

Datasheet AS EP GC 311

Standard types according to DIN EN 60893.

Sheets made from industrial laminated materials.

Value: Minimum requirements of DIN EN 60893.

Value: Typical values, general recommended values, which must not be used as standard values.

- (1): The flexural strength measured at 150 °C ± 3K must not be less than 50% of the defined value.
 (2): The flexural strength measured at 130 °C ± 3K must not be less than 50% of the defined value.
 (3): After 96 h pretreatment in air at 105 °C ± 5K directly prior to testing and immediate immersion in the hot oil.
 (4): UL- listed file E307596.

Material	
Characteristic property applications	As type 204 but with zero-halogen flame retardant, V-0
Resin	Epoxy
Substrate	Woven glass cloth

Availability	Unit	Value
Sizes	mm	1050x1020, 1050x2150 and 1250x2800
Thickness	mm	0.1-360

Physical Properties	DIN EN 60893-2	Test Standard	Unit	Min/Max	Value
Density	8.1	ISO 1183	g/cm ³		1.8-2.0
Water absorption (thickness 10 mm)	8.2	ISO 62	mg	Max	34

Mechanical Properties	DIN EN 60893-2	Test Standard	Unit	Min/Max	Value
Flexural strength	5.1	ISO 178	MPa	Min	348 ⁽²⁾
Elastic modulus from bending test	5.2	ISO 178	MPa	Min	22.000
Compressive strength perpendicular	5.3	ISO 604	MPa	Min	350
Impact strength Charpy or Izod	5.4.2/5.4.3	ISO 179/3C	kJ/m ²	Min	50
Shear strength parallel	5.5	VDE 0318/2	MPa	Min	30
Tensile strength	5.6	ISO 527-4	MPa	Min	300

Electrical Properties	DIN EN 60893-2	Test Standard	Unit	Min/Max	Value
Dielectric strength perpendic at 90 °C in oil (thickness 3 mm)	6.1.3.1	IEC 60243-1	kV/mm	Min	10.2
Dielectric strength parallel at 90 °C in oil	6.1.3.2	IEC 60243-1	kV	Min	45
Permittivity 50 Hz	6.2	IEC 60250		Max	5.3
Permittivity 1 MHz	6.2	IEC 60250		Max	5.3
Dissipation factor 50 Hz	6.2	IEC 60250		Max	0.04
Dissipation factor 1 MHz	6.2	IEC 60250		Max	0.04
Insulation resistance	6.3	IEC 60167	MΩ	Min	50.000
Proof tracking index	6.4	IEC 60112	V	Min	-
Comparative tracking index	6.4	IEC 60112	V	Min	180

Thermal Properties	DIN EN 60893-2	Test Standard	Unit	Min/Max	Value
Thermal endurance	7.1	IEC 60216	T.I.	Min	155
Flammability	7.2	IEC 60707	Category		V-0