CharCoat IC Insulator Coating
TECHNICAL DATA SHEET

PRODUCT DESCRIPTION

CharCoat IC is a unique, room temperature vulcanising (RTV) silicone rubber formulation, specifically developed by CharCoat Passive Fire Protection, Mace Technologies and in collaboration with the Electric Power Research Group of the University of the Witwatersrand (South Africa), for the prevention of pollution flashover of high voltage outdoor insulation.

APPLICATION AREAS

CharCoat IC should be applied wherever pollution related flashovers of high voltage equipment insulation pose a significant threat to supply reliability. The coating of an insulator with this water repellent silicone elastomer inhibits the formation of conducting films on the insulator surface. This, in turn, ensures that dry band discharges – the critical stage in pollution flashover process – will not occur. Even in heavy pollution, an insulator coated with CharCoat IC will retain a flashover voltage significantly higher than the operational stresses.

TECHNICAL DATA

PROPERTIES	RESULT
Specific gravity @23°C	1.01 g/cm³
Viscosity	33.8 cSt
Color	Grey / Sky Blue
Dielectric strength @23°C	64 kV/mm
Surface resistivity	1.5 x 10^{13} Ω ohm
Volume resistivity	2.29 x 10^{13} Ωm ohm metre
Hydrophobicity	122° contact angle
Arc restistance	> 185 seconds
Tracking & erosion	> 470 minutes @ 2.5kV
Hydrophobicity recovery	After 100 hours corona test: HC6 After 48 hours: HC1-HC2
Skin over time @23°C	20 minutes

ADVANTAGES

The superior performance of hydrophobic silicone over other insulating materials in the most contaminated environments is well proven. What makes the silicone unique is the fact that its water repellency increases with time and that, owing to the migration of low molecular weight silanes that exist within the elastomer, these water repellent properties are imparted to contaminants which land on the surface. Leakage current activity is thus kept to a minimum and surface erosion is prevented.

ADVANTAGES

The CharCoat IC curing system has the benefits of not requiring any atmospheric moisture for vulcanisation to take place, the cure rate is independent of humidity, no by-products are released on curing and there is practically no shrinkage.

FEATURES AND BENEFITS

- Excellent arc resistance
- Fast hydrophobicity transfer to contaminating layers
- Fast recovery of hydrophobicity after arcing
- Resistance to damage by corona discharge
- Adhesion to glass, ceramic and resin surfaces
- Resistant to oil, ozone, various chemicals and petrols
- Ageing resistant
- 100% UV resistant
- After completion (full cure) temperature resistant down to -50°C

DIRECTION FOR USE:

Recommended conditions

1. Material and air temperature > 5°C, humidity < 80%
2. Recommended tip size for airless spraying: 0.010" – 0.012"
3. Pressure at least 6-7 bar
4. Fan width approx 15cm
5. Refer to complete application guide

PREPARATION BEFORE APPLICATION

IMPORTANT: CharCoat IC has to be stirred thoroughly before application

- All insulators to be clean and free of dust/oils/solids
- All surfaces must be primed with CharCoat IC Primer
- Catalyst must be added
- Mixing by a slow running stirrer
- Protect all areas not being coated from overspray
- Application by airless spraying or by compressor, high pressure hose and spray gun

COVERAGE RATE

1. Approx. 0.3-0.5mm dry = approx. 2.3L/m²
2. Thinning: Not required

DRYING

1. At 20°C object temperature and 65% relative
2. Touch dry: approx. 2 hours
3. Full cure: approx. Min. 24 hours

DIRECTION FOR USE (CharCoat IC Primer):

Recommended conditions

1. Material and air temperature > 5°C, humidity < 80%
2. Recommended tip size for airless spraying: 0.008" – 0.010"
3. Pressure at least 4-5 bar
4. Fan width approx 10cm
5. Refer to complete application guide

PREPARATION BEFORE APPLICATION (CharCoat IC Primer)

IMPORTANT: CharCoat IC Primer has to be stirred thoroughly before application

- All insulators to be clean and free of dust/oils/solids
- If the surface is just dusty or if close to the ocean with plain salt deposits, normal clean water will suffice for cleaning. if howerver the surface is heavily contaminated, we recommend cleaning with Toluene or Xylene
- Mixing by a slow running stirrer
- Protect all areas not being coated from overspray
- Application by airless spraying or by compressor, high pressure hose and spray gun

COVERAGE RATE (CharCoat IC Primer)

1. Approx. 30 microns dry = approx. 23L/m²
2. Thinning: Not required

DRYING (CharCoat IC Primer)

1. At 20°C object temperature and 65% relative
2. Touch dry: approx. 15 minutes
3. The primer should not be allowed to dry for more than 4 hours before application of CharCoat IC

PACKAGING

- 5 Litre drums - CharCoat IC
- 5 Litre drums - CharCoat IC Primer
- Steel drums
- Other sizes on request

TRANSPORT / STORAGE

- Transport and storage free from frost preferably at a minimum of +5°C to a maximum of +30°C
- CharCoat IC: UN1866 Class 3 DG
- CharCoat IC Primer: UN1993 Class 3 DG
- Opened pails must be sealed completely.

SHELF LIFE

When stored at the recommended conditions, unopened pails have a shelf life of 12 months from date of manufacture.

WARRANTY

12 months from date of manufacture

GENERAL INFORMATION

For safe handling information on this product, please refer to the Safety Data Sheet (SDS).

Use CharCoat IC in accordance with all applicable local and national regulation.

As regulations are often revised please request for the actual safety data sheet before using the product.

ADDITIONAL INFORMATION

Disclaimer:

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials used as well as to varying working conditions beyond our control we strictly recommend to carry out intensive trials to test the suitability of our products with regard to the required processes and applications. We do not accept any liability with regard to the above information or with regard to any verbal recommendation, except for cases where we are liable of gross negligence or false intention.

PRODUCT		
CharCoat IC		
APPROVALS	**DESCRITION**	
BS2918	Dielectric Strength @23°C	64 kV/mm
IEC 93	Surface Resistivity	1.5 x 10^{13} Ω ohm
IEC 93	Volume Resistivity	2.29 x 10^{13} Ωm ohm metre
IEC 60273	Hydrophobicity	122° contact angle
ASTM D 495-99	Arc Restistance	> 185 seconds
ADTM D 2303-97	Tracking & Erosion	> 470 minutes @ 2.5kV
CPRI REC Spec. 76/2006	Hydrophobicity recovery	After 100 hours corona test: HC6 / After 48 hours: HC1-HC2 Wettability class: HC1 - HC6

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