

## Technical material data

# Panel EP GM 203 EN 60893-3-2

### HM 34

**CARRIER:** glass filament roving fabric

**MATRIX:** modified epoxy resin

MECHANICAL PROPERTIES	unit	test value	norm value
flexural strength	MPa	360	320
impact strength	kJ/m <sup>2</sup>	90	-
notched impact strength (charpy) parallel to laminations	kJ/m <sup>2</sup>	50	90
tensile strength	MPa	280	(250)
Compressive strength parallel to laminations	MPa	450	-
compressive strength perpendicular to laminations	MPa	350-450	(350)
elasticity module bending test	MPa	18000	(15000)
shear strength parallel to layer direction	MPa	-	(20)

### ELECTRICAL PROPERTIES

insulation resistance	MΩ	5*10 <sup>3</sup>	5*10 <sup>3</sup>
dielectric strength (1-minute test voltage) at 90°C in oil parallel to the layer direction	kV	70	35
dielectric strength (1-minute test voltage) at 90°C in oil perpendicular to the layer direction	kV/mm	13-13.3	9.0
dissipation factor at 48-62 Hz	max.	0.05	0.05
dissipation factor at 1 MHz	max.	-	0.05
permittivity at 48-62 Hz	max.	-	(5.5)
permittivity at 1 MHz	max.	-	(5.5)
dielectric constant		5	-
tracking resistance	CTI	150	(180)

### PROPERTIES

- high mechanical strength at elevated temperature

### APPLICATIONS

- mechanical and electrical applications generators

Rev. A – 01.01.2016

---

**THERMAL PROPERTIES**

	unit	test value	norm value
thermal conductivity	W/m*K	0.35	-
coefficient of elongation	10 <sup>-6</sup> /K	10-20	-
temperature limit	°C	180	(155)
thermal class		H	-
incandescence resistance	level	2a	-

**OTHER PROPERTIES**

raw density	g/cm <sup>3</sup>	< 100	(1.7-1.9)
water absorption at 3mm thickness	mg	25	29
flammability	level	HB	-

---

The values in () are specific values which are only noted for information; they cannot be seen as a requirement of this norm. The stated values are average values which are confirmed by regular statistical tests and controls. These data are pure representative information and may only lead by an explicit agreement to an assurance for a sales agreement. Directive 2011/65/EU of European Union on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) became operative as from the 27th of January, 2011. Following substances namely are involved: lead, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers, mercury. We herewith declare that all of our products were manufactured RoHS conformal. As downstream users (i.e., as manufacturer of products), we act in accordance with European Union Regulation 1907/2006 (the REACH Regulation). According to information provided to us by our suppliers, no substances from the latest Candidate List (the List of Substances of Very High Concern, or SVHC List) from the 15th of June, 2015 exist in the materials used by us in concentrations of more than 0.1 % by mass.

---