ANSI/AWWA C563-04
(First Edition)

American Water Works Association

The Authoritative Resource for Safe Drinking Water®

AWWA Standard

Fabricated Composite Slide Gates

American National Standards Institute

Effective date: Nov. 1, 2004.
First edition approved by AWWA Board of Directors June 13, 2004.
Approved by American National Standards Institute August 24, 2004.

6666 West Quincy Avenue
Denver, CO 80235-3098
T 1.800.926.7337
www.awwa.org

Advocacy
Communications
Conferences
Education and Training
► ***Science and Technology***
Sections

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004

AWWA Standard

This document is an American Water Works Association (AWWA) standard. It is not a specification. AWWA standards describe minimum requirements and do not contain all of the engineering and administrative information normally contained in specifications. The AWWA standards usually contain options that must be evaluated by the user of the standard. Until each optional feature is specified by the user, the product or service is not fully defined. AWWA publication of a standard does not constitute endorsement of any product or product type, nor does AWWA test, certify, or approve any product. The use of AWWA standards is entirely voluntary. AWWA standards are intended to represent a consensus of the water supply industry that the product described will provide satisfactory service. When AWWA revises or withdraws this standard, an official notice of action will be placed on the first page of the classified advertising section of *Journal AWWA*. The action becomes effective on the first day of the month following the month of *Journal AWWA* publication of the official notice.

American National Standard

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an American National Standard does not in any respect preclude anyone, whether that person has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. American National Standards are subject to periodic review, and users are cautioned to obtain the latest editions. Producers of goods made in conformity with an American National Standard are encouraged to state on their own responsibility in advertising and promotional materials or on tags or labels that the goods are produced in conformity with particular American National Standards.

CAUTION NOTICE: The American National Standards Institute (ANSI) approval date on the front cover of this standard indicates completion of the ANSI approval process. This American National Standard may be revised or withdrawn at any time. ANSI procedures require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of publication. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute, 25 W. 43rd St., Fourth Floor, New York, NY 10036; (212) 642-4900.

Science and Technology

AWWA unites the drinking water community by developing and distributing authoritative scientific and technological knowledge. Through its members, AWWA develops industry standards for products and processes that advance public health and safety. AWWA also provides quality improvement programs for water and wastewater utilities.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information or retrieval system, except in the form of brief excerpts or quotations for review purposes, without the written permission of the publisher.

Copyright © 2004 by American Water Works Association
Printed in USA

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004

Committee Personnel

The AWWA Standards Committee on Slide Gates, which developed and approved this standard, had the following personnel at the time of approval:

David C. Wheelock, *Chair*

Consumer Members

R.J. Alberts, City of Pasco, Pasco, Wash.	(AWWA)
Ronald Arrington, US Bureau of Reclamation, Denver, Colo.	(USBR)
Erik Holck, Denver Water Department, Denver, Colo.	(AWWA)
Arshed Ramankutty, Detroit Water and Sewerage, Detroit, Mich.	(AWWA)
H.C. Suan, Edmonton Public Works, Edmonton, Alta.	(AWWA)

General Interest Members

L.C. Gerbig, URS Corporation, Denver, Colo.	(AWWA)
S.C. Danos,* Standards Council Liaison, Littleton Electric Light & Water Departments, Littleton, Mass.	(AWWA)
K.H. Hipps, Consoer Townsend Envirodyne, Chicago, Ill.	(AWWA)
M.R. Johnson, R.H. White Construction Company, Auburn, Mass.	(AWWA)
P.J. Olson,* Standards Engineer Liaison, AWWA, Denver, Colo.	(AWWA)
D.C. Wheelock, Brazos River Authority, Waco, Texas	(AWWA)

Producer Members

Francois Bedard, H. Fontaine Ltd., Magog, Que.	(AWWA)
Matthew Mirto, Coldwell-Wilcox Technologies, Shelton, Conn.	(AWWA)
David Niblett, Ashbrook Corporation, Houston, Texas	(AWWA)
G.E. Whipps, Whipps Inc., Athol, Mass.	(AWWA)

*Liaison, nonvoting

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004

This page intentionally blank.

