



**American Water Works
Association**

ANSI/AWWA C229-08
(First Edition)

The Authoritative Resource for Safe Water®

AWWA Standard

Fusion-Bonded Polyethylene Coating for the Exterior of Steel Water Pipelines



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AWWA Standard

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Foreword

This foreword is for information only and is not part of ANSI/AWWA C229.

I. Introduction.

I.A. *Background.* This standard describes the minimum material and application requirements for fusion-bonded polyethylene (FBPE) coating to be factory applied to the exterior and the joint region (of rubber-gasketed field joints) of steel water and wastewater pipes.

I.B. *History.* Fusion-bonded polyethylene pipe coatings were first applied to steel pipes in the 1960s in Europe. In 1972, FBPE was introduced to Australia, and in 1990 to South Africa. FBPE has been used as an external coating for water, wastewater, oil, and gas pipelines. The coating system became available for use in the United States in 2006.

In March 2006, the AWWA Standards Council authorized the Steel Pipe Committee to develop a new standard for fusion-bonded polyethylene coating. This is the first edition of this standard.

I.C. *Acceptance.* In May 1985, the US Environmental Protection Agency (USEPA) entered into a cooperative agreement with a consortium led by NSF International (NSF) to develop voluntary third-party consensus standards and a certification program for direct and indirect drinking water additives. Other members of the original consortium included the American Water Works Association Research Foundation (AwwaRF) and the Conference of State Health and Environmental Managers (COSHEM). The American Water Works Association (AWWA) and the Association of State Drinking Water Administrators (ASDWA) joined later.

In the United States, authority to regulate products for use in, or in contact with, drinking water rests with individual states.* Local agencies may choose to impose requirements more stringent than those required by the state. To evaluate the health effects of products and drinking water additives from such products, state and local agencies may use various references, including

1. An advisory program formerly administered by USEPA, Office of Drinking Water, discontinued on Apr. 7, 1990.
2. Specific policies of the state or local agency.

* Persons outside the United States should contact the appropriate authority having jurisdiction.

3. Two standards developed under the direction of NSF, NSF*/ANSI[†] 60, Drinking Water Treatment Chemicals—Health Effects, and NSF/ANSI 61, Drinking Water System Components—Health Effects.

4. Other references, including AWWA standards, *Food Chemicals Codex*, *Water Chemicals Codex*,[‡] and other standards considered appropriate by the state or local agency.

Various certification organizations may be involved in certifying products in accordance with NSF/ANSI 61. Individual states or local agencies have authority to accept or accredit certification organizations within their jurisdiction. Accreditation of certification organizations may vary from jurisdiction to jurisdiction.

Annex A, “Toxicology Review and Evaluation Procedures,” to NSF/ANSI 61 does not stipulate a maximum allowable level (MAL) of a contaminant for substances not regulated by a USEPA final maximum contaminant level (MCL). The MALs of an unspecified list of “unregulated contaminants” are based on toxicity testing guidelines (noncarcinogens) and risk characterization methodology (carcinogens). Use of Annex A procedures may not always be identical, depending on the certifier.

ANSI/AWWA C229 does not address additives requirements. Thus, users of this standard should consult the appropriate state or local agency having jurisdiction in order to

1. Determine additives requirements, including applicable standards.
2. Determine the status of certifications by parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine current information on product certification.

II. Special Issues.

II.A. *Advisory Information on Product Application.* This standard defines the minimum requirements of fusion-bonded polyethylene coating for long-term corrosion protection. It is intended for use as an exterior coating and for the joint region (of rubber gasketed field joints) of steel water pipelines for underground, underwater, and aboveground installations conveying water and wastewater.

* NSF International, 789 N. Dixboro Rd., Ann Arbor, MI 48113.

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

‡ Both publications available from National Academy of Sciences, 500 Fifth Street, N.W., Washington, DC 20001.

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 specified by the purchaser:

1. Standard used—that is, ANSI/AWWA C229, Fusion-Bonded Polyethylene Coating for the Exterior of Steel Water Pipelines, of latest revision.
2. Whether compliance with NSF/ANSI 61, Drinking Water System Components—Health Effects, is required.
3. Any exceptions to the standard.
4. Diameter, length, weld configuration, and location of pipeline.
5. Temperature of conveyed water (Sec. 1.1.1).
6. If an alternative coating color is required (Sec. 4.3.1).
7. Requirements for FBPE cutback at pipe ends, if different (Sec. 4.4.3.5).
8. Requirements for coating thickness, if different (Sec. 4.4.3.9).
9. Requirements for coating repair, if different (Sec. 4.6).
10. Requirements for coating of field joints (Sec. 4.7.4).
11. Requirements for pipeline bedding and trench backfill (Sec. 4.7.5).
12. Requirements for inspection and testing (Section 5).
13. Requirements for handling, transport, and storage (Sec. 6.2).
14. Affidavit of compliance (Sec. 6.3).

IV. Major Revisions. This is the first edition of this standard.

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

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AWWA Standard

Fusion-Bonded Polyethylene Coating for the Exterior of Steel Water Pipelines

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes the materials and application requirements for factory-applied, fusion-bonded polyethylene (FBPE) coating, to the exterior of steel water pipes and fittings and the joint region of rubber-gasket field-jointed steel water pipes and fittings.

1.1.1 *Maximum temperatures.* AWWA steel pipe coating standards are written for and based on the service temperature of potable water. Consult the manufacturer for conditions and limitations.

1.1.2 *Conditions not described in this standard.* This standard does not discuss the additional materials and procedures that may be required for difficult installation conditions, such as those encountered in the construction of submerged lines, casing pipe, or river crossings. The manufacturer should be consulted for specific recommendations when these conditions exist.

Sec. 1.2 Purpose

The purpose of this standard is to provide the minimum requirements for FBPE coating for steel water pipe, including material, application, inspection, testing, marking, handling, and packaging requirements.