CS 2727

FLEXIBLE EPOXY JOINT SEALER

Technical Data Sheet

Description

CS 2727 is a flexible epoxy compound especially useful for sealing concrete joints located in liquid oxygen (LOX) spillage area, but not limited to that application. CS 2727 withstands the LOX impact test and has excellent resistance to water, fuels, and extreme weathering.

- Two-component flexible epoxy/amine system
- Room temperature cure
- Excellent adhesion to concrete, wood, and other materials without a primer
- Uncured CS 2727 is a lower viscosity material, easily pourable
- CS 2727 is currently sold to MIL-S-38249 Type 1.

CS 2727 was initially approved in 1959 by the USAF Ballistic Missile Division for sealing concrete joints located in LOX spillage areas on missile launch facilities. CS 2727 also complies with requirements from medical gas providers for the construction of joints in concrete pads used for the storage of liquefied medical oxygen. The applicator is responsible for obtaining suitable joint designs from the provider of the medical or industrial gas equipment.

The joint to be sealed with CS 2727 should be 0.250" – 0.500" (6.35 – 12.7 mm) in width and a maximum of 1.000" (25.4 mm) in depth. A filler of non-combustible, inert filler such as gypsum may be used to reduce the overall depth. Larger dimensions could result in cracking or dishing in the cured compound or a pulling away from the sides of the joint.

Coverage:
A gallon kit contains 173 cubic inches (2.84 L) of material, it is enough for 57 linear feet with a ¼" x 1" joint (17 m with a 6 mm x 25 mm joint). Quart kits are also available.

The number of gallon kits needed is as follows:

$$\#\ \text{kits} = \frac{(\text{length in feet}) * 12 * (\text{width in inches}) * (\text{depth in inch})}{173}$$

In metric units, the number of gallon kits needed:

$$\#\ \text{kits} = \frac{(\text{length in m}) * (\text{width in mm}) * (\text{depth in mm})}{2835}$$

The following technical information and data are typical for the material but should not be used for specification or acceptance purposes. Testing was performed in accordance with AS5127/1.

Typical Application Properties

At 77°F (25°C) and 50% relative humidity

Color	
Base	White
Curing agent	Clear brown
Mixed	Light Yellow
Mix ratio	
By weight	100:20 (base/curing agent)
Viscosity (Brookfield #7 @ 2 rpm)	500 – 1000 Poise (50 – 100 Pa*s)
Work life	15 minutes, minimum
Tack-free time	< 2 hours
Cure rate	75A – 85A at 48 hours

Typical Performance Properties

Cured 14 days at 77°F (25°C) and 50% relative humidity

Specific gravity	1.35
Ultimate hardness	80A
% solids	99%
Tensile strength	370 psi (2.6 MPa)
% Elongation	90
Adhesion to concrete and wood	Excellent
Shrinkage	Negligible
Resistance to fuel and water	Excellent

Surface Preparation

Surfaces must be clean, dry, and free of dirt, grease, wax, bond-breakers, rust, paint, and other surface contamination. Sandblasting, wire brushing or commercial concrete cleaners may also be used to clean contaminated surfaces.

Concrete must be at least 28 days old. Concrete can be etched with 5 – 10% muriatic acid (commercial hydrochloric acid), followed by thorough neutralization with a basic wash such as household ammonia.

Note that surface temperatures below 70°F (21°C) will significantly increase the time required to cure.

Storage

Unmixed CS 2727 has a shelf life of at least 12 months from date of manufacture when stored below 80°F or below in the original, unopened package.

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Mixing Instructions

Mixed CS 2727 has a limited application life. Do not mix the kit components until all surfaces have been prepared and the material is ready for use.

CS 2727 comes packaged in kit form with pre-measured amounts of base and curing agent. These components are matched and tested together; do not mix lots. Mix according to the indicated mix ratios; using the incorrect ratio can affect the sealant properties and voids the warranty. Do not thin the material with solvents.

Bring the temperature of the kit to 70°F – 80°F (21°C to 27°C) before mixing. Mix the two components together thoroughly either by hand or with a mechanical mixer.

Curing

CS 2727 will cure to approximately 50A in 24 hours at 77°F (25°C). An accelerated cure is possible with the application of heat, but do not exceed 120°F. At temperatures below 77°F (25°C), the time to cure is doubled for every 18°F (10°C) reduction in temperature.

Clean up

Cured epoxy materials are difficult to remove. Cleaning tools and other surfaces is best done when the material has not yet cured. For fresh material, we advise using SOCOMORE DS 108, DIESTONE DLS or MEK. Commercial epoxy strippers are required to remove cured CS 2727.

Packaging

CS 2727 is available in quart and gallon kits. Bulk packaging may be available; contact Sales.

Health and Safety

Before using this material, read and understand the Safety Data Sheet (SDS) as it includes information on health, physical, and environmental hazards, as well as handling precautions and first aid recommendations. SDSs are available upon request.

Emergency Contact Chemtrec 800-424-9300
Outside North America 703-527-3887
Keep out of the reach of children
For industrial use only

Warranty, Limited Remedy, and Disclaimer

All recommendations, statements, and technical data contained herein are based on tests or experience that we believe to be reliable and correct, but accuracy and completeness of such information are not guaranteed and are not to be construed as a warranty, either expressed or implied. Flamemaster does not warranty the performance of fuel tank sealants or coatings when subjected to fluids or fuels other than those specified by the applicable specification.

Users shall rely on their own information and tests to determine suitability of the product for the intended use and users assume all risk and liability resulting from their use of the product. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product of this manufacturer which proves to be defective. Neither seller nor manufacturer shall be liable to buyer or any third person for any injury, loss, or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements other than those contained in a written agreement signed by an officer of the manufacturer shall not be binding upon the manufacturer or seller.

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This technical data sheet replaces and cancels the previous one.