

Chemical Designation

PPE (Polyphenylene ether)

Colour

beige opaque

Density

1.3 g/cm³

Fillers

glass fibres

Main features

- very high stiffness
- electrically insulating
- good weldable and bondable
- sensitive to stress cracking
- high strength
- high dimensional stability

Target Industries

- electronics
- energy industry
- mechanical engineering
- automotive industry

| Mechanical properties | parameter | value | unit | norm | comment |
|---------------------------------------|-------------------------------|------------------|----------------------------------|----------------------|--|
| Tensile strength | 50mm/min | 73 | MPa | DIN EN ISO 527-2 | (1) For tensile test: specimen type 1b |
| Modulus of elasticity (tensile test) | 1mm/min | 4100 | MPa | DIN EN ISO 527-2 | (2) For flexural test: support span 64mm, norm specimen. |
| Tensile strength at yield | 50mm/min | 73 | MPa | DIN EN ISO 527-2 | (3) Specimen 10x10x10mm |
| Elongation at yield (tensile test) | 50mm/min | 5 | % | DIN EN ISO 527-2 | (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. |
| Elongation at break (tensile test) | 50mm/min | 5 | % | DIN EN ISO 527-2 | (5) For Charpy test: support span 64mm, norm specimen. |
| Flexural strength | 2mm/min, 10 N | 116 | MPa | DIN EN ISO 178 | 2) |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N | 3900 | MPa | DIN EN ISO 178 | |
| Compression strength | 1% / 2% / 5% 5mm/min, 10 N | 23/41/91 | MPa | EN ISO 604 | 3) |
| Compression modulus | 5mm/min, 10 N | 3300 | MPa | EN ISO 604 | 4) |
| Impact strength (Charpy) | max. 7.5J | 37 | kJ/m ² | DIN EN ISO 179-1eU | 5) |
| Shore hardness | D | 88 | | DIN EN ISO 868 | |
| Thermal properties | parameter | value | unit | norm | comment |
| Glass transition temperature | | 150 | °C | DIN EN ISO 11357 | 1) |
| Melting temperature | | n.a. | °C | DIN EN ISO 11357 | 2) |
| Service temperature | short term | 110 | °C | | 3) |
| Service temperature | long term | 85 | °C | | |
| Thermal expansion (CLTE) | 23-60°C, long. | 4 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Thermal expansion (CLTE) | 23-100°C, long. | 4 | 10 ⁻⁵ K ⁻¹ | DIN EN ISO 11359-1;2 | |
| Specific heat | | 1.2 | J/(g*K) | ISO 22007-4:2008 | |
| Thermal conductivity | | 0.28 | W/(K*m) | ISO 22007-4:2008 | |
| Electrical properties | parameter | value | unit | norm | comment |
| surface resistivity | | 10 ¹⁴ | Ω | - | |
| volume resistivity | | 10 ¹⁴ | Ω*cm | - | |
| Other properties | parameter | value | unit | norm | comment |
| Water absorption | 24h / 96h (23°C) | 0.01 / 0.02 | % | DIN EN ISO 62 | 1) |
| Resistance to hot water/ bases | | (+) | | - | 2) |
| Resistance to weathering | | - | | - | 3) |
| Flammability (UL94) | corresponding to | HB | | DIN IEC 60695-11-10; | 4) |

