Technical Data Sheet

ACC18 (ESP802)

Silicone Conformal Coating

INTRODUCTION

ACC18 is a fast curing, low viscosity, 1-component, condensation curing silicone coating. The uncured product can be applied by pouring, brushing or spraying and is readily cured to a tough, transparent rubber. It can be used to coat printed circuit boards to prevent ingress of water and environmental contaminants.

Key Features

- Fast Room temperature cure
- Low viscosity
- Fluorescent UV aid for Production QA checks
- Excellent adhesion to many substrates
- Excellent adhesion to Humiseal 1.94V-0 boards
- Low odour
- RoHS compliant

APPLICATION

The bulk product may be sprayed or brushed onto the circuit. Spraying or brushing will give a film thickness of approximately 140 - 300 microns. The product contains an UV trace to allow inspection of the board after coating to ensure complete and even coverage.

Boards should be thoroughly cleaned before coating for best adhesion / performance. Coating over no clean fluxes is possible so long as other surface contaminants are not present.

CLEANING

The boards should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is possible. Some flux residues must be removed, as they become corrosive if left on the PCB. ACC manufacture a range of 100% Ozone Friendly cleaning products - both solvent and water based, all clean to military standards (please contact ACC for further information).

DIP COATING

This is not recommended for large scale production, small baths of < 5 litres are suitable but the ACC18 must not be exposed to the atmosphere for >4 minutes during any coating campaign and must be returned to the original container and sealed. Please note that continual use of ACC18 by this method will reduce the life of the product and may result in poor coating quality.

SPRAYING

Dispensing platforms include:

Nordson SL940
Applicator SC300 swirl coat 0.61mm low cavity.
60 – 100 mm/second and 25 psi.
Without dilution a coating thickness of approximately 140 - 300 microns can be achieved which is touch dry in 3 - 6 minutes at 25°C and 55% humidity.

PVA Delta 6:
Applicator FCS300 ES
Without dilution a coating thickness of 140 – 180 microns can be achieved which is touch dry in 3 - 6 minutes at 25°C and 55% humidity.

BRUSHING

The coating should be used at room temperature (above 16°C) using a good quality brush apply the product gently such as to achieve a good coating and not to disturb wiring. The board should be left to cure at 16 to 45°C with a relative humidity of >40%.

CURING TIMES / CONDITIONS

For brushing and manual spraying the film will be touch dry after 3 - 6 minutes at 25°C / 55% humidity) and the full properties of the coating will be obtained after approximately 16 minutes at room temperature. The maximum adhesion is reached after 24 hours.

DOUBLE COATING

Whilst this should not normally be required, a second coating may be applied after the first coating is cured to ensure the two coats bond together.

Properties of Uncured Product

(Tested at 25°C / 55 +/- 5% Humidity)

Property	Test Method	Value
Colour:		**Pale yellow**
Appearance		**Liquid**
Viscosity	Brookfield	**260 mPa.s**
Tack free time	AMB 001	**3 - 6 mins**
Cure time to 300 microns		**16 mins approx.**
Density (25°C g/ml)	ASTM D70	**0.98**

Properties of Cured Elastomer

After 7 days at 23°C / 55 +/- 5% Humidity on a 3 mm thick test sheet.

Property	Test Method	Value
Hardness, Shore A	ASTM D 2240-95	**36**
Flash Point	ASTM D93	**40°C**
Pensky Martin (closed cup)		
Min. Service Temp.		**-50°C**
Max. Service Temp.		**200°C**
Coefficient of thermal expansion:		
Volumetric, ppm/°C		**930**
Linear, ppm/°C		**310**
Electrical Properties:		
Volume Resistivity: (Ω.cm)	ASTM D-257	**3.6E+15**
Dielectric Strength: (kV/mm)	ASTM D-149	**>18**
Dielectric Constant: (1 kHz)	ASTM D-150	**2.49**
Dissipation Factor: (1 kHz)	ASTM D-150	**0.0006**

STORAGE / SHELF LIFE

When stored in original containers at 5 to 40°C the shelf life is expected to be 12 months. Once opened, refrigerated storage at <10°C is recommended.

HEALTH AND SAFETY

Material Safety Data Sheets are available at www.acc-silicones.com or upon request through the ACC Silicones sales office

PACKAGING

ACC coatings are available in a variety of packaging. Please contact our sales department for more information.

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