

# Laminates



## PARA-LITE PGR 20

- **High pressure laminate with very high impact strength. Therefore, suitable for ballistic applications**
- **Low smoke emission in case of fire. Applicable as fire protection in construction sector**
- **Certified acc. to EN 45545-2: 2020-02, R1**

### General description

PARA-LITE PGR 20 is a laminate based on special phenolic resin and E-glass roving.

### Color

Yellow brown

### RoHS Directive

Hazardous products listed in the EU-directive 2011/65/EU (RoHS-directive), annex II, are not used as ingredients in this material.

### Application

Ballistic protection  
Construction sector

### Form of delivery

Sheet formats  
2070 x 1070 mm  
4200 x 1250 mm  
Tolerance of formats 0 / - 30 mm

Thickness in range of 0.5 to 30 mm

Thickness tolerances to be agreed

Material available as cut to size panels and machined parts. Other dimensions and thicknesses on request.

### Machining

Machining with carbide or diamond tools.

For water jet cutting we recommend adding silica sand to the water and to drill through-holes prior to machine.

|                                    | Unit               | Value          | Test norm            |                      |
|------------------------------------|--------------------|----------------|----------------------|----------------------|
| Mechanical properties              |                    |                |                      |                      |
| Flexural strength at 23°C          | MPa                | 220            | ISO 178              |                      |
| Modulus of elasticity at 23°C      | MPa                | 22000          | ISO 178              |                      |
| Impact strength (Charpy), //       | KJ/m²              | 350            | ISO 179              |                      |
| Compressive strength<br>⊥, at 23°C | MPa                | 550            | ISO 604              |                      |
| Tensile strength                   | MPa                | 350            | ISO 627              |                      |
| Thermal properties                 |                    |                |                      |                      |
| Temperature index                  | °C                 | 120            | IEC 60216            |                      |
| Thermal conductivity               | W/ m K             | 0.6            | DIN 52612            |                      |
| Coefficient of thermal expansion   | 10E-6/ K           | 15             | VDE 0304             |                      |
| Physical properties                |                    |                |                      |                      |
| Density                            | g/cm³              | 2.15           | ISO 1183             |                      |
| Water absorption                   | mg / %             | 200 / 0.70     | ISO 62               |                      |
| Other properties                   |                    |                |                      |                      |
| Flammability                       | V-0                | ≥ 5 mm         | UL 94                |                      |
| STANAG 2920 – 1,1g Splinter        | V-50 (m/s)         | Distance (m)   | Areal weight (kg/m²) |                      |
| Material thickness                 |                    |                |                      |                      |
| 6 mm                               | 470                | 2.5            | 12,9                 |                      |
| 9 mm                               | 655                | 2.5            | 19,3                 |                      |
| 10 mm                              | 730                | 2.5            | 21,5                 |                      |
| 15 mm                              | 1050               | 2.5            | 32,3                 |                      |
| Standard EN 1522                   | Caliber            | Velocity (m/s) | Thickness (mm)       | Areal weight (kg/m²) |
| FB 1                               | .22 LR             | 360            | 4                    | 8,3                  |
| FB 2                               | 9mm Luger          | 400            | 7                    | 15,0                 |
| FB 3                               | .357 Magnum        | 430            | 10                   | 21,5                 |
| FB 4                               | .357/.44<br>Magnum | 430/440        | 10                   | 21,5                 |
| FSG                                | Brenneke (L)       | 420            | 13                   | 28,0                 |

The data supplied are typical values. They are not to be considered specification values. All of the information, suggestions, and recommendations about these properties and uses of the products herein are based on tests and data believed to be accurate; however, the final determination regarding the suitability of any material described herein for the contemplated application, the manner of such use, and whether the use infringes any patents is the sole responsibility of the user. There is no warranty - expressed or implied - including, without limitation, warranties of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.

VRI Composites custom fabricates insulation materials to the exact specifications and drawings specified by our customers. We offer our customers the proper product for their specific application. A variety of dimensions and diameter sizes are available. Product colors vary according to material type.

VRIR 03/2026