



**American Water Works  
Association**

ANSI/AWWA C219-06  
(Revision of ANSI/AWWA C219-01)

The Authoritative Resource on Safe Water®

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***AWWA Standard***

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# 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, 1999. The second edition was approved on June 15, 1997. The third edition was approved on Jan. 21, 2001. This fourth edition was approved by the AWWA Board of Directors on Feb. 12, 2006.

I.C. *Acceptance.* In May 1985, the US Environmental Protection Agency (USEPA) entered into a cooperative agreement with the consortium led by NSF International (NSF) to develop voluntary third-party consensus standards and a certification program for all 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 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 April 7, 1990.
2. Specific policies of the state or local agency.
3. Two standards developed under the direction of NSF, NSF<sup>†</sup>/ANSI<sup>‡</sup> 60, Drinking Water Treatment Chemicals—Health Effects, and NSF/ANSI 61, Drinking Water System Components—Health Effects.

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

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

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

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 additive requirements. Users of this standard should consult the appropriate state or local agency having jurisdiction in order to

1. Determine additive requirements, including applicable standards.
2. Determine the status of certifications by all parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine the 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.

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\*Both publications available from National Academy of Sciences, 500 Fifth Street NW, 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 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, in addition to the requirements of the Safe Drinking Water Act.
6. Actual outside diameter(s) (OD) of pipe ends, including any coatings (Sec. 3[1]).
7. Nominal pipe size(s) (Sec. 3[11] and Table 4).
8. Details of other federal, state or provincial, and local requirements (Sec. 4.2.1).
9. Rated pressure, including transient pressure, and the test pressure (Sec. 3[13] and 4.3.1).
10. Operating temperature range (Sec. 4.2.2.1 and 4.2.2.2).
11. Type of service (Sec. 4.2.2.2 and 4.2.2.3).
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. 4.2.2 and 4.2.2.2), gaskets for electrical insulation (Sec. 4.2.2.3), and special type of bolting (Sec. 4.2.4).
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. Certificate of compliance (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. Defined test pressure in Sec. 3.
2. Added material language in Sec. 4.2.1.
3. Deleted reference to higher grades of stainless steel with low carbon or stabilized grades to minimize heat sensitization in Sec. 4.2.2.1.
4. Clarified language regarding unspecified national standard in Sec. 4.2.5.1.1.
5. Added AWWA C222 and C224 as optional coating systems in Sec. 4.6.2.
6. Added passivated language in Sec. 4.6.3.
7. Clarified language in Sec. 4.7.2, Item 1.
8. Deleted language in Sec. 4.7.4.2 with reference to manufacturers' recommendations.
9. Modified weld inspection criteria in Sec. 5.1.1.1.

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



American Water Works  
Association

ANSI/AWWA C219-06  
(Revision of ANSI/AWWA C219-01)

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*AWWA Standard*

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# **Bolted, Sleeve-Type Couplings for Plain-End Pipe**

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## **SECTION 1: GENERAL**

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### **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 pipe sizes from  $1/2$  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.

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\*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.