

# Connector Technical Data

## MATERIALS

### PA (Polyamides)

Polyamides are high-impact, very tough thermoplastics which exhibit very good electrical insulation characteristics, favorable tracking characteristics and resistance to flashover. The greater the proportion of filling agents, the less the water absorption and the better the dimensional stability. Their specific surface resistance, due to humidity absorption, is somewhat less than for other plastics, but there is the advantage that this reduces the tendency for a build up of electrostatic charge and thus the tendency for PA components to attract dust is avoided.

These characteristics mean that polyamides are suitable for production of casings for electrical plant. (Typical application: high voltage modules, plastic frame grips)

### PC (Polycarbonate)

Polycarbonate is an amorphous thermoplastic. It is distinguished by high strength, viscosity, hardness, rigidity

and good resistance to heat and cold in relation to its form, and good electrical characteristics. PC is a glass-clear, easily dyed plastic with very low water absorption, and exhibits high dimensional precision, low waste and good processability. (Typical applications: inserts/ insulators, frames and individual modules for modular system)

### PBT (Polybutylenterephthalate)

Polybutylenterephthalate is a thermoplastic polyester and is distinguished by its high rigidity, high stability of form under heat, low creep, low water absorption of <0.2%, high dimensional stability and good to very good electrical characteristics. It is a tough viscous plastic with high abrasion resistance, high dimensional stability and long-term strength combined with good slip and wear characteristics. (Typical application: insert/ insulators)

#### Chemical Resistance of Plastics

Diluted acid	PA 6 GF	PA 66 GF	PC GF	PBT GF
Acetone	+	+	+	+
Aqueous ammoniac	+	+	·	+
Benzene	+	+	+	+
Benzol	+	+	+	+
Diesel oil	+	+	·	+
Concentrated acetic acid	+	+	+	+
Alkaline potassium	·	·	·	°
Methanol	·	·	·	+
Engine Oil	°	°	·	+
Diluted alkalis	+	+	+	+
Chlorohydrocarbons	+	+	·	+
Outdoor exposure	+	+	·	°
Cold water/ seawater	+	+	°	+

+ = resistant; ° = conditionally resistant; · = non-resistant

#### Electrical, thermal and mechanical values

Electrical Values	Unit	PA 6 GF	PA 66 GF	PC GF	PBT GF
Flash over resistance (DIN 53481; VDE 0303)	Ed * KV/mm	80/40	>80/40	35	100
Tracking current resistance (DIN 53480; VDE 0303)	CTI	>500	>500	>125 to 250	>500

#### Thermal values

Temperature limit for short-term application	°C	180	200	165	190
Temperature limit for long-term application	°C	105	120	130	140

#### Mechanical values

Density (DIN 53479)	g/ cm3	1.35	1.35	1.34	1.53
Modulus of elasticity in the flexional and tensile test (DIN 53457)	EZ* MPa	8500/ 6000	9700/7500	6000	10000
Absorption of humidity in NK until occurrence of saturation (DIN 5714)	%	2.1	1.5	0.13	0.13

\* Numerical information relates to both dry and atmospherically humid conditions