

ANSI/AWWA

# C214-20

(Revision of ANSI/AWWA C214-14)

AWWA Standard

# Machine-Applied Polyolefin Tape Coatings for Steel Water Pipe

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American Water Works  
Association



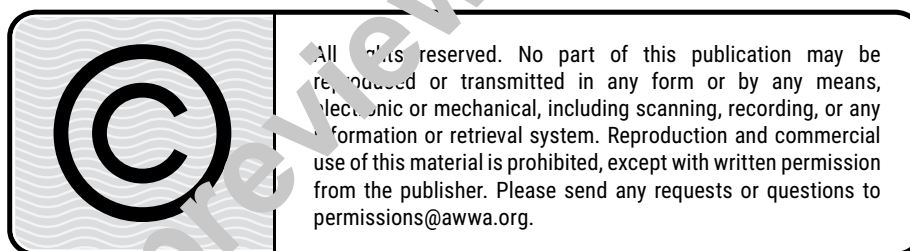
## AWWA Standard

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# Foreword

*This foreword is for information only and is not part of ANSI\*/AWWA C214.*

## **I. Introduction.**

I.A. *Background.* This standard describes the minimum material and application requirements for prefabricated plastic tape to be plant applied to the exterior of steel water pipe to protect the pipe against underground corrosion. Currently, the only plastic tape coatings for which significant performance experience in this application has been accumulated are based on polyethylene. However, this standard can also be used to qualify tapes that are based on other polyolefin materials.

I.B. *History.* The first edition of this standard was approved by the AWWA Board of Directors on Jan. 30, 1983. The second edition was approved on June 22, 1989, and had an effective date of Jan. 1, 1990. The third edition was approved June 17, 1995, and had an effective date of Dec. 1, 1996. Subsequent revisions to ANSI/AWWA C214 were approved by the AWWA Board of Directors on Jan. 23, 2000; Jan. 21, 2007; and Jan. 19, 2014. This edition was approved on Oct. 26, 2020.

## **II. Special Issues.**

II.A. *Advisory Information on Product Application.* This standard defines the performance of prefabricated plastic tape coatings establishing the quality desired for long-term protection and prevention of corrosion. It is intended for the exterior coating of steel water pipelines for underground or underwater installation under normal conditions. It is based on the best-known experience but is not designed for unqualified use under all conditions. The advisability of its use for any installation must be reviewed by the purchaser. If an extended period of aboveground storage of coated pipe is anticipated, the ability of the outer wrap to resist degradation from ultraviolet light and other atmospheric and environmental conditions should be considered.

Future air emission regulations may restrict the use of liquid adhesives described in this standard. If this occurs, consult the manufacturer for equivalent alternatives.

**III. Use of This Standard.** It is the responsibility of the user of an AWWA standard to determine that the products described in that standard are suitable for use in the particular application being considered.

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\* American National Standards Institute, 25 West 43<sup>rd</sup> Street, Fourth Floor, New York, NY 10036.

III.A. *Purchaser Options and Alternatives.* The following items should be provided by the purchaser:

1. Standard used—that is, ANSI/AWWA C214, Machine-Applied Polyolefin Tape Coatings for Steel Water Pipe, of latest revision.
2. Any required exceptions to the standard.
3. Diameter, length, and location of pipeline.
4. Location of coating application with reference to environmental considerations.
5. Operating temperature range (Sec. 1.1.1).
6. Conditions not described (Sec. 1.1.2).
7. Determining nonpolyolefinic material (Tables 1, 2, and 3, Sec. 4.3.1.2 and 4.3.1.3).
8. Outdoor storage (Sec. 4.3.1.3).
9. Coating system thickness (Tables 1, 2, and 4, and Sec. 4.3.1.4).
10. Inspecting and testing (Sec. 4.3.3 and Section 5).
11. Weld seam treatment (Sec. 4.5.2).
12. Hard-rubber roller use (Sec. 4.5.4.1).
13. Roll temperature (Sec. 4.5.4.1 and 4.5.4.2).
14. Cutback at pipe ends (Sec. 4.5.4.3).
15. Coating repair (Sec. 4.7.2).
16. Coating of field joints (Sec. 4.7.3).
17. Coating materials prequalification (Sec. 5.1).
18. Quality assurance and reports (Sec. 5.3).
19. Inspection and testing by the purchaser (Sec. 5.4).
20. Holiday detection use (Sec. 5.5.2).
21. Adhesion requirement and test frequency (Sec. 5.5.3).
22. Coating system thickness test frequency (Sec. 5.5.4).
23. Noncontaminating pipe (Sec. 5.6).
24. Delivery (Section 6).
25. Packaging (Sec. 6.2.1).
26. Affidavit of compliance, if required (Sec. 6.3).

