

American Water Works Association

AWWA C702-92

(Revision of ANSI/AWWA C702-86)



AWWA STANDARD
FOR
COLD-WATER METERS — COMPOUND TYPE



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AMERICAN WATER WORKS ASSOCIATION

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Foreword

This foreword is for information only and is not a part of AWWA C702.

I. History of Standard. The first compound-type water meter was developed in 1914 when it became evident that there was a need for a measuring device combining a valve with a small displacement-type bypass meter. The new meter would, by design, divert and register water at flow rates below the minimum flow-rate capability of the main water-line meter, which was usually of the turbine type.

Initially, standard meters of the turbine type and displacement type were assembled into units with suitable valves. Main-line meter cases were first made of cast iron, but after five or six years, some were made of bronze. In the field, meters were also converted to the compound type by the attachment of bypass meters and diversion valves.

Currently, some compound-type meters are made almost entirely of bronze in single main-line cases. Others, in all sizes, continue to be constructed with cast-iron cases. Some compound-type meters are assembled units, particularly those in large sizes. Compound-type meters have application in commercial, industrial, and institutional services where wide ranges of flow rates are encountered.

The first standard that covered compound-type meters was adopted by the New England Water Works Association (NEWWA) in March 1923 and by the American Water Works Association (AWWA) on May 24, 1923. The dates of approval and numerical designation of all past editions of AWWA C702 are listed below.

Designation	Date of Approval
None	May 24, 1923
AWWA 7M.3-T	Jan. 14, 1946
AWWA 7M.3-1947/C702-47	July 25, 1947
AWWA C702-70	Jan. 26, 1970
AWWA C702-78	Jan. 28, 1978
AWWA C702-86	June 22, 1986

II. 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 all direct and indirect drinking water additives. Other members of the consortium included the American Water Works Association Research Foundation (AWWARF), the Conference of State Health and Environmental Managers (COSHEM), the American Water Works Association (AWWA), and the Association of State Drinking Water Administrators (ASDWA). The consortium is responsible for the cooperative effort of manufacturers, regulators, product users, and other interested parties that develop and maintain the NSF standards.

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

*Persons in Canada, Mexico, and non-North American countries should contact the appropriate authority having jurisdiction.

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, ANSI*/NSF† 60, Drinking Water Treatment Chemicals—Health Effects, and ANSI/NSF 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 ANSI/NSF 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.

Appendix A, “Toxicology Review and Evaluation Procedures,” to ANSI/NSF 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 Appendix A procedures may not always be identical, depending on the certifier.

AWWA C702-92 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 all parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine current information on product certification.

III. Information Regarding Use of This Standard. When placing orders for meters manufactured in accordance with this standard, specific information about the following should be included in the purchaser’s specifications:

1. Standard used—that is, AWWA C702-92, Standard for Cold-Water Meters—Compound Type.
2. If an affidavit of compliance (Sec. 1.4), a certificate of testing accuracy (Sec. A.3.3), or both, are to be furnished.
3. Limitations on acceptable materials, if any, as referenced throughout Sec. 2.
4. Restrictions on corrosion-resistance treatment process (Sec. 2.8) if any.
5. Sizes of meters (Sec. 3.1) and quantity required.
6. Length of filler piece (Sec. 3.3) if required.
7. Modifications of test specifications (Sec. 3.6) if operating water temperatures will exceed 80°F (27°C) (Sec. A.5.2).
8. Round or oval flanges on 2-in. (50-mm) meters (Sec. 4.3.1).

*American National Standards Institute, 11 W. 42nd St., New York, NY 10036.

†NSF International, 3475 Plymouth Rd., Ann Arbor, MI 48106.

‡Both publications available from National Academy of Sciences, 2102 Constitution Ave. N.W., Washington, DC 20418.

9. If companion flanges, gaskets, bolts, and nuts (Sec. 4.4) are to be furnished, and designation of flange material (Sec. 2.9) if other than cast iron is desired.

10. If main casing is to be furnished with tapped boss for field-testing purposes (Sec. 4.5).

11. Details of register to be furnished: US gallons, cubic feet, cubic metres, or other units; with or without center-sweep test hand; open or hermetically sealed (Sec. 4.6).

12. If an encoder-type register, direct-reading remote register, or an adapter (Sec. 4.7) is required.

13. If meters are to be furnished with strainers (Sec. 4.14). If strainers are requested, whether they are internal or external and whether the strainer shall be removable without taking the meter off line.

14. Special materials required, if any, to resist corrosion if water is highly aggressive (Sec. A.5.3).

15. If the meter serial number is to be imprinted on the main case (Sec. 3.7.1 and Sec. 4.1).

16. If specific warranty provisions will be required.

IV. Modification to Standard. Any modification of the provisions, definitions, or terminology in this standard must be provided in the purchaser's specifications.

V. Major Revisions. The major changes made in this revision of the standard are

1. ASTM* standards have been added to Sec. 1.3, References.

2. The materials section (Sec. 2) of the standard recognizes the advances that have been made in the development of nonmetallic materials for water meter construction. Plastic materials are currently being used successfully for meter components. Because of the continual development of new and improved materials, this standard will not require any one specific material but will cite typical examples of material defined by ASTM specifications and typically used at this time in construction of water meters. The materials section has been modified to recognize these advances.

3. The requirement for tapped bosses, if required by the purchaser, to be located on the top of the case is deleted in Sec. 4.5.

4. A section has been added to appendix A stating AWWA's position on grounding of electrical systems to pipe systems conveying drinking water to customer's premises.

5. The workmanship and materials section has been deleted (Sec. 1.4.2).

6. The warranty provisions have been eliminated.

7. The standard and appendix A have been revised to conform to current form, content, and style of AWWA standards.

8. Section III, Acceptance, and Section IV, Modification to Standard, have been added to the foreword.

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