MAGNEBOND® UL-180

Properties

Magnebond® UL-180 has the following characteristics:
- thermal index of 160°C,
- solderable at 390°C without previous removal of the enamel coating,
- very good thermal properties,
- excellent winding properties,
- high resoftening temperature,
- bondable under the action of heat resulting in a bonded coil with similar properties to trickle resin or impregnated coils.

Insulation

Magnebond® UL-180 is a solderable polyurethane enameled copper wire. The final layer is a polyamide aliphatic bondcoat.

Application

Magnebond® UL-180 is designed for the production of self-bonded windings, produced without supporting bobbins and without impregnation, but by either moulding or pressure. It is recommended for windings which need a good compromise between solderability and bonding.
Bonding the coil is rapidly achieved in the production line resulting in higher productivity.
Applications:
- deflection yokes for monitors,
- electrical motors,
- solenoids.

Production range

The standards are:	
Diameter:	0.15 to 1.00 mm
Thickness:	Grade 1B and Grade 2B
Color:	Natural

Characteristics

Magnebond® UL-180 fulfills the requirements of the following specifications:
IEC 60317-35
NEMA MW 3C

Using conditions

The key conditions to be respected are the following :
- bonding temperature between 170 and 200°C, according to the type of aliphatic polyamide bondcoat used (information on request from our technical department)
- accurate quantity of energy applied during 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 determined as follows :

$$70\ M = RI_2t$$

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® UL-180** mesurées selon les normes CEI 60 851		Typical values for a **Magnebond® UL-180** sample according to IEC 60 851 standards
Diamètre du conducteur Diamètre sur émail Isolation de base Isolation thermo-adhérente	0,50 0,561 Polyuréthane Polyamide aliphatic	Conductor Diameter Overall Diameter Basecoat Bondcoat
Principales caractéristiques		**Main characteristics**
Indice de température	**160°C**	Thermal index
Durée de vie de 5000 h à	**180°C**	5000 h life test
Choc thermique	**OK at 200°C**	Heat shock
Thermoplasticité	**≥ 250°C**	Cut through temperature
Tension de claquage	**≥ 1,5 x IEC values**	Breakdown voltage
Soudabilité	**390°C, 4 sec.**	Soderability
Flexibilité	**10 % + 1 diam.**	Flexibility
Allongement	**40 %**	Elongation
Tangente Delta (isolation de base)	**≥ 165°C**	Tangente Delta (basecoat)
Température de ramolissement (Méthode CEI 60 851-3/7-1 sur bobinage hélicoïdal)	**≥ 160°C**	Resoftening Temperature (According to helical coil test IEC 60-851-3/7-1)

Valeurs typiques d'un fil **Magnebond® UL-180** mesurées selon les normes CEI 60 851		Typical values for a **Magnebond® UL-180** sample according to IEC 60 851 standards
Diamètre du conducteur Diamètre sur émail Isolation de base Isolation thermo-adhérente	0,90 0,984 Polyuréthane Polyamide aliphatic	Conductor Diameter Overall Diameter Basecoat Bondcoat
Principales caractéristiques		**Main characteristics**
Indice de température (isolation de base)	**190°C**	Thermal index (basecoat)
Durée de vie de 5000 h à (isolation de base)	**200°C**	5000 h life test (basecoat)
Choc thermique	**200°C**	Heat shock
Thermoplasticité	**≥ 250°C**	Cut through temperature
Tension de claquage	**≥ 1,5 x IEC values**	Breakdown voltage
Soudabilité	**390°C, 5 sec.**	Soderability
Flexibilité	**10 % + 1 diam.**	Flexibility
Allongement	**42 %**	Elongation
Tangente Delta (isolation de base)	**≥ 165°C**	Tangente Delta (basecoat)
Température de ramolissement (Méthode CEI 60 851-3/7-1 sur bobinage hélicoïdal)	**≥ 160°C**	Resoftening Temperature (According to helical coil test IEC 60-851-3/7-1)

These values are for information only.

Magnebond® UL-180
Bonding strength
Heat bonding
Helical coil test IEC 60 851-3 n° 7-1