



**American Water Works
Association**

The Authoritative Resource on Safe Water®

ANSI/AWWA C215-10
(Revision of ANSI/AWWA C215-04)

AWWA Standard

Extruded Polyolefin Coatings for the Exterior of Steel Water Pipelines



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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. The fourth edition of ANSI/AWWA C215 was approved on Jan. 18, 2004. The fifth edition incorporates the latest technology and requirements. It was approved on Jan. 17, 2010.

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 coatings described in ANSI/AWWA C215 can be shop-applied to straight lengths of steel water pipe up to 144 in. (3,650 mm) diameter. Three coating-application systems are described in the standard: the crosshead-die system (Type A) up to 36 in. (900 mm) diameter; and the side-extrusion system with and without primer for Type B and C up to 144 in. (3,650 mm) diameter.

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 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 the Exterior of Steel Water Pipelines, of latest revision.

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. Certified reports for each lot of adhesive (Sec. 4.3.2.1).
7. Certified reports for each resin for sheath (Sec. 4.3.2.3).
8. Requirements for coating application at pipe ends (coating cutback) (Sec. 4.4.3.4, 4.4.4.4, and 4.4.5.5).
9. Requirements for coating repair (Sec. 4.5).
10. Requirements for pipe bedding and trench backfill (Sec. 4.6.3).
11. Requirements for coating of field joints (Sec. 4.7).
12. Requirements for inspection and testing (Sec. 5.1, 5.2, and 5.3).
13. Requirements for loading, shipping, handling, and outdoor storage (Sec. 6.2).
14. Affidavit of compliance (Sec. 6.3).

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

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

1. Added future air emissions rules in the foreword.
2. Added a Type C coating system to the Scope of the standard (Sec. 1.1) and under Sec. 4.3, which included revisions to Sec. 4.3.1 and the addition of new Sec. 4.3.1.2 and Sec. 4.3.2.2 covering Type C adhesives.
3. Section 2, 4.5, and 4.7 were revised to exclude reference to ANSI/AWWA C203, which is no longer applicable.
4. Deleted definition of abrasive blast cleaning (Section 3).
5. Sec. 4.3 and 4.4 were revised to include Type C coating applications.
6. Sec. 4.4.2, Pipe Preparation, was renamed Surface Preparation and revised.
7. Addition of Table 4, Physical properties of the liquid adhesives (Primer) for Type C.
8. Addition of Table 5, Prequalification requirements of coating systems (Type A, B, and C).
9. Addition of Table 6, Quality control properties of coating systems (Type A, B, and C).
10. Added a new section (Sec. 4.4.5) on Type C coating application.
11. Revisions were made to Sec. 4.5, Coating Repair.
12. Sec. 4.6, Field Procedures, was rewritten.

13. The laboratory tests section under Section 5, Verification, was retitled as Sec. 5.1, Coating Materials Prequalification, and a new paragraph on prequalification of coating materials was added.

14. Added a new section on adhesion testing (Sec. 5.1.16).

15. Added a new section on cathodic disbondment qualification test (Sec. 5.1.17).

16. The coated pipe tests section was revised and renamed to Sec. 5.4, Quality Control Requirements of Coating Systems (Type A, B, and C).

17. A new section on adhesion testing was added (Sec. 5.4.4.)

V. Comments. If you have any comments or questions about this standard, please call the AWWA Volunteer and Technical Support Group at 303.794.7711, FAX at 303.795.7603, write to the group at 6666 West Quincy Avenue, Denver, CO 80235-3098, or e-mail at standards@awwa.org.

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**American Water Works
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AWWA Standard

Extruded Polyolefin Coatings for the Exterior of Steel Water Pipelines

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 pipe up to 144 in. (3,650 mm) diameter.

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. through 144 in. (50 mm through 3,650 mm).

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. through 144 in. (50 mm through 3,650 mm).

1.1.2 *Maximum temperatures.* AWWA steel pipe coating standards are written for and are based on the service temperature of potable water. Extruded