

3M™ Scotchkote™ Liquid Epoxy Coating 327

Data Sheet and Application Instructions

Product Description

3M™ Scotchkote™ Liquid Epoxy Coating 327 is a two-part system designed to protect steel pipe and other metal surfaces from the harsh affects of corrosion.

Intended Uses

- As a patch material
- As a girthweld coating
- As an internal lining
- As a stand alone coating for pipe rehabilitation.
- In a wide variety of other field applications where corrosion protection of metal is required

Product Features

- No solvents needed
- High build, up to 45 mils/1150 microns in one application
- Applicable by cartridge, brush, roller or plural component spray
- Excellent adhesion
- 100% solids
- Can be applied to a substrate as cold as 50°F/10°C

3M™ Scotchkote™ 327 Coverage per kit size

Kit	Vol cc	Pounds	Coverage in sq ft @ mils		
			10	20	30
450 ml	450	1.42	19.07	9.53	6.36
5 US Gallons x 4	75500	239	3200	1600	1070
55 US Gallons x 4	830000	2600	35200	17600	11700

Kit	Vol cc	Kg	Coverage in sq m @ mils		
			10	20	30
450 ml	450	0.64	1.77	0.88	0.59
20 Litres x 4	80000	115	315	157	105
200 Litres drum x 4	800000	1152	3149	1574	1050

Chemical Resistance

Scotchkote 327 is resistant to damage by acids and bases in the pH range of 2 to 14. It is also resistant to hydrocarbons such as crude oil, motor oil, gasoline and many solvents. Testing is suggested if the coating is to be used in continual contact with oxidizing agents such as sodium hypochlorite (bleach) and aggressive solvents such as methyl ethyl ketone (MEK).

For use as a joint coating, a refurbishing coating or as a pipe coating:

1. Remove oil, grease and loosely adhering deposits.
2. Abrasive blast clean the surface to NACE No. 2/SSPC-SP10, ISO 8501:1, Grade SA 2 1/2 near-white metal.
3. Ensure the abraded surface is cleaned of abrading debris with the use of an air blast or a clean lint free cloth.
4. Within two hours of blasting as per the above cleaning process and with the metal above 10°C and a minimum of 3°C above the dew point, apply Scotchkote 327 at a minimum thickness of 635 microns or 25 mils. If coating takes place between two and four hours after the blast cleaning process, be sure to visually inspect the substrate for any flash rust that may have appeared on the substrate. If flash rust has occurred, repeat the blast process to eliminate before coating.
5. Allow to cure.
6. Visually or electrically inspect the coating for defects.
7. Repair all defects using Scotchkote 327 as a repair material.

For use as a repair material in the field where scratches or other holidays may have occurred as a result of shipping damage, etc., and the bare area of steel substrate exposed exceeds approximately 20 mm diameter or about 0.6 sq. in. or 400 sq. mm:

1. Remove oil, grease and loosely adhering deposits.
2. Abrade the FBE surface with medium grit sandpaper (approximately 80 grit). Ensure that the surrounding FBE is roughened for 20 mm on all sides. An anchor pattern of 40 to 100 microns is preferred on the substrate.
3. Ensure the abraded surface is cleaned of abrading debris with the use of an air blast or a clean lint free cloth.
4. With the metal above 10°C and a minimum of 3°C above the dew point, apply Scotchkote 327 at a minimum thickness of 635 microns or 25 mils.



Number of U.S. Quarts/0.95 L needed per weld*

Pipe Diameter (inches)	Total Length to Coat (inches)			
	6	8	10	12
6	0.059	0.079	0.099	0.118
12	0.118	0.157	0.197	0.236
20	0.197	0.262	0.328	0.393
24	0.236	0.314	0.393	0.472
30	0.295	0.393	0.491	0.590
36	0.354	0.472	0.590	0.708
42	0.413	0.550	0.688	0.825
48	0.472	0.629	0.786	0.943

*Theoretical coverage. For additional information, contact your local sales rep.

Properties

Properties	Value
Color	Blue-Green
Mix Ratio	3A : 1B by volume 78.9% : 21.1% by weight
Viscosity	Both Part A and B are thixotropic. See application for spray requirement.
Shelf Life (unopened container)	24 months
Specific Gravity	1.44 mixed
Coverage	134 sq ft/lb/mil (0.69 sq m/kg/mm)
Minimum Coating Thickness	25 mil recommended
Maximum Operating Temperature	200°F/95°C

Typical Test Properties

Property	Test Description	Typical Value
Dry to Touch Time	Shore D > 65	50°F / 10°C 4.5 hrs 68°F / 20°C 2 hrs 86°F / 30°C 1 hr
Approximate Back Fill Time (For additional information see chart below)	Shore D > 80	50°F / 10°C 4.5 hrs 68°F / 20°C 3 hrs 86°F / 30°C 1.5 hrs 104°F / 40°C 1 hr
Cathodic Disbondment	CSA Z245.20-02 clause 12.8	Disbondment Radius 73°F / 23°C 28 days -1.51 to 1.53 V (SCE) 1.3 149°F / 65°C 28 days -1.51 to 1.53 V (SCE) 2.1 176°F / 80°C 28 days -1.51 to 1.53 V (SCE) 3.1
Adhesion of Coating (Wet Adhesion)	CSA Z245.20-02 clause 12.14	149°F / 65°C 28 days Ratings of 1 176°F / 80°C 28 days Ratings of 1
Impact Resistance	CSA Z245.20-20 Clause 12.12	See Chart Below

