

## Epoxy Glass.

This is a thermo-laminated glass epoxy material, composed of woven fibreglass cloth and an epoxy resin binder that is flame resistant. With a good strength to weight ratio this product is used most commonly in electrical applications where high heat, mechanical stability and electrically isolative conditions are needed. Epoxy glass also has a very low water absorption rate. Even when machined into finished parts and components Epoxy glass retains its shape and size even operating at its material limits for prolonged periods of time.

### Physical Properties (Indicative values)

| GENERAL PROPERTIES   | Test Method             | Units             | Value  |
|--|-------------------------|-------------------|--------|
| Density  | ISO 1183                | g/cm <sup>3</sup> | 1.9    |
| Water absorption, absolute   | ISO 62                  | mg                | 23***  |
| Thermal Endurance  | IEC 60216               | T.I.              | 130*   |
| MECHANICAL PROPERTIES  |                         |                   |        |
| Flexural stress at rupture perpendicular to laminations.                 | ISO 178                 | MPa               | 340    |
| Apparent modulus of elasticity to laminations.                           | ISO 178                 | MPa               | 22000* |
| Compressive strength perpendicular to laminations.                       | ISO 604                 | MPa               | 350*   |
| Impact strength (Charpy) parallel to laminations.                        | ISO 179/3C              | KJ/m <sup>2</sup> | 42     |
| Shearing strength parallel to laminations.                               | VDE 0318/2              | MPa               | 30*    |
| Tensile Strength   | ISO 527-4               | MPa               | 300*   |
| ELECTRICAL PROPERTIES  |                         |                   |        |
| Electric strength at 90°C in oil perpendicular to laminations            | IEC 60243-1             | kV/mm             | 10.2** |
| Breakdown voltage at 90°C in oil parallel to laminations.                | IEC 60243-1             | kV/mm             | 45     |
| Insulation resistance after immersion in water.                          | IEC 60167               | Mohm              | 50     |
| Proof tracking index PTI   | IEC 60112               | PTI               | -      |
| Comparative tracking index CTI   | IEC 60112               | CTI               | 200*   |
| Tracking and erosion resistance.   | IEC 60112               | Klasse            | -      |
| Certifications Underwriter Laboratories                                  |                         |                   |        |
| Flammability   | E307596 IEC 60695-11-10 | UL94              | V-O    |
| Hot-wire ignition  | E307596 UL746A          | HWI               | -      |
| High Amp Arc Ignition  | E307596 UL746A          | HAI               | -      |
| Relative Temperature Index   | E307596 UL746A          | RTI               | -      |
| Fire behaviour and fire side effects of materials and parts DIN 5510 - 2 |                         |                   |        |
| Flamibility Group  | DIN 5510 T.2            | Class             | -      |
| Smoke Emissions Class  | DIN 5510 T.3            | Class             | -      |
| Drop Form Category   | DIN 5510 T.4            | Class             | -      |

Base Material - Woven Glass Cloth  
Matrix Resin - Epoxy (epoxide)

### Legend

\* Typical values as per IEC 60893-4. They shall not be considered as specification requirements.

\*\* For thickness > = 3.0 mm

\*\*\* For test specimens 50 x 50 x 4 mm

Test values are derived from an average type test.

### RoHS - Declaration.

This material does not contain any substances of very high concern as listed in the EU directive 2011/65/EU, article 4, paragraph 1.

The mechanical features decrease with a reduction in temperature and are also influenced by other factors (moisture, etc). The quoted values do not take into consideration impact conditions or heavy loads.

This table, is mainly to be used for comparison purposes. It's a valuable tool to help in the choice of material. The data listed here falls within the normal range of product properties. However, they aren't guaranteed and shouldn't be used to establish material specification limits nor used alone as the basis of design.

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