

ANSI/AWWA

C215-22

(Revision of ANSI/AWWA C215-16)

AWWA Standard

Extruded Polyolefin Coatings for Steel Water Pipe

Effective date: Oct. 1, 2022.

First edition approved by Board of Directors June 19, 1988.

1st edition approved June 10, 2022.

Approved by American National Standards Institute May 17, 2022.



American Water Works
Association



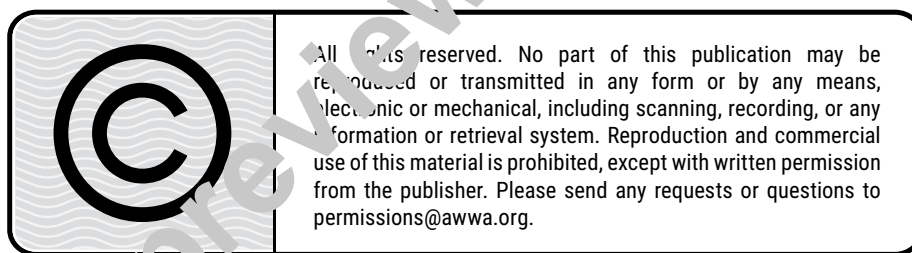
AWWA Standard

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ISBN-13, print: 978-1-64717-102-2

eISBN-13, electronic: 978-1-61300-636-8

DOI: <http://dx.doi.org/10.12999/AWWA.C215.22>

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA C215.*

I. Introduction.

I.A. *Background.* Extruded polyolefin pipe-coating systems were first applied on steel pipe in 1956 using a crosshead-die extrusion system. In 1965, side extrusion was introduced in Europe and became available in the United States in 1972.

I.B. *History.* The first edition of ANSI/AWWA C215 was approved by the AWWA Board of Directors on June 19, 1988, and had an effective date of Jan. 1, 1989. The second edition of ANSI/AWWA C215 was approved on Jan. 30, 1994, and had an effective date of Nov. 1, 1994. The third edition incorporated the latest technology and requirements. It was approved on June 20, 1999. Subsequent revisions to ANSI/AWWA C215 were approved by the AWWA Board of Directors on Jan. 18, 2004; Jan. 17, 2010; and Jan. 16, 2016. This edition was approved on June 10, 2022.

II. Special Issues. ANSI/AWWA C215 is intended to govern the exterior coating of steel water pipelines for underground or underwater installation under normal conditions. It is based on current experience, but it is not intended for unqualified use under all conditions. The applicability of its use for any installation must be reviewed by the purchaser.

Currently, significant experience in extruded polyolefin coatings applied to steel water pipe is limited to polyethylene (PE) material.

Extruded polyolefin coating described in ANSI/AWWA C215 can be shop-applied to straight length of steel water pipe. Three coating-application systems are described in the standard: the crosshead-die system (Type A) and the side-extrusion system with and without primer (Types B and C).

Future air emission rules may regulate the use of liquid adhesives (primers) 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.

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

1. Standard used—that is, ANSI/AWWA C215, Extruded Polyolefin Coatings for Steel Water Pipe, of latest revision.

* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

2. Any exceptions to the standard.
3. Diameter, length, weld configuration, and location of pipeline.
4. Temperature of conveyed water (Sec. 1.1.2).
5. Requirements for coating thickness (Sec. 4.3.1.4).
6. Requirements for coating application at pipe ends (coating cutback) (Sec. 4.5.3.4, Sec. 4.5.4.4, and Sec. 4.5.5.5).
7. Requirements for coating repair (Sec. 4.7).
8. Requirements for coating fittings and specials (Sec. 4.6).
9. Requirements for coating of field joints (Sec. 4.8).
10. Requirements for coating material prequalification (Sec. 5.1)
11. Requirements for inspection and testing (Sec. 5.4).
12. Requirements for rejection (Sec. 5.6)
13. Affidavit of compliance (Sec. 6.3).

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

1. Added a new section to the Scope on substrates other than carbon steel (Sec. 1.1.4)
2. Added definitions for abrasive blast cleaning, applicator, potable water, and seam weld to Sec. 3 to clarify the use of the term.
3. Revised Sec. 4.2 Materials and Workmanship and added sections on safety and personnel.
4. Changed tensile property in Table 3 from Breaking Strength to Tensile Strength at Yield. This change was made to be consistent with ASTM D638 definitions. The minimum value was also increased from 2,700 psi to 2,800 psi.
5. Reduced the number of pipe size/coating thickness graduations in Table 5. The minimum coating thickness was increased from 30 mils to 48 mils.
6. Sec. 4 was updated with standardized wording and headings.
7. The tables were moved to the sections in which they are referenced.
8. Updated Sec. 4.4 Surface Preparation to be consistent with the wording and format of other steel pipe coating and lining standards.
 9. A new Sec. 4.6 Coating Fittings and Specials was added.
 10. Sec. 4.7.1 Mill coating repair was revised.
 11. A new Sec. 4.8 Field Joints—Welded and Nonwelded was added.
 12. The old Sec. 4.8 Holiday Testing was deleted.

13. The following sections were revised to be consistent with other steel pipe coating and lining standards: Sec. 5.2.3.2 Impact resistance, Sec. 5.2.3.3 Penetration resistance, Sec. 5.2.3.4 Water absorption, Sec. 5.2.3.5 Water vapor transmission, and Sec. 5.2.3.7 Cathodic disbondment.

14. Sec. 5.5.4.3 Rejection was revised to provide more detail.

15. Sec. 6.1 Marking was revised to include shelf life and expiration date.

V. Comments. If you have any comments or questions about this standard, please call AWWA Engineering and Technical Services 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.

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ANSI/AWWA C215-22
(Revision of ANSI/AWWA C215-16)

AWWA Standard

Extruded Polyolefin Coatings for Steel Water Pipe

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes the materials, systems, and application requirements for shop-applied extruded polyolefin coatings for the exterior of steel water pipes.

1.1.1 *Extrusion types.* This standard describes the following three types of coating-system applications:

- Type A, crosshead-die extrusion, consists of an adhesive and an extruded polyolefin sheath. This system is limited to pipe diameters ½ in. through 36 in. (13 mm through 900 mm).
- Type B, side extrusion, consists of an extruded adhesive and an extruded polyolefin sheath. This system is limited to pipe diameters 2 in. (50 mm) and larger.
- Type C, side extrusion, consists of a liquid adhesive (primer) layer, extruded butyl rubber adhesive, and extruded polyolefin sheath. This system is limited to pipe diameters 2 in. (50 mm) and larger.

1.1.2 *Maximum temperatures.* AWWA steel pipe coating standards are written for, and are based on, the service temperature of potable water. Extruded polyolefin coatings have performed at higher temperatures. Consult the coating manufacturer for conditions and limitations.