

# Laminate



## VETRONITE PGS

- **High Pressure Laminate with good mechanical and electrical properties**
- **"Low smoke" material, especially suitable for aircraft and aeronautics**
- **Approved acc. to Airbus specification ATS 1000.001 / FAR 25853**

### Description

Vetronite PGS is a laminate based on phenolic resin and glass fabric.

### Specifications

IEC/DIN EN 60893      PF GC 201  
DIN 7735                HGW 2072 (\*)  
BS 3953                PF-2 (\*)  
NEMA LI-1              G-3  
(\*) no longer valid since March 2003

### RoHS Directive

Hazardous products listed in the EU-directive 2011/65/EU (RoHS-directive), annex II and amendment 2015/863/EU are not used as ingredients in this material.

### Colour

Brown

### Applications

Electrical insulation  
Aeronautics and aerospace  
Telecommunications

|                                                | Unit              | Value    | Test norm     |
|------------------------------------------------|-------------------|----------|---------------|
| <b>Mechanical properties</b>                   |                   |          |               |
| Flexural strength                              | MPa               | 380      | ISO 178       |
| E-modulus                                      | MPa               | 20000    | ISO 178       |
| Notched impact strength (Charpy), //           | kJ/m <sup>2</sup> | 40       | ISO 179       |
| Compressive strength // at 23°C                | MPa               | 200      | ISO 604       |
| Compressive strength ⊥ at 23°C                 | MPa               | 450      | ISO 604       |
| Tensile strength                               | MPa               | 250      | ISO 527       |
| <b>Electrical properties</b>                   |                   |          |               |
| Insulation resistance after immersion in water | Ohm               | 1.00E+9  | IEC 62631-3-3 |
| Breakdown voltage // 90°C in oil               | kV                | 20       | IEC 60243-1   |
| Electric strength ⊥ 90°C in oil                | kV/mm             | 6        | IEC 60243-1   |
| Relative permittivity at 1 MHz                 |                   | 5.0      | IEC 60250     |
| Comparative tracking index CTI                 |                   | 200      | IEC 60112     |
| <b>Thermal properties</b>                      |                   |          |               |
| Temperature index (TI)                         | TI                | 120      | IEC 60216     |
| Thermal conductivity                           | W/m.K             | 0.3      | ISO 8301      |
| Linear expansion coefficient //                | 1.0E-6/K          | 15       | ISO 11359-2   |
| <b>Physical properties</b>                     |                   |          |               |
| Density                                        | g/cm <sup>3</sup> | 1.90     | ISO 1183      |
| Water absorption                               | mg/%              | 40 / 0.2 | ISO 62        |

### Form of delivery

Sheet formats:  
1170 x 1070 mm  
2070 x 1070 mm (up to 40 mm thick)  
4300 x 1300 mm (untrimmed)  
Size tolerance 0 / - 30 mm

Thickness range 0.2 to 50 mm  
Thickness tol. acc. to DIN EN 60893-3-6

Also available as panels or 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 drill through-holes prior to machine.

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.