



**American Water Works
Association**

The Authoritative Resource on Safe WaterSM

ANSI/AWWA C513-05
(Revision of ANSI/AWWA C513-97)

AWWA Standard

Open-Channel, Fabricated-Metal Slide Gates and Open-Channel, Fabricated-Metal Weir Gates



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AWWA Standard

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA C513.

I. Introduction.

I.A. *Background.* Open-channel, fabricated-metal slide gates and weir gates are mechanically actuated plates positioned in open-channel conduits to control water. Fabricated slide gates do not include stop plates that are manually placed in grooves in an open channel. The common use of open-channel, fabricated-metal slide gates and weir gates in water facilities led to the preparation of this standard. Open-channel, fabricated-metal slide gates and weir gates described in this standard are intended to be used to control water in water conveyance channels.

I.B. *History.* The first edition of ANSI/AWWA C513 was developed in 1996 by the AWWA Standards Committee on Sluice Gates as a result of infrastructure needs for placement and replacement of slide gates. The first edition of the standard was approved by the AWWA Board of Directors on Feb. 2, 1997. This edition of C513 was approved 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.

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, provincial, or local agency.

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

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.

ANSI/AWWA C513 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.

II. Special Issues. This standard has no applicable information for this section.

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.

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

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

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

III.A. *Purchaser Options and Alternatives.* The following items should be provided by the purchaser:

1. Standard used—that is, ANSI/AWWA C513, Standard for Open-Channel, Fabricated-Metal Slide Gates and Open-Channel, Fabricated-Metal Weir Gates, of latest revision.
2. Number of units required.
3. Size and type of gate.
4. Any drawings and material specifications required of the manufacturer (Sec. 4.1).
5. If test records must be viewed (Sec. 4.2.2).
6. Acceptable materials (Sec. 4.2).
7. Standard or self-contained gate frame (Sec. 4.3.1.2 and 4.3.1.3).
8. Rising stem or nonrising stem (Sec. 4.3.2.3).
9. Type of actuator: manual, electric-motor-driven, or hydraulic-cylinder. The purchaser should refer to ANSI/AWWA C540 if the actuator is electric-motor-driven or hydraulic-cylinder.
10. Type of lift mechanism structural support (Sec. 4.3.8.2).
11. Driver media and pressure (refer to ANSI/AWWA C540, Standard for Power-Actuating Devices for Valves and Slide Gates).
12. Omission of stem covers (Sec. 4.3.8.6), if not required.
13. If a gate position indicator is to be provided with the actuator (Sec. 4.3.8.7).
14. Leakage tests in the shop (Sec. 5.2.2) and in the field (Sec. 4.5.5), if required.
15. Definition of any special design and construction required for conditions beyond the scope of this standard, such as throttling service or downward acting gates, including intended operation frequency and duration.
16. Frequency of operation and special operating conditions, such as ice formation.
17. An installation-requirement drawing showing clearances, wall thickness, details of wall pipe and thimble installation, and actuator location.
18. Affidavit of compliance and certification of design (Sec. 6.3).

III.B. *Modification to Standard.* Any modification to 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. Open-channel, fabricated-metal weir gates have been added to the title and scope of the standard.
2. The gate size limitation has been removed (Sec. 1.1).
3. The maximum allowable design stress has been increased from $\frac{1}{5}$ of the ultimate strength to $\frac{1}{4}$ of the ultimate strength (Sec. 4).
4. The maximum allowable gate deflection has been increased to $\frac{1}{360}$ of the gate width (Sec. 4.3.2.2).
5. The information on field-leakage testing has been moved to the verification section (Sec. 5.2.4).

V. Comments. If you have any comments or questions about this standard, please call the AWWA Volunteer and Technical Support Group at (303) 794-7711, FAX (303) 795-7603, or write to the group at 6666 West Quincy Avenue, Denver, CO 80235-3098, or e-mail at standards@awwa.org.



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SECTION 1: GENERAL

Sec. 1.1 Scope

This standard covers open-channel, fabricated-metal slide gates and open-channel, fabricated-metal weir gates for water supply service. This standard also covers manual slide lift mechanisms and standard gate appurtenances. Power-driven actuators are specified in ANSI/AWWA C540, Standard for Power-Actuating Devices for Valves and Slide Gates.

Slide gates have ultra-high-molecular-weight (UHMW) polyethylene bearing surfaces and may use either UHMW polyethylene or resilient rubber sealing surfaces as required to meet leakage requirements. The three basic types of gates include the following:

1. Upward opening, wall-mounted, end-of-channel gates.
2. Downward opening (weir), wall-mounted, end-of-channel gates.
3. Upward opening, embedded, or channel wall-mounted (existing structures only) gates.