

Technical Data Sheet

Durostone[®] UPM S1

GFK-UP

Typical characteristics

- SMC high-pressure laminate
- Special polyester (UP) resin matrix reinforced with an e-glass roving mat
- High mechanical strength
- High dielectric strength
- Flame retardant

Typical industries

- Switchgear
- Renewable Energies
- Electrical Industry
- Electrical Insulating Components
- Generator and Motor
- Semiconductor High and low temperature

	Test method	Unit	Guideline value
Mechanical properties			
Density	ISO 1183	g / cm ³	2,0
Flexural strength [⊥]	ISO 178	MPa	200
Modulus of elasticity in flexion [⊥]	ISO 178	MPa	15000
Compressive strength [⊥]	ISO 604	MPa	350
Compressive strength II	ISO 604	MPa	180
Tensile strength II	ISO 527	MPa	120
Impact strength II (Charpy)	ISO 179	kJ / m ²	100
Delamination force II	DIN 53463	N	2600
Thermal properties			
Flammability	UL 94	/	V0 / 3mm
Smoke density & toxicity, class	NF F 16-101	/	F0
Fire test, class	NF P 92-501	/	M1
Coefficient of linear expansion [⊥]	TMA (Mettler)	10 ⁻⁶ x K ⁻¹	40 - 60
Coefficient of linear expansion II	TMA (Mettler)	10 ⁻⁶ x K ⁻¹	10 - 20
Temperature index	IEC 60216	T.I.	155
Insulation class	IEC 60085	/	F
Physical properties			
Water absorption (4mm thickness)	ISO 62	%	0,2

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	Test method	Unit	Guideline value
Dielectrical properties			
Electric strength 90°C under oil [⊥]	IEC 60243	kV / mm	13
Electric strength 90°C under oil	IEC 60243	kV/25mm	75
Relative permittivity (50 Hz)	IEC 60250	ϵ_r	≈ 4,5
Dielectric loss factor (50 Hz)	IEC 60250	$\tan \delta$	≈ 0,01
Specific surface resistance	IEC 60093	Ω	10^{13}
Specific volume resistance	IEC 60093	$\Omega \times \text{cm}$	10^{13}
Comparative tracking index	IEC 60112	CTI	600 M

[⊥] = perpendicular to the lamination || = parallel to the lamination

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