

# 3M™ Scotchkote™ Fusion-Bonded Epoxy Coating XC-6171

## Data Sheet

### Product Description

3M™ Scotchkote Fusion-Bonded Epoxy Coating XC-6171 is a one-part, heat curable, thermosetting, powdered epoxy coating designed for interior corrosion protection of production tubing, line pipe, and fittings. When applied over a primer, Scotchkote XC-6171 meets Saudi Aramco seawater and sour gas service requirements.

### Temperature Operating Range

Scotchkote coating XC-6171, when properly applied, should perform in a satisfactory manner on pipelines operating between -100°F/-73°C to 203°F/95°C. For temperatures between +170°F/77°C to 203°F/95°C, laboratory tests indicate that the thicker coatings may improve the service capability. However, it is difficult to accurately predict field performance from the laboratory data due to the wide variation in actual field conditions. Soil types, moisture content, temperatures, coating thickness and other factors specific to the area all influence the coating performance and the upper temperature operating limit.

#### Typical Properties

Property	Value
Color	Beige
Specific gravity	1.70
Coverage	113 ft <sup>2</sup> /lb/mil 0.587 m <sup>2</sup> /kg/mm
Shelf life 65°F/18°C	24 months
Gel time@ 380°F/193°C (surface)	120-160 seconds (Line Pipe) 70-100 seconds (Custom)
Cure time	60 minutes
Glass Transition Temperature CSA onset:	105°C Average

### General Application Information

1. Remove oil, grease and loosely adhering deposits.
2. Abrasive blast-clean the surface to near-white in accordance with NACE No. 2/SSPC-SP10 ISO 8501:1, Grade SA 2 1/2 near-white finish.
3. Prime surface with Scotchkote 500N water base primer or Scotchkote 345 liquid phenolic primer.
4. Place part in preheat oven until it reaches a temperature of 340°F/171°C to 425°F/218°C. If using a phenolic primer, do not exceed 30 minutes at temperature.
5. Deposit XC-6171 coating onto the interior of the pipe at the specified thickness.

6. Place coated part in a post cure station to reach a temperature of 400°F/204°C to 450°F/232°C. Total time in post cure station must be a minimum of 30 minutes, but not more than 90 minutes.
7. Electrically inspect for holidays after coating has cooled to 200°F/93°C or lower.
8. Repair all holidays.

#### Coating Test Data

Property	Test Description	Result
Mandrel Bend	Saudi Aramco 09-SAMSS-091 600-750 micron thickness	10.5 pipe diameters (5.4°/PD)
Autoclave (Saudi Aramco 09-SAMSS-091)	Treated Seawater Service Temperature 203°F/95°C Pressure 3000 psi/20.7 MPa Sample is immersed halfway in ASTM D-1143 solution (high solids brine) and pressurized with N <sub>2</sub>	Pass*
	Wet, Sour Gas Crude Service Temperature 203°F/95°C Pressure 3000 psi/20.7 MPa Sample is immersed halfway in Formation Water (high solids brine) and pressurized with 3% CO <sub>2</sub> , 3% H <sub>2</sub> S, and 94% CH <sub>4</sub>	Pass*
	Wasia Water Service Temperature 203°F/95°C Pressure 3000 psi/20.7 MPa Sample is immersed halfway in Wasia Water (high solids brine) and pressurized with 100% CO <sub>2</sub>	Pass* (Phenolic primer is required for this service)
Abrasion Resistance	Saudi Aramco 09-SAMSS-091 ASTM D 4060	0.08 - 0.14 g weight loss
Adhesion	Saudi Aramco 09-SAMSS-091	Pass
Hardness	Shore D	80 Shore D
Water Absorption	ASTM D 570-95	1.07 %
Dielectric Strength	ASTM D 149-95a	1306 volts/mil/51 kV/mm
Adhesion to Steel (shear)	ASTM D 1022	5264 psi/36.3 MPa
Impact	ASTM G14 - modified (coated 3x3x1/8 inch panel to a thickness of 16 mils)	Pass (160 in•lbs)

\* Pass means excellent adhesion, no blistering, no cracking or delamination.



## 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.

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Phone: 800/722-6721  
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