

## Technical Data Sheet

# Durostone<sup>®</sup> 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
<b>Mechanical properties</b>			
Density	ISO 1183	g / cm <sup>3</sup>	2,0
Flexural strength <sup>⊥</sup>	ISO 178	MPa	200
Modulus of elasticity in flexion <sup>⊥</sup>	ISO 178	MPa	15000
Compressive strength <sup>⊥</sup>	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 <sup>2</sup>	100
Delamination force II	DIN 53463	N	2600
<b>Thermal properties</b>			
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 <sup>⊥</sup>	TMA (Mettler)	10 <sup>-6</sup> x K <sup>-1</sup>	40 - 60
Coefficient of linear expansion II	TMA (Mettler)	10 <sup>-6</sup> x K <sup>-1</sup>	10 - 20
Temperature index	IEC 60216	T.I.	155
Insulation class	IEC 60085	/	F
<b>Physical properties</b>			
Water absorption (4mm thickness)	ISO 62	%	0,2

[ri-inquiry@roechling.com](mailto:ri-inquiry@roechling.com) • [www.roechling.com/industrial/materials](http://www.roechling.com/industrial/materials)



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

<sup>⊥</sup> = perpendicular to the lamination || = parallel to the lamination

The data stated above are average values verified on the basis of regular statistical tests and controls. All information in this publication is based on current technical knowledge and experience. Due to the large number of possible influences during processing and application, it does not exempt the user/processor from carrying out their own tests and trials. Responsibility for the evaluation of the end product for the intended use and compliance with the applicable relevant legal requirements lies exclusively with the user/processor as well as the distributor of the respective product/end product. Suggested uses do not constitute an assurance of suitability for the recommended purpose. The information in this publication and our declarations in Connection with this publication do not constitute acceptance of a guaranteed or warranted characteristic. Guarantee declarations require our separate express written declaration in order to be effective. We reserve the right to adapt the product to technical progress and new developments. The products described in this publication are only sold to customers with the appropriate expertise and not to consumers. Please do not hesitate to contact us if you have any questions or if you experience any specific application problems. If the application for which our products are used is subject to an official approval requirement, the user/processor is responsible for obtaining these approvals. Our application recommendations do not exempt the user/processor from the obligation to examine and, if necessary, clarify the possibility of infringements of third-party rights. In all other respects, we refer to our General Terms and Conditions (GTC). These are available at: [www.roechling-industrial.com/gtc](http://www.roechling-industrial.com/gtc)

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