in relation to physical strength and heat expansion because of the way the glass-fibers are oriented in the extrusion process. The captivating properties are:

high stiffness (modulus of elasticity parallel to the extrusion direction: 4,400 MPa)

excellent thermostability

good dimensional stability

high impact strength

weathering resistance, which can be further improved by painting

Applications

EUROPLEX® GV 181 sheets are used wherever both weight (only half as heavy as aluminum) and high dimensional stability are of major concern (structural components, paneling, etc.). In fuselage construction (helicopter manufacture), this property provides convincing advantages. The lower weight can also result in fuel savings. The sheets are also used in building construction and for molded parts that have to meet load-bearing requirements.

General Information			
Filler / Reinforcement	Glass Fiber, 20% Filler by Weight		
Features	Good Chemical Resistance		
	Good Dimensional Stability		
	Good Impact Resistance		
	Good Thermal Stability		
	Good Weather Resistance		
	High Stiffness		
Uses	Aircraft Applications		
	Building Materials		
Forms	Sheet		
Processing Method	Vacuum Forming		
Physical	Nominal Value	Unit	Test Method
Density	1.34	g/cm ³	ISO 1183
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			ISO 527-2
-- 1	2900	MPa	
-- 2	4400	MPa	
Tensile Stress			ISO 527-2
-- 3	60.0	MPa	
-- 4	72.0	MPa	
Tensile Strain (Yield)	4.5	%	ISO 527-2
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength	50	kJ/m ²	ISO 179
Thermal	Nominal Value	Unit	Test Method


Vicat Softening Temperature	145	°C	ISO 306
CLTE			ISO 11359-2
Flow	4.0E-5	cm/cm/°C	
Transverse	7.0E-5	cm/cm/°C	
Maximum Service Temperature	100	°C	
NOTE			
1.	Transverse		
2.	Longitudinal		
3.	Transverse		
4.	Longitudinal		

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Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519
 Phone: +86 13424755533
 Email: sales@su-jiao.com
 No. 215, Lianhe North Road, Fengxian District, Shanghai, China



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