

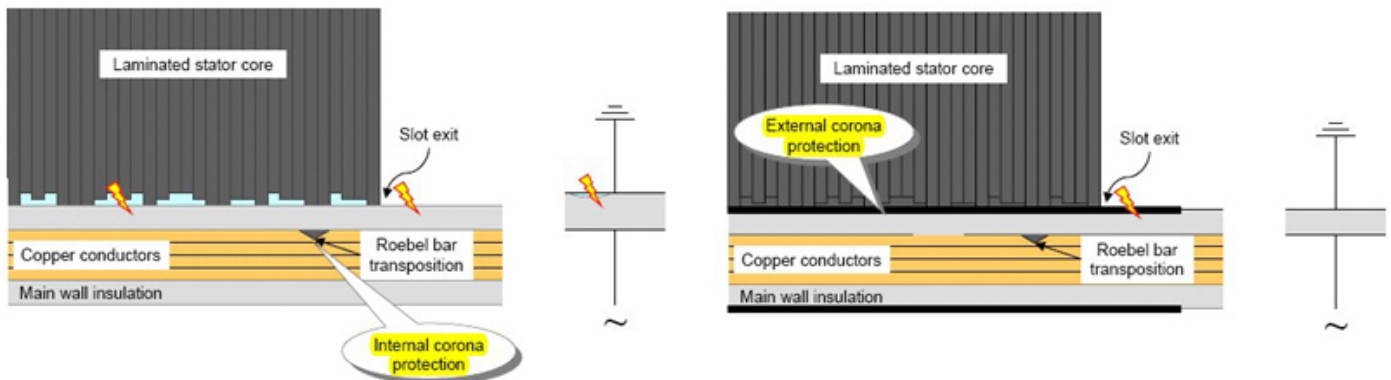
anti corona

CoronaShield® P 8003

- ▶ Conductive varnish for slot corona protection
- ▶ Surface resistivity 150 - 650 ?
- ▶ Suitable for RR as well as VPI
- ▶ Compatible with epoxy anhydride systems

General description

8003 is a alkyd resin with a conductive graphite filler, for use up to class F (155°C), suitable for Resin Rich and can also be used for VPI processed machines.



Application

In electricity, a corona discharge - also called partial discharge - is an electrical discharge caused by the ionization of a fluid surrounding a conductor. This occurs when the potential gradient exceeds a certain value, but conditions are insufficient to cause complete electrical breakdown or arcing. Precautions must be taken to prevent the onset of corona, otherwise free radicals and ions generated in corona reactions will rapidly destroy organic materials such as binder resins and polymer films. These materials are necessary to provide a sufficient mechanical strength of the coil or bar and to give a tight fit in the slot. Erosion of organic materials in the insulation may be regarded as one of the initial steps leading to failure of the machine.

The use of corona protection materials is recommended for machines with a rated voltage ≥ 5 kV.

Slot respectively External Corona Protection:

The corona occurs between the outside of the main wall insulation and the laminated stator core if the voltage exceeds a certain level. This is most critical because the erosion of the organic components of the main wall insulation will sooner or later cause a loosening of the coil or bar in the slot. Mechanical abrasion caused by vibration of the loose coil adds to the erosion induced by corona. According to statistics this failure mechanism is one of the most frequent causes for the breakdown of rotating machines. External corona has to be prevented by applying a conductive coating on the main wall insulation.

Scope of Application:

With the product we add a conductive layer on the straight portion of high voltage coils, to control electric stress and to dissipate any surface corona discharge which may occur. The air gap is thus shorted out and hence all of the electrical stress will occur across the solid insulation.

The varnish is intended for use in Resin Rich and VPI processed machines.

Basis for selection

The selection of suitable materials depends on the type of high-voltage machine that is to be deployed as well as the insulation system and techniques are used (VPI or RR).

		Value	Test norm
Drying time at 23°C - Surface	minutes	10 - 15	DIN 46449
Drying time at 23 °C - non-tacky	minutes	15 - 30	DIN 46449
Drying time at 23 °C - able to be handled	minutes	30 - 60	DIN 46449
Drying time at 23 °C - complete dry	h	5 - 10	DIN 46449
Surface resistivity	Ohm	150 - 650	SIB 12.04
Thermal class	°C	155	IEC 60085
Density	g/cm ³	ca. 1.120	ISO 2811-2
Viscosity at 23° C	s	300 ± 30	ISO 2431
Viscosity at 20°C	s	90 ± 10	DIN 52311
Solid content	%	54 ± 3	IEC 60464-1/-2
Flash point	°C	≥20	ISO 1523
Viscosity at 23° C	s	80 ± 10	DIN 53211

Processing Instructions

Because of the high density of the pigment it settles quickly at the bottom of the container, therefore the varnish has always to be stirred thoroughly before use.

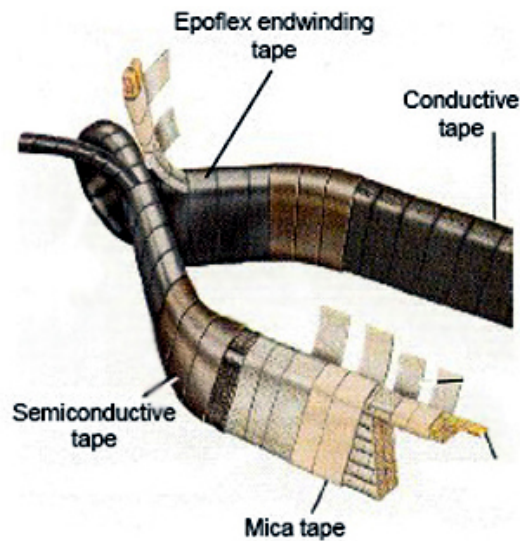
The varnish can be applied with a brush to all surfaces. The viscosity can be adjusted by using the appropriate thinner 9112 or 9114.

We recommend to apply individual thin coatings, resulting in a final layer thickness of 0.2 - 0.5 mm. Between the different coatings at least 30 minutes must elapse, enabling the previous layer to dry.

Important:

For VPI applications a compatibility test with the impregnating resin or varnish is a must. We recommend an increase of the room temperature drying to 4 days or preferably a drying at 70-100°C.

Processing



Related products

Other External Corona Products:

- 215.51 Conductive polyester fleece tape (200 – 400 ? cm/cm, thicker than 215.55)
- 215.51-03 Conductive polyester fleece tape (400 – 1000 ? cm/cm)
- 215.55 Conductive polyester fleece tape (200 – 400 ? cm/cm, thinner than 215.51)
- 432.10-01 Conductive Vetronite® sheet (slot packing material)
- 432.11 Conductive Vetronite® sheet (slot packing material)
- 92.200 Conductive Side Ripple Springs-Vetronite® (for side walls of slot wedges in generators)

Complementary Products:

- 8004 Semiconductive mastic (Internal Corona Protection)
- 8001 Semiconductive varnish (End Corona Protection)
- 217.01 / 217.21 Semiconductive tape (End Corona Protection)
- 217.02 / 217.22 Semiconductive tape (End Corona Protection)
- 217.31 Semiconductive tape (End Corona Protection)

Storage Conditions

Semiconductive varnish products should be stored in sealed original containers.
Pigmented varnishes tend to settle and must be stirred before use.

Shelf life

At 20 - 25°C at least 12 months

Form of delivery

Corona Shield varnishes are supplied ready for use in cans of 1, 2, 5, 10, 20 or 25 kg.

Health and safety

The varnishes are non toxic. We recommend however, that good hygiene practices, including hand washing and the use of barrier and cleansing creams is adopted.

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