

# EUROPLEX® Solid Sheet

## EUROPLEX® GV 183 sheets

**EUROPLEX® GV 183 sheets are only half as heavy as aluminum.**

EUROPLEX® GV 183 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 183 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.

### Chemical resistance

EUROPLEX® GV 183 is resistant to mineral acids in high concentrations, many organic acids, oxidizing and reducing agents, neutral and acidic salt solutions, many greases and oils, saturated aliphatic and cycloaliphatic hydrocarbons, and alcohols (excluding methyl alcohol).



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### Forming

Infrared heating and vacuum forming are ideally suited for this processing technology. We recommend pre-drying at 120°C to achieve a consistent quality during forming. It is also important to note that the heat expansion in the extrusion direction differs from that in the transverse direction. In the interest of good dimensional accuracy of the molded parts, it is therefore necessary to form the blanks every time in the same position (placed in the extrusion direction or transverse to this direction). It is advisable to mark the blanks so that they will always be inserted into the forming die in the same direction.

### Physical properties

Property	Test method	Unit	Typ. value
Density	ISO 1183	g/cm <sup>3</sup>	1.34
Vicat	ISO 306	°C	145
Max. service temp.		°C	100
Modulus of elasticity	ISO 527	MPa	4,400*/ 2,900*
Tensile strength	ISO 527	MPa	55/40
Tensile elongation	ISO 527	%	3
CHARPY impact strength	ISO 179	KJ/m <sup>2</sup>	50
Glass-fiber content	ISO 3451-1	%	20
Linear heat expansion	ISO 11359	0.0001/K	0,45*/ 0,60**

\* longitudinal to the extrusion direction

\*\* transverse to the extrusion direction

### Sales Range EUROPLEX® GV 183 sheets

Property	Value
Thickness	1.5 mm 2.0 mm 3.0 mm 4.0 mm
Width	1,400 mm
Length	up to 3,000 mm
Color	natural/translucent

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® = registered trademark

EUROPLEX is a registered trademark in EU and a filed trademark in US of Röhm GmbH, Darmstadt, Germany.

Certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment)

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