



**American Water Works
Association**

The Authoritative Resource on Safe Water®

ANSI/AWWA C515-09
(Revision of ANSI/AWWA C515-01)

AWWA Standard

Reduced-Wall, Resilient- Seated Gate Valves for Water Supply Service



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AWWA Standard

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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
<i>Foreword</i>		5	Verification
I	Introduction..... vii	5.1	Testing 19
I.A	Background..... vii	5.2	Plant Inspection and Rejection..... 20
I.B	History..... vii	6	Delivery
I.C	Acceptance vii	6.1	Marking 21
II	Special Issues ix	6.2	Preparation for Shipment 21
III	Use of This Standard ix	6.3	Affidavit of Compliance 21
III.A	Purchaser Options and Alternatives .. ix	<i>Appendix</i>	
III.B	Modification to Standard x	A	Installation, Operation, and Maintenance of Reduced-Wall, Resilient-Seated Gate Valves
IV	Major Revisions..... x	A.1	General 23
V	Comments x	A.2	Unloading 23
<i>Standard</i>		A.3	Receiving Inspection 23
1	General	A.4	Storage 24
1.1	Scope 1	A.5	Installation 24
1.2	Purpose 2	A.6	Maintenance 27
1.3	Application..... 2	A.7	Repairs 28
2	References 2	<i>Tables</i>	
3	Definitions 5	1	Design Torque 9
4	Requirements	2	Minimum Thickness of Body and Bonnet 11
4.1	Data to Be Supplied by the Manufacturer 6	3	Excess Flange Thickness 11
4.2	Materials 6	4	Minimum Thickness for Ductile-Iron Connecting End Flanges 11
4.3	General Design 9		
4.4	Detailed Design 10		
4.5	Fabrication 18		

SEC.	PAGE	SEC.	PAGE		
5	Stem, Gate, Thrust Collar, and Stem Nut Copper Alloys	8	Diameter of Handwheels.....	17	
	13	9	Gear Ratios	19	
6	Stainless-Steel Valve Stem Alloys....	14	10	Proof of Design Torque	20
7	Minimum Diameter of Stem and Minimum Number of Turns to Open.....				15

Foreword

This foreword is for information only and is not a part of ANSI/AWWA C515.*

I. Introduction.

I.A. *Background.* This standard describes reduced-wall, resilient-seated gate valves with nonrising stems (NRS) and outside screw-and-yoke (OS&Y) rising stems, including tapping gate valves, for water supply service. The standard applies to water supply service having a pH range of 6.5 to 8.5 and a temperature range from 33° to 125°F (0.6° to 52°C).

I.B. *History.* The first edition of ANSI/AWWA C509 Standard for Resilient-Seated Gate Valves was published in 1980. ANSI/AWWA C509 includes body and bonnet parts of either gray or ductile cast iron with shell-wall thicknesses equal to those of the ANSI/AWWA C500, Standard for Metal-Seated Gate Valves, which was first issued in 1952 as ANSI/AWWA C500 but had its roots going back to the first AWWA standard for gate valves, adopted June 24, 1913.

In 1993, the AWWA Standards Committee on Gate Valves and Swing Check Valves received authorization from the AWWA Standards Council to prepare a standard covering reduced-wall, resilient-seated gate valves. Just as other recent AWWA standards have been developed as a result of the attendant strength of ductile iron (for pressure pipe and compact fittings), this standard results from its application for gate valves.

The Manufacturer's Standardization Society of the Valves and Fittings Industry (MSS) has played an important role in developing this standard. Founded in 1924, MSS has had official organizational representation on AWWA standards committees dealing with valve and hydrant products since 1930.

This edition of ANSI/AWWA C515 was approved by the AWWA Board of Directors on Jan. 25, 2009.

I.C. *Acceptance.* In May 1985, the United States 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 direct and indirect drinking water additives. Other members of the original consortium included the American Water Works Association Research

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

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†, 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 C515 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.
2. Determine the status of certifications by parties offering to certify products for contact with, or treatment of, drinking water.

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

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

‡ Both publications available from National Academy of Sciences, 500 Fifth Street NW, Washington, DC 20001.

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.

