Product Information

DOW CORNING

DOW CORNING® Q4-2817 Fluorosilicone Sealant

FEATURES

- High strength
- Retains its properties under exposure to fuels, oils and solvents
- Excellent adhesion and bond strength to most materials
- Resistant to weathering, moisture and ozone
- Flexible from -55°C to +260°C
- Easy to use
- One part room temperature cure
- Cures at room temperature to form a tough, rubbery solid

One part, ready to use, high strength solventless fluorosilicone elastomer paste

APPLICATIONS

- Developed for use on equipment exposed to solvents, oil and fuels.
- Protects surfaces exposed to fuel from erosion and corrosion.
- Applications include bonding or sealing of components exposed for long periods to moisture vibration, shock, fuel and solvents.
- Excellent material for sealing aircraft fuel tanks.

TYPICAL PROPERTIES

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

CTM*	ASTM*	Property	Unit	Value
		As supplied, at 25°C and 50% relative humidity		
		Color		Red
0022	D792	Relative density at 25°C		1.8
0208		Non-volatile content after 24 hours at 70°C	%	97
0364		Extrusion rate, (3mm orifice, 0.6 MPa air)	g/minute	120
0062		Flow (MIL-S-7502 Jig)	cm	Nil
0098		Skin-over time	minutes	11
0095		Tack-free time	minutes	40
		Set up time (for cure to penetrate 3mm from exposed surface)	hours	120
		Full cure time (to develop optimum physical properties)	days	14
		As cured - after 14 days at 25°C and 50% RH		
0099	D2240	Durometer hardness, Shore A		43
0137A	D412	Tensile strength	MPa	4.5
0137A	D412	Elongation at break	%	375
0159A	D624	Tear strength - die B	kN/m	15
		Brittle point	°C	Below -65
0293		Peel strength	kN/m	10.5
		Fuel resistance - after exposure in jet reference fuel for 14 days at 60°C		
0099	D2240	Durometer hardness, Shore A		37
0137A	D412	Tensile strength	MPa	3.9
0137A	D412	Elongation at break	%	255
0293		Peel strength[1]	kN/m	6.3

TYPICAL PROPERTIES (continued)

CTM*	ASTM*	Property	Unit	Value
		Fuel resistance - after exposure for 14 days at 25°C		
		JP-4, swell	%	6.5
		JP-5, swell	%	1.2
		Fuel, swell - after exposure in jet reference for 14 days at 80°C	%	15

1. Measured on specimens cured for 14 days at standard conditions on 2024 clad aluminium treated with DOW CORNING® 1200 primer.
* CTM: Corporate Test Method, copies of CTMs are available on request.
ASTM: American Society for Testing and Materials.

HOW TO USE

Substrate preparation

DOW CORNING Q4-2817 Fluorosilicone Sealant adheres well to most materials used in the aerospace and aircraft industries. Typical materials include glass, cured silicone rubber, cork, phenolic, polyester, epoxy, silicone resin laminates and most metals including stainless steel, titanium and aluminium. It may not adhere well to polyethylene or certain plastics and organic materials (including rubber), which bleed or exude plasticisers.

DOW CORNING Q4-2817 Fluorosilicone Sealant should always be applied to clean, dry surfaces. A satisfactory bond will usually be formed without using a primer on degreased surfaces. However, for maximum adhesion use of DOW CORNING 1200 Primer is recommended. For best results:

1. Clean the surface with a chlorinated solvent (see Handling Precautions) and a slightly abrasive pad or a coarse lint-free cloth.
2. Rinse cleaned surface with acetone or methyl ethyl ketone.
3. Apply a thin coat of primer by dipping, brushing or spraying.
4. Allow the primer to dry for at least 1 hour, according to relative humidity.
5. Silicone rubber surfaces should not normally be primed, but only roughened slightly with abrasive paper and rinsed with acetone. In thin sections, a primer may be needed.

How to apply

DOW CORNING Q4-2817 Fluorosilicone Sealant is supplied in a polyethylene cartridge which can be used with handguns or power-operated guns. A source list for this equipment is available upon request.

Once extruded, DOW CORNING Q4-2817 Fluorosilicone Sealant (see Handling Precautions) sealant will not flow or slump and can be easily tooled with a spatula or knife blade before it starts to skin over.

DOW CORNING Q4-2817 Fluorosilicone Sealant may be dispersed in methyl ethyl ketone and applied by brushing, dipping or spraying.

If DOW CORNING Q4-2817 Fluorosilicone Sealant is being used as an adhesive between two surfaces, it should be applied to one surface in a uniform thickness of 0.25-0.75mm. The other surface should be put in place and enough pressure exerted to displace the air and assure uniform contact between adhesive and both surfaces. Best adhesion is obtained with a 0.25-0.75mm glue line.

Working and cure time

DOW CORNING Q4-2817 Fluorosilicone Sealant begins curing on exposure to moisture in the air. It will skin over in 15 minutes or less at ordinary room temperature. Skin-over time may be reduced under conditions of high temperature and humidity. The material beneath the "skin" continues to cure, and sections up to 3mm thick become a rubbery solid in about 5 days. Curing time increases as the thickness of the sealant increases and also as the degree of confinement increases.

Absolute confinement can prevent cure and cause inferior adhesion. Every application involving confinement during cure should be throughly tested before commercialisation. Inadequate cure can result in a softening of the sealant at elevated temperatures.

If adhesion fails to develop due to confinement or excessive sealant thickness, a layer of dispersed sealant in methyl ethyl ketone should be applied and allowed to cure completely before applying sealant.

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE FROM YOUR LOCAL DOW CORNING SALES REPRESENTATIVE.

USABLE LIFE AND STORAGE

When stored at or below 32°C in the original unopened containers DOW CORNING Q4-2817 Fluorosilicone Sealant has a usable life of 12 months from the date of production.

As DOW CORNING Q4-2817 Fluorosilicone Sealant cures by reaction with moisture in air, keep the container tightly sealed when not in use. A plug of used material may form in the tip of a tube or cartridge during storage. This is easily removed and does not affect the remaining contents.

PACKAGING

DOW CORNING Q4-2817 Fluorosilicone Sealant is available in 5.4floz cartridges, net weight.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area.

For further information, please consult your local Dow Corning representative.

WARRANTY INFORMATION - PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.