III.B. *Modification to Standard.* Any modification to the provisions, definitions, or terminology in this standard must be provided by the purchaser.

**IV. Major Revisions.** The major revisions made to the standard in this edition include the following:

1. The title of the standard was modified to better differentiate it from AWWA C209, Tape Coatings for Steel Water Pipe and Fittings.
2. References in Section 2 were updated.
3. The definitions for applicator and potable water were added in Section 3 and the definition for constructor was deleted since it was replaced by applicator throughout the standard.
4. Section 4 headings were revised to be consistent with AWWA standardized wording and headings.
5. Sec. 4.1 Equipment was revised to be consistent with the updated wording in other steel pipe coating standards.
6. Sec. 4.2 Materials and Workmanship was revised to be consistent with the updated wording in other steel pipe coating standards and sections on safety and personnel were added.
7. Table 1 Physical Properties of 100 Percent Solids Liquid Adhesive was removed and the information on the 100 percent solid liquid adhesive in Sec. 4.3.1 and Sec. 4.3.1.1 was deleted. Currently, a 100 percent solids liquid adhesive is not commercially available.
8. Sec. 4.3.2.2.2, Sec. 4.3.2.3.2, and Table 6 Dimensions of Inner Layer and Outer Layer Tape were deleted. Recommended tape width chart did not take into account variables that determine proper tape width usage. Proper tape width should be determined by applicator based on equipment being used and actual pipe dimensions.
9. Sec. 4.4 Surface Preparation was revised to establish consistent language between similar AWWA steel pipe coating standards, and redundant language that is already included in the referenced SSPC standards was removed.
10. The reference to a visual comparative standard (old Sec. 4.4.2.3) was removed since this is discussed in the referenced SSPC-SP 6. This change is part of an effort to remove duplicative language in coatings standards that is already included in referenced standards.
11. In Sec. 4.5.4.2, the minimum outer layer tape temperature was increased to 90°F to be compliant with product manufacturer's guidelines.
12. Sec. 4.6 Coating Fittings and Specials was added.
13. Sec. 4.8 Field Joints – Welded and Non-Welded was revised.
14. Sec. 4.9 Field Procedures was expanded to cover items not included in AWWA C604.

15. The numbering and format of Sec. 5.2 was modified to be consistent with other AWWA steel pipe coating standards.

16. In Sec. 5.2 Prequalification Requirements of Coating System, some of the language and requirements related to testing was modified to be consistent with the other steel pipe coating standards, especially regarding water vapor transmission, water absorption, and impact resistance. In addition, a reference was added to a number of the tests to more accurately specify the acceptable coating test thicknesses.

17. Sec. 5.5.2 Electrical Continuity Testing was revised.

18. A new Sec. 5.5.3.3 Small Pipe Considerations was added for testing of smaller-diameter pipes.

19. In Sec. 5.5.3.5 Frequency of Testing, a sentence was added to address changes in the machine setup.

20. Sec. 6.3 Affidavit of Compliance was modified to include an affidavit for workmanship. Similar language has been added to other AWWA steel pipe coating and lining standards.

**V. Comments.** If you have any comments or questions about this standard, please call AWWA Engineering and Technical Service at 303.794.7711; FAX at 303.795.7603; write to the department at 6666 West Quincy Avenue, Denver, CO 80235-3098; or email at [standards@awwa.org](mailto:standards@awwa.org).



**American Water Works  
Association**

*Dedicated to the World's Most Important Resource®*

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# Machine-Applied Polyolefin Tape Coatings for Steel Water Pipe

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## SECTION 1: GENERAL

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### Sec. 1.1 Scope

This standard describes the materials and application of prefabricated polyolefin tape coating systems in coating plants at fixed sites using coating techniques and equipment as recommended by the tape coating manufacturer. For normal construction considerations, tape coatings are applied as a three-layer system consisting of (1) liquid adhesive, (2) corrosion-preventive tape (inner layer), and (3) mechanical-protective tape (outer layer). This standard establishes the minimum requirements for tape coating systems used on the exterior of steel water pipes. Continuous monitoring of application procedures for the tape coating system shall be performed by the applicator.

1.1.1 *Maximum temperatures.* AWWA pipe coating standards are written for and based on the service temperature of potable water. These coating systems have performed at higher temperatures. Consult the coating manufacturer for conditions and limitations.

1.1.2 *Conditions not described in this standard.* This standard does not describe the additional materials and procedures that may be required for difficult conditions, such as those encountered in rocky areas or where soil conditions are known to be severe and in construction of underwater lines, casing pipe, and river