MAGNEBOND® CAR-200

Properties

Magnebond® CAR-200 has the following characteristics:
- thermal index of 210°C,
- especially suitable for windings with special thermal resistance,
- excellent chemical resistance, for instance to diesel fuel, resulting in reduced need for encapsulation,
- ability to withstand rotational velocities in excess of 200 km/h,
- rotor stability at over 38,000 rpm.

Insulation

Magnebond® CAR-200 is polyesterimide (THEIC) enameled copper wire overcoated with polyamide-imide. The final layer is a polyamide aromatic rotor bondcoat.

Application

Magnebond® CAR-200 is designed for the production of self-bonded, electromagnetic components, produced without impregnation. Bonding the coil is rapidly achieved in the production line, resulting in increased productivity.
Application:
- motors: fields and armatures,
- many application in the automotive industry, as well as other areas which may experience high levels of chemical contact.

Production range

The standards are:	
Diameter:	0.120 to 1.40 mm
Thickness:	Grade 1B or Grade 2B
Color:	Natural

Characteristics

Magnebond® CAR-200 fulfills the requirements of the following specifications:
IEC 60317-38
NEMA MW 102

Using conditions

The key conditions to be respected are as following:
- optimum bonding temperature between 190 °C and 230 °C,
- accurate quantity of energy for the bonding process,

Bonding the coils can be achieved by the joule-effect heating technique. The values for the intensity and voltage to be applied to the ends of a coil, can be determinated as follows:

$$70\ M = RI^2\ t$$

M = mass of wire in grams
R = resistance in Ohms
I = intensity in Amperes
t = length of time in seconds

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Valeurs typiques d'un fil **Magnebond® CAR-200** mesurées selon les normes CEI 60 851			Typical values for a **Magnebond® CAR-200** sample according to IEC 60 851 standards
Diamètre du conducteur	0,50		Conductor Diameter
Diamètre sur émail	0,561		Overall Diameter
Isolation de base	Polyesterimide (THEIC)		Basecoat
Surcouche	Polyamide-imide		Overcoat
Couche thermo-adhérente	Polyamide aromatic rotor		Bondcoat
Principales caractéristiques	Magnebond® CAR-200	Thermo-adhérent classique Typical Self-bonding	**Main characteristics**
Indice de température (isolation de base)	**210°C**	**200°C**	Thermal index (basecoat)
Durée de vie de 5000 h à (isolation de base)	**230°C**	-	5000 h life test (basecoat)
Choc thermique	**OK at 240°C**	**240°C**	Heat shock
Thermoplasticité	**340°C**	**340°C**	Cut through temperature
Tension de claquage	**≥ 1,5 x IEC values**	**IEC values**	Breakdown voltage
Flexibilité	**10 % + 1 diam.**	**10 % + 1 diam.**	Flexibility
Allongement	**35 %**	**35 %**	Elongation
Tangente Delta (isolation de base)	**195°C**	**190°C**	Tangent Delta (basecoat)
Tangente Delta (surcouche)	**140°C**	**130°C**	Tangent Delta (overcoat)
TEST DE RESISTANCE DE COLLAGE	Magnebond® CAR-200	Thermo-adhérent classique Typical Self-bonding	**BONDING STRENGTH PERFORMANCE**
Résistance de collage à 20°C (CEI 60-851-3 Sec 7.1)			Bond strength at 20°C (IEC 60-851-3 Sec 7.1)
5 min 200°C	1,7 N	2,1 N	5 min 200°C
30 min 200°C	3,2 N	3,1 N	30 min 200°C
5 min 220°C	3,0 N	3,2 N	5 min 220°C
30 min 220°C	3,9 N	3,5 N	30 min 220°C
Résistance de collage à 155°C (CEI 60-851-3 Sec 7.2)			Bond strength at 155°C (IEC 60-851-3 Sec 7.2)
30 s. 200°C	147,3 N	65,3 N	30 s. 200°C
2,5 min 200°C	173,0 N	72,8 N	2,5 min 200°C
5 min 200°C	175,8 N	78,2 N	5 min 200°C
Résistance de ramolissement (CEI 60-851-3 Sec 7.1)			Resoftening Temperature (IEC 60-851-3 Sec 7.1)
30 min 200°C	240°C	180°C	30 min 200°C
30 min 220°C	260°C	190°C	30 min 220°C
30 min 240°C	270°C	220°C	30 min 240°C

These values are for information only.

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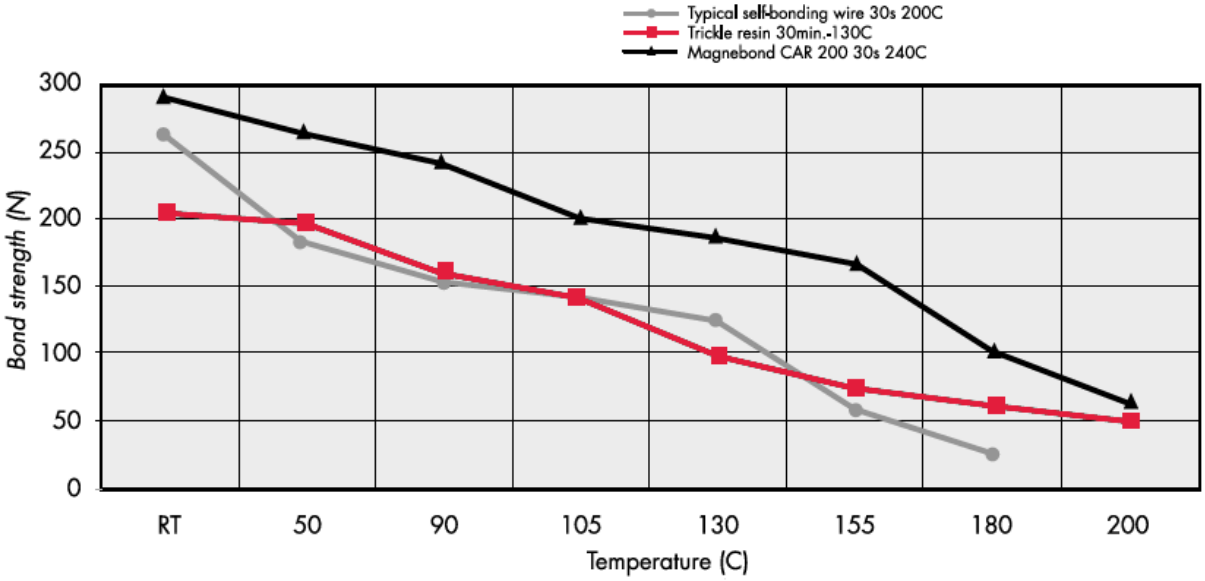
Bond strength
Test according to IEC 851-3 0,50 mm



These values are for information only.