



**American Water Works
Association**

The Authoritative Resource for Safe Drinking WaterSM

ANSI/AWWA C561-04
(First Edition)

AWWA Standard

Fabricated Stainless Steel Slide Gates



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Foreword

This foreword is for information only and is not a part of AWWA C561.

I. Introduction.

I.A. *Background.* A slide gate is a single-faced valve consisting of an open frame and a slide. Examples of where this type of “valve” is used include controlling flow at openings in tank walls and at ends of pipes. The term *slide gate* has been adopted for use by this series of standards, which supersede AWWA C501-92. The standards are

C560—Cast Metal Slide Gates

C561—Fabricated Stainless Steel Slide Gates

C562—Fabricated Aluminum Slide Gates

C563—Fabricated Nonmetal Slide Gates

Other terms used to describe single-faced valves include *penstocks* and *sluice gates*.

These gates are raised and lowered by means of a stem or rod, usually manually actuated or power-actuated hoists.

The slide gates represented by the C-560 through C-563 series differ in material and in the means of sealing between the slide and the fixed frame.

C560 gates have a cast-metal slide and frame with machined metal seating faces and wedges to force the slide to seal between the seating faces on the slide and frame.

C561 gates have a fabricated, reinforced stainless steel slide and frame with ultra high molecular weight (UHMW) polyethylene seating faces.

C562 gates have a fabricated, reinforced aluminum slide and frame with UHMW polyethylene seating faces.

C563 gates have a fiberglass reinforced composite plastic or rigid compressed plastic slide and fiberglass reinforced composite plastic or stainless steel frame with UHMW polyethylene seating faces.

I.B. *History.* The original AWWA standard for slide gates (then referred to as sluice gates) was approved as tentative in June 1941 and described cast-iron gates. The tentative standard was revised and approved in 1967 as AWWA Standard C501. Subsequent editions were approved in January 1980, June 1987, and June 1992. Following the latest revision, the Standards Council authorized the development of additional standards for slide gates to recognize the widespread use of slide gates similar to C501 gates in performance but manufactured by different methods and of

different materials. For consistency among the new standards and recognizing the new designs employed, the Standards Council directed that all of the standards use the name “slide gate” in lieu of the term “sluice gate.” The Standards Council also directed that C501 be redesignated C560, with subsequent slide gate standards numbered consecutively. This is the first edition of C561, Standard for Fabricated Stainless-Steel Slide Gates, and was approved on Jan. __, 2004.

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 April 7, 1990.
2. Specific policies of the state or local agency.

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.

Other references, including AWWA standards, *Food Chemicals Codex*, *Water Chemical Codex*,[§] and other standards considered appropriate by the state or local agency.

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

†American National Standards Institute, 25 W. 43rd St., Fourth Floor, 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.

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 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.

AWWA C561 does not address additives requirements. Thus, users of this standard should consult the appropriate state and 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 current information on product certification.

II. Special Issues. In creating this standard, the committee initially drafted a standard governing a slide gate design with an integral seat–seal system utilizing ultrahigh molecular weight polyethylene as the resilient material providing the seat and seal. This design and material, it was felt, offered the widest application to the water industry, particularly to high head applications and those applications subject to abrasive conditions. However, an older gate design utilizing a resilient seal separate from the seat has been in use for a number of years and performs well. Accordingly, this standard was broadened to include the older design with a seal separate from the seat. The purchaser is urged to consult with the manufacturers on the application of the different slide gate designs to the particular application.

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 covered in the purchaser’s specifications:

1. Standard used—that is, AWWA C561, Standard for Fabricated Stainless Steel Slide Gates, of latest revision.
2. Number of units required.

3. Size and type of closure—conventional or flush-bottom.
4. Any drawings and material specifications required of the supplier or of the manufacturer (Sec. 4.1 and 4.2).
5. If test records must be viewed (Sec. 4.3.2).
6. Acceptable materials (Sec. 4.3.3).
7. Design head measured from the surface of water to centerline of gate, in feet (meters), for the following:
 - a. Seating head
 - b. Unseating head
8. Operating head measured from surface of water to centerline of gate, in feet (meters).
9. Type of gate mounting used: If a wall thimble is used, required length and shape (Sec. 4.4.10).
10. If seals, separate from seats, are to be provided (Sec. 4.3.3.8 and 4.4.3).
11. Rising stem or nonrising stem (Sec. 4.4.7 and 4.4.11).
12. Type of actuator—manual, electric-motor-driven, or hydraulic-cylinder. If electric-motor or hydraulic-cylinder, the purchaser should refer to ANSI/AWWA C540, Standard for Power-Actuating Devices for Valves and Slide Gates.
13. If hydraulic or pneumatic actuators are specified, provide cylinder operating media and pressure (refer to ANSI/AWWA C540).
14. Omission of stem covers if not required (Sec. 4.4.13.6).
15. If a gate position indicator is to be provided with the actuator (Sec. 4.4.13.7).
16. Weld inspections, if required (Sec. 4.5.2.2).
17. Inspection by purchaser, if required (Sec. 5.1).
18. Leakage tests in the shop (Sec. 5.2.1) and in the field (Sec. 5.2.2), if required.
19. Separate shipment of embedded items, if required (Sec. 6.2).
20. Affidavit of compliance, if required (Sec. 6.3).
21. 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.
22. Frequency of operation and special operating conditions, such as ice formation.
23. An installation-requirement drawing showing clearances, wall to floor thicknesses, details of wall pipe and thimble installation, and location of actuator.

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

IV. **Major Revisions.** This is the first edition of this standard.

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 by e-mail at standards@awwa.org.

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Contents

All AWWA standards follow the general format indicated subsequently. Some variations from this format may be found in a particular standard.

SEC.	PAGE	SEC.	PAGE
Foreword		4	Requirements
I	Introduction..... vii	4.1	Data to Be Provided by the Supplier 4
I.A	Background..... vii	4.2	Data to Be Provided by the Manufacturer 5
I.B	History..... vii	4.3	Materials 5
I.C	Acceptance viii	4.4	General Design 7
II	Special Issues..... ix	4.5	Manufacture 13
III	Use of This Standard ix	4.6	Installation 15
III.A	Purchaser Options and Alternatives ix	5	Verification
III.B	Modification to Standard..... xi	5.1	Inspection 16
IV	Major Revisions xi	5.2	Test Procedures..... 16
V	Comments xi	6	Delivery
Standard		6.1	Marking..... 17
1	General	6.2	Shipment 17
1.1	Scope 1	6.3	Affidavit of Compliance..... 17
1.2	Purpose 1	Appendix	
1.3	Application 1	A	Force Required to Actuate Fabricated Stainless Steel Gates..... 19
2	References 2		
3	Definitions 4		