American Water Works Association

The Authoritative Resource on Safe Water[SM]

ANSI/AWWA C708-05
(Revision of ANSI/AWWA C708-96)

AWWA Standard

Cold-Water Meters—Multijet Type

American National Standards Institute

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Foreword

This Foreword is for information only and is not a part of ANSI/AWWA B302.

I. Introduction.

I.A. *Background.* For the past century, no tool available to water utilities has played a greater part in water conservation than the water meter. It has reduced waste and distributed the cost of operating a water system in the most equitable manner possible. Multijet meters, which were first designed and produced in 1867, have proved satisfactory for measuring domestic water service.

In inferential-type meters, the moving element is a rotor; the basic principle of this meter is to design it in such a manner that, over the working range of the instrument, the speed of rotation of the rotor bears a linear relationship to the velocity of flow through the meter.

In multijet meters, the moving element takes the form of a multiblade rotor mounted on a vertical spindle within a cylindrical measuring chamber. The liquid enters the measuring chamber through several tangential orifices around the circumference and leaves the measuring chamber through another set of tangential orifices placed at a different level in the measuring chamber.

I.B. *History.* Advances made in the development of nonmetallic materials for water meter construction have been recognized in the materials section of this standard. Several plastic materials are currently being used successfully for meter components. Several suitable plastic materials are included in this revision.

The first edition of the standard was approved by the AWWA Board of Directors on June 20, 1976. Subsequent editions of this standard were approved by the AWWA Board of Directors on Feb. 1, 1982, Jan. 27, 1991, and June 23, 1996. This edition was approved by the AWWA Board of Directors on Jan. 16, 2005.

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 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.

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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.
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 C708 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.

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*Persons outside the US should contact the appropriate authority having jurisdiction.

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

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

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

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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.

II. Special Issues.

II.A. *Fire flow.* The meters described in this standard are not designed to be used in water service piping intended to extinguish fire. Requirements for residential fire service products and combined residential domestic/fire service products are currently being developed as a part of ANSI/AWWA C703, Standard for Cold-Water Meters—Fire Service Type.

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.* This standard provides for several options and alternatives that purchasers must designate if they wish to exercise the options or if they have preferences among the alternatives. Also, several items must be specified by purchasers to describe completely the type, size, and quantity of meters required. All such items, options, and alternatives are summarized in the following itemized list. Purchasers should review each one and make the appropriate provisions in the purchaser's documents to describe specific requirements.

1. Standard used—that is, ANSI/AWWA C708, Standard for Cold-Water Meters—Multijet Type, of latest revision.

2. The purchaser should state whether compliance with NSF/ANSI 61 Drinking Water System Compounds—Health Effects, is to be required, in addition to the requirements of the Safe Drinking Water Act.

3. If warranty requirements will be specified.

4. If main cases are to be constructed of a copper alloy or a suitable engineering plastic (Sec. 4.1.2).

5. If meters are to be furnished with cast-iron, stainless-steel, copper-alloy, or suitable engineering plastic top or bottom covers (Sec. 4.1.11), and if there is a preference.

6. Size of meter (Sec. 4.2.1) and quantity required.

7. If corrosion protection is required, such as for cast-iron frost-protection covers (Sec. 4.2.6), and if there is a preference.

8. Modifications of test specifications (Sec. 4.2.8) if operating water temperatures will exceed 80°F (27°C) (Sec. A.4.2).

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