POWERSIL® 577 PLUS

Moisture Curing Silicone Rubber (RTV-1)

POWERSIL® 577 PLUS is a curable one-component silicon-in-water-emulsion.
Spray application forms a wet layer that dries and cures to a high voltage insulator coating with excellent electrical properties.

Properties

- Good resistance to weathering

Specific features

- Solvent-free

Technical data

Properties Uncured

Property	Condition	Value	Method
Density	23 °C	1.02 g/cm^3	DIN EN ISO 2811-2
Viscosity, dynamic at 0.1 % deformation	-	350000 mPa·s	DIN 54458
Viscosity, dynamic at 100 % deformation	-	1100 mPa·s	DIN 54458
Drying time	23 °C | 50 % r.h	6 h	-

These figures are only intended as a guide and should not be used in preparing specifications.

Properties Cured

Cure conditions: 14d / 23°C / 50% RH

Property	Condition	Value	Method
Color	-	Light grey	-
Density	23 °C	1.10 g/cm^3	DIN EN ISO 1183-1 A
Volume resistivity	-	< 5x10^{15} Ohmcm	IEC 62631-3-1
Permittivity	50 Hz	2.9	IEC 62631-2-1
Dielectric strength (1-mm-sheet)	-	< 28 kV/mm	IEC 60243-1

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Applications

- Insulator Coatings

Application details

A film of POWERSIL® 577 PLUS is applied onto porcelain or glass insulators as well onto the porcelain or glass surface of other high-voltage insulating equipment where surface contamination causes service problems.

POWERSIL® 577 PLUS forms a long-term hydrophobic surface. Thus the formation of wet conductive layers is prevented, the electrical leakage current is minimized and the risk of pollution flashovers is eliminated.

Processing

Coating Application
POWERSIL® 577 PLUS is an emulsion. Proper stirring is recommended before the material is used. The material appears creamy and to certain extends nonyielding when filled into a feeding reservoir of the spraying equipment. The material shows a strong decrease of the viscosity under shear. That is why an addition of water to adjust the viscosity and the spraying behavior should be done carefully and very small doses.

Surface pretreatment

The insulator surface to be coated should be clean and free of dust and grease. For cleaning the following operations are suggested:

- Proper cleaning by using water and a suitable detergent might be sufficient.
- Insulators that show an adhering pollution, such like cement, other mineral or chemical pollution layers should be cleaned by either "cob corn-" or carbon dioxide blasting.
- Any type of grease or fatty pollution is to be removed by using a suitable solvent like benzine or turpentine.
- Residual contaminants should be removed by thoroughly wiping.
- Finish the cleaning just before spraying POWERSIL® 577 PLUS with Isopropanol or an equivalent alcohol.

Check carefully that there is no of dirt or grease left before spraying!

In most cases it is not necessary to apply a primer before coating.

POWERSIL® 577 PLUS is ideally applied by spraying. For spraying application, the airless process was found to be efficient. The following equipment settings were found to be suitable:

- Flat nozzle of 0,33 mm, 20°
- Setting of pressure output 50 - 150 bar

The spray gun should be moved evenly across the surface at a distance of about 30 - 50 cm. Due to the thixotropic properties of POWERSIL® 577 PLUS the coating is normally applied with one spray cycle.

A typical dry film thickness is 0,4 mm to 0,5 mm. Thus, the theoretical consumption is 0,8 kg to 1,0 kg of POWERSIL® 577 PLUS per square meter of insulator surface. Take losses for overspray and cleaning of the equipment into consideration.

Rain can damage the coating. In case of rain, please protect the job site or stop application.

All spraying equipment should be cleaned with water immediately after use.

Maintenance

The product contains migratable matter that is able to encapsulate contaminants and to provide a hydrophobic surface. Coated insulators may appear dirty after some time in service. Nevertheless, washing and cleaning, especially with detergents and other chemicals is not recommended.

Inspection

The water repellent appearance can be evaluated by spraying with water. IEC 62073, “Guidance on the measurement of wettability of insulator surfaces” provides further information. A partly lowering of the effect does not necessarily require immediate action. Experience shows that the remaining parts of the insulator will provide the necessary insulation ability.

Physical damage, such like scratching can be easily repaired by brushing of fresh coating after partly cleaning with benzine.

To allow an instant replacement of broken insulators it is recommendable to store a number of coated spare insulators. These should be stored in a protective covering.

Packaging and storage

Storage

Minimum temperature allowed during storage and transportation: 5°C.

Maximum temperature allowed during storage and transportation: 30°C.

The 'Best use before end' date of each batch is shown on the product label.

Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site http://www.wacker.com.

QR Code POWERSIL® 577 PLUS

For technical, quality or product safety questions, please contact:

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