



Scotchkote™

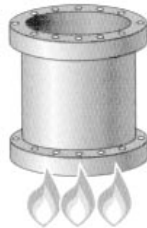
206N Fusion Bonded Epoxy Coating (Fluid Bed Grade)



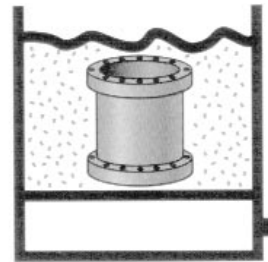
Rust



Blast



Preheat



Apply



Cure

Product Description

3M™ Scotchkote™ 206N Fluid Bed Grade Fusion Bonded Epoxy Coating is a one-part, heat curable, thermosetting epoxy coating designed for corrosion protection of metal. The epoxy is applied to preheated steel as a dry powder which melts and cures to form a continuous, insulative corrosion barrier. This bonding process provides excellent adhesion and coverage on pipe, fittings, valves, couplers, pumps and other equipment. Scotchkote 206N coating is resistant to corrosive soils, hydrocarbons, harsh chemicals and sea water.

Product Features

- No primer required.
- Particularly suitable for large fluidized bed application on complex shapes.
- Gel and flow characteristics balanced to give no-sag application on large parts.

General Application Steps

1. Remove oil, grease and loosely adhering deposits.
2. Abrasive blast clean the surface to SSPC-SP10 or NACE No. 2 near-white, ISO 8501-Sa 2.5.
3. Apply mechanical masks or mask with Scotch™ Glass Cloth Tape 361 or Scotch™ Aluminum Foil Tape 425 as required.
4. Preheat article to the desired application temperature.
5. Deposit Scotchkote 206N coating using fluidized bed to the specified thickness. Due to the fast gel and cure time of this powder, the surface to be coated should not be subjected to the powder application source for a period that exceeds the gel time at the temperature used, to prevent the development of a grainy, laminated surface. For example: At 400°F (204°C), the powder application must be completed in less than 45 seconds.

- Fast curing for high application productivity.
- Can be machined by grinding or cutting to meet close tolerance requirements.
- Allows easy visual inspection of coated articles.
- Can be painted with alkyd paint, acrylic lacquer or acrylic enamel for color coding.
- Will not sag, cold flow or become soft in storage.
- Lightweight for lower shipping costs.
- Long-term storage under most climatic conditions.
- Protects over normal service temperature range.
- Resists soil stress and backfill compaction.
- High adhesion and toughness.
- Resists cathodic disbondment.
- Long-term performance history in water, sewage and other service environments.
- Scotchkote 206N has been tested and certified to ANSI/NSF Standard 61, Drinking Water System Components.



6. Cure according to the cure guide.
7. Visually and electrically inspect for coating flaws after the coating has cooled to 200°F (93°C) or lower.
8. Repair all defects using 3M Scotchkote™ 312 Liquid Epoxy Coating.

Cure Specifications

Scotchkote 206N coating can be cured using one of the time and temperature combinations in the cure guide to achieve optimum performance properties. At higher application temperatures, cure is by residual heat. Post-baking is not required, provided the article has enough mass or heat retention to complete the curing process. Listed cure times are based on 0.2 inch (5,1 mm) thick steel. Thicker steel can reduce cure time substantially.

3M™ Scotchkote™ 206N Fluid Bed Grade Coating Cure Guide

Temperature of Article at

Time of Powder Application	Typical Gel Time	Cure Time
475°F (246°C)	25 seconds	3 minutes
450°F (232°C)	30 seconds	4 minutes
425°F (218°C)	37 seconds	6 minutes
400°F (204°C)	45 seconds 1	0 minutes

Typical Properties

Property	Value
Color	Blue-Green
Specific Gravity - Powder (Air Pycnometer)	1,44
Coverage	134 ft ² /lb/mil (0,70 m ² /kg/mm)
Fluid Bed Density	25 lbs/ft ³ (398 kg/m ³)
Shelf Life at 80°F (27°C)	12 months
Gel Time 450°F (232°C)	22-37 seconds
Minimum Explosive Concentration	0.10 oz/ft ³ (102 g/m ³)
Ignition Temperature	986°F (530°C)

