

SILCOSET® 153 1-Part Adhesive Sealant

Introduction

Silcoset® 153 is a ready-to-use adhesive sealant paste that cures on exposure to air to a resilient silicone elastomer. Its combination of ease of application, excellent adhesion, durability, versatility and good electrical properties has established Silcoset® 153 for applications in every type of industry.

Key Features

- Good Electrical Insulation.
- Resistance to ageing, weathering, ozone and corona.
- Resistance to oxidation and many oils, chemicals and solvents.
- Excellent bonding to a wide range of substrates.
- Flexibility from -60°C to +225°C.
- UL recognised file number E334038

Use and Cure Information

How to Use

Surfaces to be bonded should be dry and free from grease, oil, dust, release agents, etc. Non-porous surfaces, including that of cured silicone rubber, should be degreased with solvent, e.g. trichlorethylene, toluene or white spirit. Glass is best degreased with MEK (methyl ethyl ketone). Mild steel surfaces should be prepared by the use of a n abrasive disc. Loose debris should be removed before application. For increased adhesion contact ACC Silicones for information on primers.

Application and Cure

On exposure of the applied Silcoset® 153 to atmospheric moisture, the curing process begins with the formulation of surface skin and progresses right through the material with the elapse of time.

Cure rate is dependent on humidity and temperature but under normal conditions a tack free surface will be obtained in 10 to 20 minutes and a 4 mm thickness will be cured within 24 hours. The maximum thickness to be cured in one operation should not be greater than 12 mm if only one surface is exposed to atmosphere.

The rate of cure can be increased by heating, but temperatures in excess of 80°C should not be used with Silcoset® 153 thickness greater than 0.3 mm. It should be noted that conditions of high temperature and low humidity during cure can adversely affect the adhesion and physical properties of Silcoset® 153.

Silcoset® 153 liberates traces of acetic acid during the curing process. Under normal conditions the acetic acid is rapidly dispersed, but in confined situations it may be necessary to provide supplementary ventilation. Silcoset® 153 is odourless and taint-free when fully cured.

Property

Uncured Product

Property	Test Method	Value
Colour:		Translucent
Appearance:		Thixotropic paste
Tack Free Time:		4 minutes *
3mm Cure Through:		7 hours *
Extrusion Rate:		304g / minute

* measured at 23+/-2°C and 65% relative humidity.

Cured Elastomer

(after 7 days cure at 23+/-2°C and 65% relative humidity)

Tensile Strength:	BS903 Part A2	2.32 MPa
Elongation at Break:	BS903 Part A2	280 %
Youngs Modulus:		0.65 MPa
Modulus at 100% Strain:	BS903 Part A2	0.91 MPa
Tear Strength:	BS903 Part A3	5.50 kN/m
Hardness:	BS903 Part A26	39° IRHD
Specific Gravity:	BS 903 Part A1	1.05
Linear Shrinkage:		<1.0%
Compression Set:		45 %
Peel Strength:		14.2 N/mm
Thermal Conductivity:		0.20 W/mK
Coefficient of Thermal Expansion:		
Volumetric		876 ppm / °C
Linear		292 ppm / °C
Min. Service Temperature:		-60 °C
Max. Service Temperature:	AFS 1540B	250 °C

Electrical Properties

Volume Resistivity:	ASTM D-257	4.70x10 ¹⁴ Ω.cm
Surface Resistivity:	ASTM D-257	7.77x10 ¹⁵ Ωm
Dielectric Constant at 1MHz:	ASTM D-150	3.2
Dissipation Factor at 1MHz:	ASTM D-150	1.2x10 ⁻³

Adhesion Testing

Good unprimed adhesion to many substrates including glass stainless steel, aluminium and most plastics. Customers are advised to carry out their own tests on clean, degreased substrates to ensure satisfactory adhesion is achieved.

All values are typical and should not be accepted as a specification.

Health and Safety - Material Safety Data Sheets available on request.

Packages – 75ml and 310 ml cartridges, 20 litre pails. Arrangements can be made to supply in other bulk containers.

Storage and Shelf Life – Expected to be 24 months in original, unopened containers below 40°C.

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