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

1. Standard used—that is, ANSI/AWWA C515, Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service, of latest revision.
 2. Whether compliance with NSF/ANSI 61, Drinking Water System Components—Health Effects, is required.
 3. Whether or not the purchaser requires cast ferrous valve components to be made of ductile iron.
 4. Quantity required.
 5. Special packaging for shipment as may be required for protection of coatings.
 6. Size and type of valve, NRS or OS&Y (Sec. 1.1).
 7. Whether or not the valve will be used in a corrosive environment (Sec. 1.1.3) determined by methods described in AWWA M27.
 8. Catalog data, net weight, and assembly drawings to be provided by the manufacturer (Sec. 4.1), if required.
 9. Details of other federal, state or provincial, and local requirements (Sec. 4.2).
 10. Whether or not the valve will be subjected to water that reacts chemically with materials used in these valves. Consultation with the manufacturer is advised to determine the suitability in cases of doubt (Sec. 4.2.3.3.3).
 11. Cutter diameter must be specified for tapping valves (Sec. 4.3.2).
- NOTE: Tapping machine shell cutters are made in either full size (outside diameter [OD] is full nominal size) or undersize (OD is less than full nominal size, i.e., usually ½ in. (13 mm) less [MSS* SP-113]). The purchaser should specify the size of the shell cutter the valve must accept.
12. Type of valve ends—flanged (Sec. 4.4.1.4.1), tapping valve flange

* Manufacturers Standardization Society of the Valve and Fittings Industry, 127 Park Street NE, Vienna, VA 22180.

(Sec. 4.4.1.4.4), mechanical joint (Sec. 4.4.1.4.2), or push-on joint (Sec. 4.4.1.4.3).

13. Whether or not bolting material with physical and chemical properties other than ASTM* A307 is required (Sec. 4.4.4). It is recommended that the purchaser verify with the supplier the appropriateness of any alternative bolting materials required. What alternative, if any, is desired in the type of rustproofing for bolts and nuts (Sec. 4.4.4).

14. Whether the valve is handwheel or wrench-nut operated and the direction in which the handwheel or wrench nut shall turn to open (Sec. 4.4.7).

15. Detailed description of wrench nut, if not in accordance with Sec. 4.4.7.

16. Whether or not records of tests specified in Section 5 are to be provided.

17. Special markings (Sec. 6.1), if required.

18. Affidavit of compliance (Sec. 6.3), if required.

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

IV. Major Revisions. Major revisions made to the standard in this edition include the following:

1. Revised to cover 42-in. NPS and 48-in. NPS sizes.
2. Revised to include integral and nonintegral thrust collar stem designs.
3. Revised to include reduced flange thickness for flanged-end valves.
4. Revised to include socket head and metric fasteners.
5. Added additional copper alloys to Table 5.
6. Revised to include the use of stainless-steel components (Sec. 4.2.3.5).

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 at 303.795.7603, write to the group at 6666 West Quincy Avenue, Denver, CO 80235-3098, or e-mail the group at standards@awwa.org.

* ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428.



**American Water Works
Association**

ANSI/AWWA C515-09
(Revision of ANSI/AWWA C515-01)

AWWA Standard

Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes reduced-wall, resilient-seated gate valves with non-rising stems (NRS) and outside screw-and-yoke (OS&Y) rising stems, including tapping gate valves, for water supply service having a temperature range of 33° to 125°F (0.6° to 52°C). These valves are intended for applications where fluid velocity does not exceed 16 ft/sec (4.9 m/sec) when the valve is in the fully open position.

1.1.1 *Sizes.* This standard describes nonrising stem resilient seated gate valves 3-in. (75-mm) NPS* through 48-in. (1,200-mm) NPS and outside screw and yoke (OS&Y) rising stem valves, 3-in. (75-mm) NPS through 16-in. (400-mm) NPS. Sizes refer to the nominal diameter of the waterway through the inlet and outlet connections and the closure area.

1.1.2 *Valve pressure rating.* The minimum design working water pressure shall be 200 psig (1,380 kPa) for all sizes.

1.1.3 *Conditions and materials not covered.* This standard is not intended to describe special conditions of gate valve installation or operation,

* Nominal pipe size.