Test Data - Coating

Property	Test Description	Results
Adhesion	ASTM D 4551-89	> 3000 psi (210 kg/cm ²)
Adhesion to Steel (Shear)	ASTM D 1002	6150 psi (433 kg/cm ²)
Impact	Gardner 5/8 in (1,6 cm) diameter tup	160 in-lbs
	1/8" x 3" x 3" (0,32 cm x 7,6 cm x 7,6 cm) steel panel	1,8 kg•m
Hardness	Barcol ASTM D 2583	18
Abrasion Resistance	ASTM D 4060	0,114 g loss
	CS-17 1000g weight / 5000 cycles	
Thermal Shock	310° to -100°F (154° to -73°C)	10 cycles, no effect
	4" x 4" (10,2 cm x 10,2 cm) coated panel	
Penetration	ASTM G 17	0.0
	-40° to 240°F (-40° to 116°C)	
Tensile Strength	ASTM D 2370	9300 psi (654 kg/cm ²)
Elongation	ASTM D 2370	6.9 %
Compressive Strength	ASTM D 695	11600 psi (819 kg/cm ²)
Coefficient of Friction	AP RP5L2-1968, Appendix 8	10.8°
Electric Strength	ASTM D 1000	1150 volts/mil (45 kv/mm)
Volume Resistivity	ASTM D 257	1.3 x 10 ¹⁵ ohm•cm
Thermal Conductivity	MIL-I-16923E	6 x 10 ⁻⁴ cal/sec/cm ² /C°/cm
Water Absorption	ASTM D 570, free film, 140°F (60°C)	< 3.0 %
	28 days	
Moisture Vapor Transmission	MIL-I-16923E	4.5 x 10 ⁻⁷ cal/sec/cm ² /C°/cm
Salt Fog	ASTM B 117, 1000 hours	No effect
Weatherometer	ASTM G 53, 1000 hours	Surface chalk
Soil Stress - Burial	Bureau of Reclamation 25 cycles	No effect
Cathodic Disbondment	90 day, 1.5 volt,	Disbondment diameter
	3% ASTM G 8 salt solution	11 mm radius

Chemical Resistance Exposure at 73°F (23°C)*

Acetic Acid up to 25%	Ferric Nitrate	Potassium Borate
Acetone (softened)	Ferric Sulfate	Potassium Carbonate
Aluminum Chloride	Ferrous Nitrate	Potassium Chloride
Aluminum Hydroxide	Ferrous Sulfate	Potassium Dichromate up to 10%
Aluminum Nitrate	Formaldehyde up to 100%	Potassium Hydroxide
Aluminum Sulfate	Formic Acid up to 10%	Potassium Nitrate
Ammonium Carbonate	Freon; gas and liquid	Potassium Sulfate
Ammonium Chloride	Gas (Mfg)	Propylene Glycol
Ammonium Hydroxide up to 100%	Gas (Natural)	Sewage
Ammonium Nitrate	Gasoline Leaded	Silver Nitrate
Ammonium Phosphate	Gasoline Unleaded	Soap Solution
Ammonium Sulfate	Glycerine	Soaps
Amyl Alcohol	Heptane	Sodium Bicarbonate
Barium Carbonate	Hexane	Sodium Bisulfate
Barium Chloride	Hexylene Glycol	Sodium Carbonate
Barium Hydroxide	Hydrochloric Acid up to 25%	Sodium Chlorate
Barium Nitrate	Hydrofluoric Acid up to 40%	Sodium Chloride
Barium Sulfate	Hydrogen Sulfide	Sodium Hydroxide
Benzene	Isopropyl Alcohol	Sodium Meta Silicate up to 5%
Boric Acid	Jet Fuel	Sodium Nitrate
Borax	Kerosene	Sodium Sulfate
Butyl Alcohol	Linseed Oil	Sodium Thiosulfate up to 5%
Cadmium Chloride	Lubricating Oil	Stannic Chloride
Cadmium Nitrate	Magnesium Carbonate	Sulfur
Cadmium Sulfate	Magnesium Chloride	Sulfuric Acid up to 60%
Calcium Carbonate	Magnesium Hydroxide	Synthetic Sea Fuel (60% Naphtha, 20% Toluene, 15% Xylene, 5% Benzene)
Calcium Chloride	Magnesium Nitrate	Synthetic Silage
Calcium Hydroxide	Magnesium Sulfate	Tetrapropylene
Calcium Nitrate	MEK (softened)	Toluene
Calcium Sulfate	Mercuric Chloride	Trichloroethylene
Calcium Disulfide	Methanol (softened)	Triethylene Glycol
Carbon Tetrachloride	MIBK (Methyl Isobutyl Ketone)	Trisodium Phosphate
Caustic Potash	Mineral Oil	Turpentine
Caustic Soda	Mineral Spirits	Undecanol
Chlorine 2%	Molasses	Urea
Citric Acid up to 25%	Motor Oil	Urine
Copper Chloride	Muriatic Acid	Vinegar
Copper Nitrate	Naphtha	Water
Copper Sulfate	Nickel Chloride	Chlorinated
Crude Oil	Nickel Nitrate	Demineralized
Cyclohexane	Nickel Sulfate	Distilled
Cyclohexene	Nitric Acid up to 30%	Salt
Cyclopentane	Nonane	Sea
Detergent	Octane	Xylol
Diesel Fuel	Oxalic Acid	Zinc Chloride
Diethylene Glycol	Pentane	Zinc Nitrate
Dipropylene Glycol	Perchloroethylene	Zinc Sulfate
Ethanol (softened)	Phosphoric Acid up to 50%	10-10-10 Fertilizer, Saturated
Ethylbenzene	Phosphorous Trichloride	
Ethylene Glycol	Potassium Aluminum Sulfate	
Ferric Chloride up to 50%	Potassium Bicarbonate	

*Tests conducted for two years on similar products. No observed effect unless otherwise stated.

Handling and Safety Precautions

Read all health hazard, precautionary, and first aid statements found in the Material Safety Data Sheet, and/or product label of chemicals prior to handling or use.

For ordering information, technical information, product information or to request a copy of the Material Safety Data Sheet:
phone: 1-800-722-6721 or 1-512-984-1038
fax: 1-800-828-9329 or 1-512-984-2210

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