



NSF International
Special Engineered Specification
NSF SE 9857

Internal Pipe Epoxy Coatings

The Public
Health and Safety
Company.™



SPECIFICATIONS FOR A SPECIAL ENGINEERED (SE) PRODUCT NSF SE 9857

Internal Pipe Epoxy Coatings

1. Purpose:

This document defines the product specific requirements for epoxy coatings produced specifically for use on the interior of metallic potable water pipe as applied by a mechanical means. This specification identifies the acceptance criteria of these products for users, manufacturers, and inspectors, among other interested personnel.

2. Scope of Specification:

This specification establishes the minimum testing, marking, and the minimum in-plant QC requirements for epoxy coatings produced specifically for use on the interior of metallic potable water pipe as applied by a mechanical means.

3. Application:

Barrier coatings utilizing an epoxy based barrier meeting these requirements shall be authorized for use in Potable Water systems

4. Reference Documents:

ASTM Standards:

ASTM D 3359 – Standard Test Method for Measuring Adhesion by Tape Test

ASTM D 3363 – Standard Test Method for Film Hardness by Pencil Test

ASTM D 4541 – Standard Test Method for Pull-off Strength of Coatings Using Portable Adhesion Testers

IGC 189-2006 – Internal Pipe Epoxy Barrier Coating Material for Application in Pressurized (Closed) Metallic Water Piping Systems

AWWA Standards:

AWWA C210 – Liquid-Epoxy Coating System for the Interior and Exterior of Steel Water Pipelines

ICC Specification:

AC298 – Acceptance Criteria for Internal Epoxy Barrier Pipe Coating Material

NSF Standards:

NSF/ANSI Standard 61 – Drinking Water Systems Components – Health Effects

5. Testing Requirements:

5.0 Performance requirements

After curing per the manufacturer's specifications, products shall meet the requirements identified in section 5 of this document. Testing shall be performed on each type of pipe material the product is to be used with.

5.1 Immersion Test

The Immersion test shall be performed per AWWA C210 Section 5.2 and shall meet the requirements identified in Table 2 of AWWA C210. This test may be performed on flat plaques of the pipe material and coating.

5.2 Adhesion Test



This test shall be performed on flat plaques of the pipe material and coating. The adhesion of the coating to the pipe material shall be meet a minimum rating of 4A when tested in accordance with ASTM D3359 Method A.

5.3 Pull-Off Strength Test

The minimum pull force a sample shall meet, when tested per ASTM D 4541, 2500 psi. This test shall be performed on flat plaques of the pipe material and coating.

5.4 Thickness Test (Minimum)

The thickness test shall be performed on five 10' lengths of 1" pipe and fittings. If the manufacturer has not identified a thickness of the coating, then, the coating will meet a minimum of 16 mils. If the manufacturer has identified a thickness of the coating then, the coating shall meet the manufacturer's specifications. The measurement shall be performed as specified in SSPC-PA 2.

5.5 Curing

The epoxy shall be cured per the manufacturer's specifications. Upon completion of the curing process, the sample shall meet the requirements of either ASTM D 4752 for the solvent rub test or ASTM D 3363 for the pencil hardness test.

5.6 Chemical Extraction

Products certified against the requirements of this standard shall comply with NSF/ANSI Standard 61 Section 5

Product Marking:

The following minimum identification shall appear on the epoxy container:

- Manufacturer's name or trademark
- Trade Designation
- NSF SE

Q.C. Requirements:

Manufacturer's producing products compliant with these requirements shall have the products tested at a frequency of no greater than 5 years for verification of continued compliance with this document.

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