

# laminates

## DELMAT POLYESTER 68420

- ▶ Very high mechanical properties at room and elevated temperatures (temperature index 155°C)
- ▶ Can substitute woven glass epoxy G-11 grades in defined applications
- ▶ Good flame and fire resistance : flame retardant
- ▶ Easy cold punch up to 6mm

### General description

Delmat Polyester 68420 are laminates based on glass mat and polyester resin systems.

### RoHS Directive

Hazardous products listed in the EU-directive 2002/95/CE (ROHS-directive), §4 section 1, are not used as ingredients in this material.

### Application

Operating links, drives, blocks in contactors, switchgears...  
Motor slot wedges  
Pole frame  
Spacers  
And suitable for many other mechanical applications...

### Standards

NEMA LI 1 : GPO-2  
IEC 60893-3-5 : UP GM 202  
EN 60893-3-5 : UP GM 202  
NF C 26-153 : Vm P2 e  
DIN 7735 : Hm 2471

### Form of delivery

Sheet size : 2000 +/-10mm x 1000 +/-10mm  
Thicknesses : 0,8mm to 60mm

The sheets are untrimmed. Homogeneity on a width of 13mm from the edges is not guaranteed.

This product can be delivered in machined parts according to specific drawings.

### Colour

Vermilion

The product properties set forth in this data sheet are based on the results of testing of typical material produced by the affiliated companies of Von Roll Holding Ltd. (underneath referred as Von Roll). Some variation in product properties is typical. Comments or suggestions relating to any subject other than product properties are offered only to call the end-user's or other person's attention to considerations which may be relevant in the independent determination of the use and/or manner of use of product. Von Roll does not claim or warrant that the use of its product will have the results described in this data sheet or that the information provided is complete, accurate or useful. The user should test the product to determine its properties and its suitability for the intended use. Von Roll expressly disclaims any liability for any damage, harm, injury, cost or expense to any person resulting directly or indirectly from that person's reliance on any information contained in this data sheet. Nothing contained in this data sheet constitutes representation or warranty as to any matter whatsoever. Von Roll makes no warranties whatsoever in this data sheet, expressed or implied, including any implied warranty or fitness for a particular use or purpose. Von Roll shall in no event be liable for incidental, exemplary, punitive or consequential damages.

		Value	Test norm
<b>Mechanical properties</b>			
Tensile strength, //, at 23°C	MPa	100	ISO 527
Flexural strength at 23°C, flatwise	MPa	210	ISO 178
Flexural strength at 150°C, flatwise	MPa	120	ISO 178
Modulus of elasticity in flexure at 23°C, flatwise	MPa	10000	ISO 178
Modulus of elasticity in flexure at 150°C, flatwise	MPa	6000	ISO 178
Compressive strength //, at 23°C	MPa	160	ISO 604
Compressive strength at 23°C, flatwise	MPa	350	ISO 604
Edgewise notched impact strength Charpy	kJ/m <sup>2</sup>	50	ISO 179
Edgewise notched impact strength IZOD	kJ/m <sup>2</sup>	45	ISO 180
Bonding strength (10mm thick)	N	4000	ASTM D 229
<b>Electrical properties</b>			
Insulation resistance, as received	MOhm	10 <sup>7</sup>	IEC 60167
Insulation resistance, after 24h immersion in water at 23°C	MOhm	10 <sup>4</sup>	IEC 60167
Edgewise breakdown voltage, step by step, in oil at 23° C after immersion 48h/50°C/water	kV	40	IEC 60243-1
Edgewise breakdown voltage, step by step, in oil at 90° C, as received	kV	60	IEC 60243-1
Flatwise electric strength, step by step test, in oil at 90°C	kV/mm	11	IEC 60243-1
Comparative tracking index - CTI	V	500	IEC 60112
Arc resistance	s	175	ASTM D 495
<b>Physical properties</b>			
Density	g/cm <sup>3</sup>	1.8 ± 0.1	ISO 1183 (method A)
Water absorption after 24h immersion at 23°C, thickness 4mm	mg	<50	ISO 62 (method 1)
Flammability according to UL 94 ( for thicknesses above or equal to 4mm)		94 V-O	UL 94
<b>Thermal properties</b>			
Temperature index (TI)		155	IEC 60216