



**American Water Works
Association**

The Authoritative Resource on Safe Water®

ANSI/AWWA C219-11
(Revision of ANSI/AWWA C219-06)

AWWA Standard

Bolted, Sleeve-Type Couplings for Plain-End Pipe



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Foreword

This foreword is for information only and is not a part of ANSI/AWWA C219.*

I. Introduction.

I.A. *Background.* This standard describes bolted, sleeve-type couplings, reducing or transition couplings, and flanged coupling adapters used to join plain-end pipe. It also includes materials of construction, inspection, and testing.

I.B. *History.* The first edition of ANSI/AWWA C219 was approved by the AWWA Board of Directors on June 23, 1991. Subsequent editions were approved on June 15, 1997, Jan. 21, 2001, and Feb. 12, 2006. This fifth edition was approved on Jan. 23, 2011.

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 Water Research Foundation[†] 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.
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.

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

† Water Research Foundation, 6666 W. Quincy Avenue, Denver, CO 80235.

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

§ NSF International, 789 N. Dixboro Road, Ann Arbor, MI 48105.

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 C219 does not address additives requirements. 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.* Bolted, sleeve-type couplings have been used for joining plain-end pipe since the latter part of the 19th century. Currently, there are several manufacturers who produce these couplings. Though details differ, couplings of this type work the same way and have similar components: a center sleeve (sometimes called a "middle ring"), end rings (sometimes called "followers"), and threaded fasteners (bolts and nuts) that, when tightened, pull the end rings together. These components compress elastomeric gaskets in the space formed between the end rings, center sleeve, and pipes being joined, thereby sealing the coupling-and-pipe combination.

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

* Both publications available from National Academy of Sciences, 500 Fifth Street NW, Washington, DC 20001.

provided by the purchaser.

1. Standard used—that is, ANSI/AWWA C219, Bolted, Sleeve-Type Couplings for Plain-End Pipe, of latest revision.
2. Quantity.
3. Wall thickness, schedule, or class.
4. Flange specification for flanged coupling adapters.
5. Whether compliance with NSF/ANSI 61, Drinking Water System Components—Health Effects, is required.
6. Actual outside diameter(s) (OD) of pipe ends, including any coatings (Section 3[1]).
7. Nominal pipe size(s) (Section 3[12] and Table 4).
8. Rated pressure, including transient pressure, and the test pressure (Section 3[14] and 4.3.1).
9. Details of other federal, state or provincial, and local requirements (Sec. 4.2.1).
10. Operating temperature range (Sec. 4.2.3.1 and 4.2.3.2).
11. Type of service (Sec. 4.2.3.2 and 4.2.3.3).
12. Length and thickness of center sleeve where special performance or installation requirements exist (Sec. 4.3.2 and Table 2).
13. Anticipated angular deflection of pipes (Sec. 4.5 and Table 3).
14. Special requirements, such as coatings (Sec. 4.6.2), gasket material (Sec. 4.2.3 and 4.2.3.1), gaskets for electrical insulation (Sec. 4.2.3.3), and special type of bolting (Sec. 4.2.5).
15. Type of pipe(s), including specification to which it is made or specification and tolerance of pipe ends (Sec. 4.7.2 and Table 4).
16. Purchaser's pipe-end preparation requirements (Sec. 4.7.2).
17. Additional nondestructive weld evaluation (Sec. 5.1.1.1.1).
18. Material certifications (Sec. 5.1.1.3).
19. Purchaser's inspection requirements (Sec. 5.1.2).
20. Hydrostatic test data report (Sec. 5.2.2.2).
21. Purchaser's proof test requirements (Sec. 5.2.4).
22. Marking of rated pressure (Sec. 6.1, Item 4).
23. Affidavit of compliance, if required (Sec. 6.3).

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

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

1. A reference to AWS D1.6, Structural Welding Code for Stainless Steel, was

added under Section 2, References; Sec. 4.4.1.1, Steel center sleeves; and Sec. 4.4.2.1, Steel end rings.

2. Added Standards Council standard language in Sec. 4.1, Permeation, and Sec. 4.2.1, Material compliance.

3. A revision was made to Sec. 4.5, Performance, regarding angular pipe movement.

4. A note that coatings are not applicable for stainless-steel couplings was added in Sec. 4.6.1, Standard shop coatings.

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 group at 6666 West Quincy Avenue, Denver, CO 80235-3098, or e-mail the group at standards@awwa.org.



**American Water Works
Association**

AWWA Standard

Bolted, Sleeve-Type Couplings for Plain-End Pipe

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes bolted, sleeve-type couplings, reducing or transition couplings, and flanged coupling adapters (couplings) used to join plain-end pipe. Couplings may be manufactured from carbon steel, stainless steel, ductile iron, or malleable iron and are intended for use in systems conveying water. This standard describes nominal coupling sizes from ½ in. (13 mm)* through 144 in. (3,600 mm).

Sec. 1.2 Purpose

The purpose of this standard is to provide the minimum requirements for couplings of plain-end pipe, including requirements for materials, design, testing and inspection, installation, and shipping.

Sec. 1.3 Application

This standard can be referenced in documents for purchasing the described couplings. The stipulations of this standard apply when this document has been referenced.

* Metric conversions given in this standard are direct conversions of US customary units and are not those specified in International Organization for Standardization (ISO) standards.