

399 Phenolic Epoxy Tank Lining

Updated: January 2015

Specification Data

Generic Type: Phenolic modified cycloaliphatic amine epoxy

Description: APCO 399 is a 100% solids, high build, phenolic modified cycloaliphatic amine epoxy. 399 forms a highly cross linked chemical resistant monolithic barrier on properly prepared steel or concrete surfaces. Specifically engineered for immersion service in petrochemical storage tanks, hot crude oil tanks, vessels, and produced water tanks. 399 is a single coat system that is applied using heated plural-component airless spray which reduces costly man hours and greatly increases production rates. Plural-component mix on demand spraying dramatically reduces paint waste and ensures on ratio product delivery and avoids costly reworks due to human error.

Features:

- 100% Solids
- Temperature resistant
- Chemical resistant
- 20 mil single coat system

Solids Content: 100% by Volume

Theoretical Coverage:

- 1604 mil ft²
- 80 ft² @ 20 Mils

Allow for loss during mixing & application.

VOC Value:

- .11 lbs/gal per EPA Method 24

Color: 1028 Gray

Substrate & Surface Preparation

Must be clean and dry. All dirt, dust, oil, contaminants, loose rust, mill scale and old coatings must be removed.

Immersion Carbon Steel: Minimum SSPC-SP10/NACE No. 2 Near white. Surface profile 2.0-3.0 mil.

Non-Immersion Carbon Steel: SSPC- SP6 Commercial Blast, surface profile 2.0-3.0 Mil.

Concrete: Concrete must be cured 28 days at 75°F minimum. Prepare surface in accordance with ASTM D4258 surface cleaning of concrete. Abrade surface in accordance with ASTM D4259

Application Equipment

Spray Application: Plural-component airless Only

▪ **Minimum requirements**

- Graco XP70 4:1 Plural-Component Airless
- Dual Viscon fluid heaters
- Merkur Solvent flush pump
- XTR7 Spray Gun
- 3/8" i.d. Material line
- Tip size .017-.023
- Output PSI: 5000 Minimum
- Monark 5:1 Transfer pump for component A

Brush and Roller: Touch up only

- **Brush:** Synthetic bristle
- **Roller:** 1/4" Nap cover with Phenolic Core

Mixing & Thinning

Components: 2

Mix Ratio: 4 Part A : 1 Part B

Mixing: Power mix each part separately. Use separate mixer for each part to avoid cross contamination

Pot Life: 15 Minutes @ 75°F

5 Minutes @ 120°F

Pot life is significantly shorter at higher temperatures and larger mixed volumes. Consult APCO technical representative for more information.

Thinning:

- **Spray:** Not required or recommended

Application

Pre-application: Flush all equipment with thinner S121 or MEK

Temperature: Application range from 50°F-110°F surface temperature. Surface temperature must be 5°F above the dew point. Application below 50°F use 399 LT35 low temperature activator.

Material Temperature: Heaters for both parts A & B are to be set at 110-120°F.

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Application Continued

Method: Apply one coat maintaining a wet edge to achieve a wet film thickness of 8-10 mils per pass, overlapping each pass by 50%. This technique will achieve 16-20 mil total film thickness. Film thickness is quickly and easily achieved. Dry film thickness over 30 mils is not recommended.

Inspection: Test for voids in coating film using low voltage holiday detector per standard ASTM D5162 for steel and ASTM D4787 for concrete. Dry film thickness can be measured with either a calibrated magnetic or electronic dry film thickness gauge.

Clean up & disposal: After use immediately flush all equipment with thinner S108 or MEK. Dispose of all containers, solvents and unused materials in accordance with all local, state and federal regulations.

Curing schedule:

Times based upon 75°F

Dry to touch: 2 hours

Dry to recoat: 12 hours

Max recoat: 36 hours

Return to service: 5 Days @ 75°F

Low temperature activator is available for quicker cure times in temperatures below 50°F. Consult a APCO representative for more information.

After 48 hours surface must be mechanically abraded or sweep blasted in order to be top coated.

Dry times are greatly affected by weather conditions and film thickness.

Packaging & Handling:

Unit sizes: Pre measured 25 or 250 gallon kit

Shipping Weight: 12.6 lbs/gal

UN Classification:

Base: Not regulated

Activator: UN2735 Corrosive

Limitations: Not suitable for immersion in strong acids, or caustics. Always consult an APCO technical representative before placing into any immersion service environment.

Test Data

Adhesion: >2500 PSI Minimum ASTM D4541

Temperature Resistance:

Dry: 300°F

Wet: 250°F

Pencil Hardness: 3H ASTM D3363

Mandrel Bend: Pass 180° Bend on 3/4" mandrel ASTM D522

Direct Impact: 20 lbs ASTM D2794