

American Water Works Association

ANSI/AWWA C402-00

(Revision of ANSI/AWWA C402-95)



AWWA STANDARD
FOR
ASBESTOS-CEMENT
TRANSMISSION PIPE,
18 IN. THROUGH 42 IN.
(450 mm THROUGH 1,050 mm),
FOR WATER SUPPLY SERVICE



Effective date: Sept. 1, 2000.

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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 C402.

I. Introduction.

I.A. Background. Asbestos-cement pipe was originally introduced into the North American market in 1931. At that time, asbestos cement (an intimate mixture of portland cement and asbestos fibers) was a relatively new pipe material. Experience with asbestos-cement pipe was limited to only a few years at installations in several European countries, particularly Italy. During the years following its North American introduction, a record of successful experience was established in the United States and other North American countries. In 1949, AWWA established a committee to develop a standard for asbestos-cement pressure pipe.

I.B. History. The original AWWA committee developed a standard for asbestos-cement water pipe designated AWWA C400-53T, Tentative Standard for Asbestos-Cement Water Pipe, which was approved by the AWWA Board of Directors on May 15, 1953. In 1958, the committee was reactivated as Committee 8340D on Asbestos-Cement Pipe. This committee produced a revised tentative standard adopted by AWWA as AWWA C400-64T, Tentative Standard for Asbestos-Cement Pipe on Jan. 27, 1964. This edition was advanced to standard without revision under the designation AWWA C400-65, Standard for Asbestos-Cement Water Pipe on July 2, 1965.

In 1968, the committee was reactivated as the Standards Committee on Asbestos-Cement Pipe to review and revise all of the AWWA standards on asbestos-cement pipe. The committee produced a revised standard designated as ANSI/AWWA C400-72, Standard for Asbestos-Cement Pressure Pipe for Water and Other Liquids, which was approved on Jan. 31, 1972.

During 1972 and 1973, the committee was reorganized and enlarged to include representation of national organizations interested in the scope of the committee and wishing to participate in the work. The reorganized committee reaffirmed C400-72 without revision so that it could be presented to the American National Standards Institute for designation as an American National Standard. The reaffirmed standard was republished as ANSI/AWWA C400-73 under the same title.

In 1975, the committee produced a revised standard designated ANSI/AWWA C400-75, Standard for Asbestos-Cement Pressure Pipe, 4 In. Through 24 In., for Water and Other Liquids, which was approved on Jan. 26, 1975.

During the same time period, the committee also produced the first edition of a new standard designated as ANSI/AWWA C402-75, Standard for Asbestos-Cement Transmission Pipe, 18 In. Through 42 In., for Water and Other Liquids, which was approved on Jan. 26, 1975. This first edition adopted a new system of manufactured pipe strength classifications, which provided designers with the flexibility to choose among nine standard pipe strength classifications for each size of transmission pipe. This design capability is of particular significance for large-diameter pipeline projects where tailoring of pipe strength to project conditions can produce significant savings in material costs. These savings can exceed the increased costs necessitated by more detailed design, better control over installation methods, and provisions for surge controls when justified.

The standard was revised in 1977 to provide a more detailed description of aggressive soil and water conditions, redefinition of manufactured lots, and definition of the machines to be used for physical testing. ANSI/AWWA C402-77 was approved on Jan. 30, 1977.

The 1977 edition of the standard was again revised in 1984 to incorporate soft metric equivalents, provide explanations of methods for testing for hydrostatic and crushing requirements, and included appendix A, which described fittings for use with asbestos-cement transmission pipe. ANSI/AWWA C402-84 was approved on Jan. 30, 1984. The fourth edition of this standard was approved on June 18, 1989. The fifth edition of this standard was approved on Jan. 1, 1995. This edition was approved on Jan. 23, 2000.

In 1978, the American Water Works Association issued AWWA Manual M16, *Work Practices for Asbestos-Cement Pipe*.^{*} The manual was revised and reformatted as a handbook by the committee and republished in 1995.

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

^{*}*Work Practices for Asbestos-Cement Pipe*, AWWA Manual M16, AWWA, Denver, Colo. (1978).

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.
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.

Annex 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 Annex A procedures may not always be identical, depending on the certifier.

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

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

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

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