

## TECAPEEK ELS CF30 black - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PEEK (Polyetheretherketone)

### Colour

black opaque

### Density

1.38 g/cm<sup>3</sup>

### Fillers

carbon fibres

### Main features

- good heat deflection temperature
- good chemical resistance
- inherent flame retardant
- hydrolysis and superheated steam resistant
- very high stiffness
- very high creep resistant
- high dimensional stability
- resistance against high energy radiation

### Target Industries

- conveyor technology
- semiconductor technology
- mechanical engineering
- aircraft and aerospace technology
- chemical technology
- textile industry
- automotive industry
- vacuum technology

| Mechanical properties                 | parameter                | value   | unit              | norm               | comment                                                                |
|---------------------------------------|--------------------------|---------|-------------------|--------------------|------------------------------------------------------------------------|
| Tensile strength                      | 50mm/min                 | 122     | MPa               | DIN EN ISO 527-2   | (1) For tensile test: specimen type 1b                                 |
| Modulus of elasticity (tensile test)  | 1mm/min                  | 6800    | MPa               | DIN EN ISO 527-2   | (2) For flexural test: support span 64mm, norm specimen.               |
| Tensile strength at yield             | 50mm/min                 | 122     | MPa               | DIN EN ISO 527-2   | (3) Specimen 10x10x10mm                                                |
| Elongation at yield (tensile test)    | 50mm/min                 | 7       | %                 | DIN EN ISO 527-2   | (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. |
| Elongation at break (tensile test)    | 50mm/min                 | 7       | %                 | DIN EN ISO 527-2   | (5) For Charpy test: support span 64mm, norm specimen.                 |
| Flexural strength                     | 2mm/min, 10 N            | 193     | MPa               | DIN EN ISO 178     | 2)                                                                     |
| Modulus of elasticity (flexural test) | 2mm/min, 10 N            | 6800    | MPa               | DIN EN ISO 178     |                                                                        |
| Compression strength                  | 1% / 2%<br>5mm/min, 10 N | 25 / 47 | MPa               | EN ISO 604         | 3)                                                                     |
| Compression modulus                   | 5mm/min, 10 N            | 5000    | MPa               | EN ISO 604         | 4)                                                                     |
| Impact strength (Charpy)              | max. 7.5J                | 62      | kJ/m <sup>2</sup> | DIN EN ISO 179-1eU | 5)                                                                     |
| Shore hardness                        | D                        | 91      |                   | DIN EN ISO 868     |                                                                        |

| Thermal properties           | parameter        | value | unit                             | norm                 | comment |
|------------------------------|------------------|-------|----------------------------------|----------------------|---------|
| Glass transition temperature |                  | 147   | °C                               | DIN EN ISO 11357     | 1)      |
| Melting temperature          |                  | 341   | °C                               | DIN EN ISO 11357     |         |
| Service temperature          | short term       | 300   | °C                               |                      | 2)      |
| Service temperature          | long term        | 260   | °C                               |                      |         |
| Thermal expansion (CLTE)     | 23-60°C, long.   | 4     | 10 <sup>-5</sup> K <sup>-1</sup> | DIN EN ISO 11359-1;2 |         |
| Thermal expansion (CLTE)     | 23-100°C, long.  | 4     | 10 <sup>-5</sup> K <sup>-1</sup> | DIN EN ISO 11359-1;2 |         |
| Thermal expansion (CLTE)     | 100-150°C, long. | 6     | 10 <sup>-5</sup> K <sup>-1</sup> | DIN EN ISO 11359-1;2 |         |
| Specific heat                |                  | 1.2   | J/(g*K)                          | ISO 22007-4:2008     |         |
| Thermal conductivity         |                  | 0.66  | W/(K*m)                          | ISO 22007-4:2008     |         |

| Electrical properties | parameter | value                             | unit | norm             | comment |
|-----------------------|-----------|-----------------------------------|------|------------------|---------|
| surface resistivity   |           | 10 <sup>2</sup> - 10 <sup>4</sup> | Ω    | DIN EN 61340-2-3 |         |

| Other properties               | parameter        | value       | unit | norm                 | comment |
|--------------------------------|------------------|-------------|------|----------------------|---------|
| Water absorption               | 24h / 96h (23°C) | 0.02 / 0.03 | %    | DIN EN ISO 62        | 1)      |
| Resistance to hot water/ bases |                  | +           |      | -                    | 2)      |
| Resistance to weathering       |                  | -           |      | -                    | 3)      |
| Flammability (UL94)            | corresponding to | V0          |      | DIN IEC 60695-11-10; | 4)      |

(1) Ø ca. 50mm, h=13mm  
 (2) + good resistance  
 (3) - poor resistance  
 (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.