

## Datasheet AS EP MP 21

Standard types according to DIN EN 61212.

Tubes made from industrial laminated materials.

Value: Minimum requirements of DIN EN 61212.

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): After 96 h pretreatment in air at 105 °C ± 5K directly prior to testing and immediate immersion in the hot oil.

Material	
Characteristic property applications	Epoxy mica paper, electrical applications at high temperatures
Resin	Epoxy
Substrate	Mica paper

Availability	Unit	Value
Diameter	mm	2-250

Physical Properties	DIN EN 61212-2	Test Standard	Unit	Min/Max	Value
Water absorption	7.2	ISO 62	mg/cm <sup>2</sup>	Max	2
Density	7.3	ISO 1183	g/cm <sup>3</sup>		1.5-1.8
Combustibility	UL 94		Category		-

Mechanical Properties	DIN EN 61212-2	Test Standard	Unit	Min/Max	Value
Flexural strength perpendicular to laminations	5.1	ISO 178	MPa	Min	100
Compressive strength axial	5.2	ISO 604	MPa	Min	60
Cohesion between layers	5.3	IEC 61212-2	MPa	Min	30

Electrical Properties	DIN EN 61212-2	Test Standard	Unit	Min/Max	Value
Dielectric strength perpendicular at 90 °C in oil (thickness 3 mm)	6.1	IEC 60243-1	kV/mm	Min	11
Dielectric strength parallel at 90 °C in oil	6.1	IEC 60243-1	kV	Min	30
Insulation resistance	6.2	IEC 60167	MΩ	Min	100
Permittivity 50 Hz	6.3	IEC 60250		Max	-
Permittivity 1 MHz	6.3	IEC 60250		Max	5.2
Dissipation factor 50 Hz	6.3	IEC 60250		Max	-
Dissipation factor 1 MHz	6.3	IEC 60250		Max	0.4

Thermal Properties	DIN EN 61212-2	Test Standard	Unit	Min/Max	Value
Thermal endurance	7.1	IEC 60216	T.I.	Min	155