

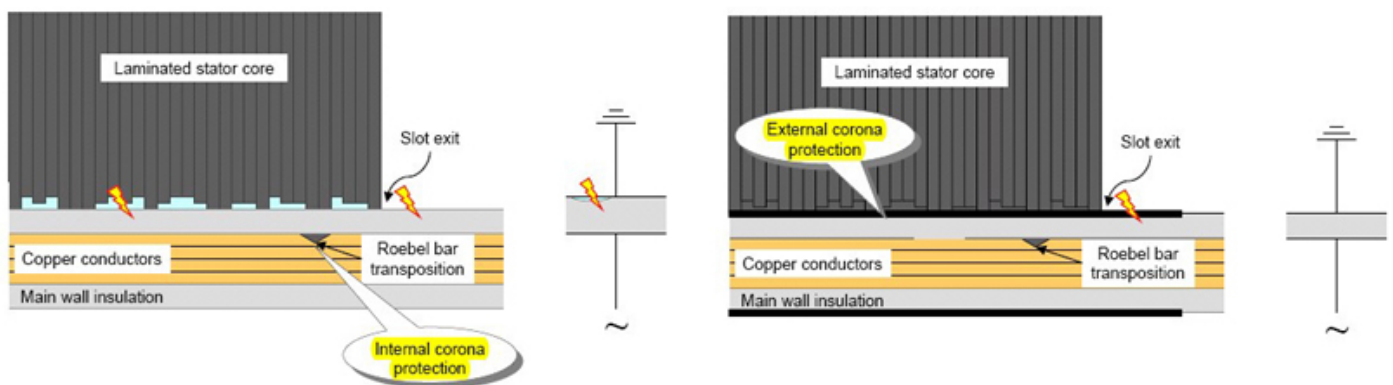
Anti corona

CoronaShield® C 215.51-03

- ▶ Resistivity 400 to 1000 Ω
- ▶ Impregnated polyester tape
- ▶ Suitable for VPI as well as RR
- ▶ For slot corona protection

General description

215.51-03 is a non woven polyester fleece, impregnated with an electrically conductive varnish, for use up to class F (155°C), suitable for VPI and Resin Rich 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 tape is intended for use in both Resin Rich and VPI processed machines. Compatibility with epoxy anhydride cannot be assumed, the compatibility with such resins must be verified by specific tests.

		Value	Test norm
Thickness	mm	0.10 ± 0.02	IEC 60394-2
Total weight	g/m ²	75 ± 10	ISO 536
Varnish weight	g/m ²	15 ± 3	IEC 60371-2
Polyester fleece	g/m ²	60 ± 6	ISO 536
Thermal class	°C	155	IEC 60085
Elongation	%	≥10	IEC 60394-2
Tensile strength	N/cm	≥30	IEC 60394-2
Surface resistivity	Ohm/square	400 - 1000	ASTM D 257

Specifications

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).

Processing Instructions

The tape must be tightly applied without any crinkles, half overlapped on the straight portion of the coil or bar either by hand or machine. The position should correspond to the outer end of the core support finger.

For the resin rich technique the tape is applied to the bar before pressing.

Related products

Other External Corona Products:

- 8003 Conductive varnish (mainly for maintenance)
- 215.51 Conductive polyester fleece tape (200 – 400 Ω cm/cm)
- 215.55 Conductive polyester fleece tape (200 – 400 Ω 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 Conductive 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

Polyester tape products should be stored in clean and dry conditions in the original packing.

Shelf life

At 20°C at least 24 months

Form of delivery

Corona Shield tapes are supplied as rolls, standard widths ranging from 10 to 980 mm with a length of 50 to 100 m. Our range of cores cover both manual and machine processing.

Health and safety

The tapes 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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