Panel Number	Test Temperature	Joule Value	Holiday Detection Voltage	Average DFT (mils)
1	-40°F / -40°C	1.5	2500	No holidays detected
2	-22°F / -30°C	1.5	2500	No holidays detected
3	14°F / -10°C	1.5	2500	No holidays detected
4	32°F / 0°C	1.5	2500	No holidays detected
5	73°F / 23°C	1.5	2500	No holidays detected
6	122°F / 50°C	1.5	2500	No holidays detected
7	149°F / 65°C	1.5	2500	No holidays detected
8	176°F / 80°C	1.5	2500	No holidays detected

Shore D Hardness vs. Time and Temperature

Time	50°F / 10°C	68°F / 20°C	86°F / 30°C	104°F / 40°C
1 hour	—	62	65	82
1.5 hours	52	64	83	87
2 hours	—	71	87	89
2.5 hours	52	76	89	89
3 hours	—	84	89	89
3.5 hours	52	86	89	89
4.5 hours	82	87	89	90
6 hours	—	87	89	90
7 hours	85	89	89	90
24 hours	89	89	89	90
48 hours	89	89	89	—

3M™ Scotchkote™ 327 Brush Grade Application

Instructions

1. Mix separate parts A and B.
2. Pour part B into part A. Scotchkote 327 has a mix ratio of 3A to 1B by volume.
3. Thoroughly mix combined parts into a uniform color.

Recommendations

- Prepare only the quantity of coating that can be applied in this period of time within the pot life.
- A 1/4"/6 mm nap roller is suggested.
- For speed of application, and to extend the working life of the product, pour mixed product directly to the top of the substrate/pipe, then spread the mixture down around pipe to the desired thickness.
- Overlap existing pipe coating no less than 1"/25 mm

Application Options

For ease of application in the plant or in the field, Scotchkote 327 is available in 450 ml cartridges. These cartridges automatically dispense appropriate amounts of both parts A and B. Simply dispense desired amount into a cup, mix to a uniform color, and apply to the properly prepared damaged area. Application is usually done with a tongue dispenser or a tool capable of spreading material over void.

Working Times: At summer temperatures approximately 4 - 5 minutes is the working or usable time for Scotchkote 327. It will thicken quickly after this dwell time. In colder weather the useable working time lengthens considerably. Always have Scotchkote 327 above 15°C before handling and always have the surface that it is being applied to at least 3°C above the dew point.

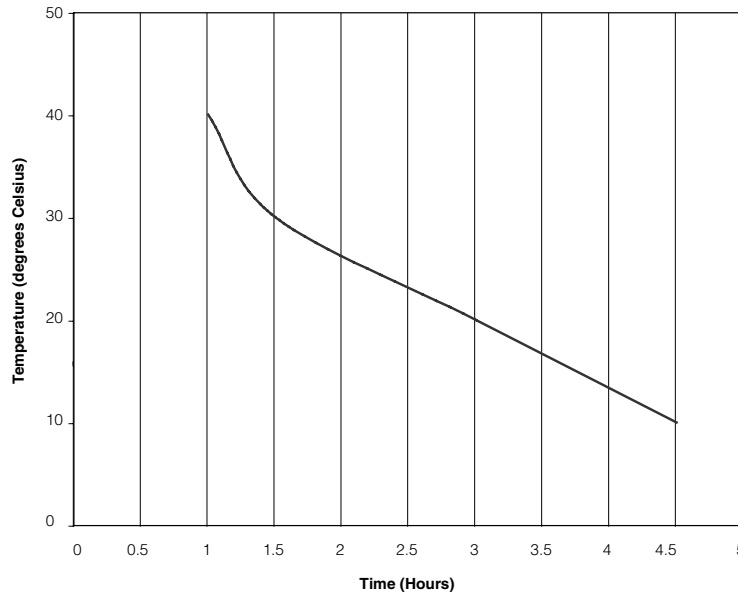
Multiple Coats

Scotchkote 327 has been formulated to achieve a coating thickness of 30-45 mils in one coat depending on the correct substrate temperature. The recoat window is dependent on time and temperature. If the first layer is tacky to touch, no further surface preparation is needed. Immediately apply the next coat while the first layer is still tacky. If the coating is not tacky to touch then surface preparation is required by means of light abrasion to achieve an anchor pattern.

Equipment Clean-Up

MEK or toluene may be used to clean spray equipment, rollers and brushes. Utilize proper safety guidelines.

3M Scotchkote 327 Epoxy Coating System Cure Timer Schedule



Handling and Safety Precautions

Read all Health Hazard, Precautionary and First Aid, Material Safety Data Sheet, and/or product label prior to handling or use.

Ordering Information/Customer Service

For ordering technical or product information, or a copy of the Material Safety Data Sheet, call:
Phone: 800/878-8837
Fax: 925/427-6202

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