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Full document details: AWWA C563 2004

Contents

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

SEC. PAGE

Foreword

I Introduction vii
I.A Background vii
I.B History vii
I.C Acceptance vii
II Special Issues ix
III Use of This Standard ix
III.A Purchaser Options and Alternatives .. ix
III.B Modification to Standard x
IV Major Revisions x
V Comments x

Standard

1 General

1.1 Scope 1
1.2 Purpose 1
1.3 Application 2

2 References 2

3 Definitions 5

4 Requirements

4.1 Data to Be Provided by the Supplier 6
4.2 Data to Be Provided by the Manufacturer 6
4.3 Materials 6
4.4 General Design 10
4.5 Manufacture 18
4.6 Installation 19

5 Verification

5.1 Inspection 20
5.2 Test Procedures 20

6 Delivery

6.1 Marking 21
6.2 Shipping 21
6.3 Affidavit of Compliance 22

Tables

1 Material Properties 7
2 Gate and Appurtenance Materials 9
3 Manual Lift Materials and Standards 10

Appendix

A Force Required to Actuate Fabricated Composite Gates 23

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004

This page intentionally blank.

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Full document details: AWWA C563 2004

Foreword

This foreword is for information only and is not a part of ANSI/AWWA C563.

I. Introduction.

I.A. *Background.* A fabricated composite slide gate is a single-faced, vertically sliding valve used to control water through orifice openings in walls, at the ends of pipes, at the ends of open-top channels, or within open-top channels. Downward opening gates act as weir gates. Slide gates are raised and lowered by means of a stem and rod using a manually operated screw stem hoist, an electrically driven screw stem hoist, or by a hydraulic or pneumatic cylinder. Gates are mounted directly to concrete walls with anchor bolts, grouted into blockouts within concrete channel walls, or bolted to a pipe flange.

Fabricated composite slide gates have fiberglass reinforced composite plastic or rigid compressed plastic slides with frames of either the same material, stainless steel, or coated carbon steel, ultrahigh molecular weight (UHMW) polyethylene bearing surfaces and use either UHMW polyethylene or resilient rubber to ensure proper sealing.

I.B. *History.* Development of the original AWWA standard for composite slide gates was begun in 2000 by the AWWA Standards Committee on Slide Gates as an ongoing effort to meet the needs of the industry. This standard was approved by the AWWA Board of Directors on June 13, 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

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

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004

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.

3. Two standards developed under the direction of NSF, NSF*/ANSI† 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 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 C563 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 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.

---

*NSF International, 789 N. Dixboro Rd., Ann Arbor, MI 48106.

†American National Standards Institute, 25 W. 43rd St., Fourth Floor, New York, NY 10036.

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

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004

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 covered in the purchaser's specifications:

1. Standard used—that is, ANSI/AWWA C563, Standard for Fabricated Composite Slide Gates, of latest revision.
2. Number of units required.
3. Size and type of closure—conventional or flush bottom.
4. Design head measured from surface of water to centerline of gate, in feet (meters), for the following:
   a. Seating head.
   b. Unseating head.
5. Operating head measured from surface of water to centerline of gate, in feet (meters).
6. If hydraulic or pneumatic actuators are specified, provide cylinder operating media and pressure (refer to ANSI/AWWA C540).
7. Definition of any special design and construction required for conditions beyond the scope of this standard, such as throttling service, including intended operation frequency and duration.
8. Frequency of operation and special operating conditions, such as ice formation.
9. An installation-requirement drawing showing clearances, wall and floor thickness, details of wall pipe or thimble installation, and location of actuator.
10. Any drawings and material specifications required of the supplier or of the manufacturer (Sec. 4.1 and Sec. 4.2).
11. If test records must be viewed (Sec. 4.3.2).
12. Acceptable materials (Sec. 4.3.3).
13. Rising stem or nonrising stem (Sec. 4.4.2.3 and 4.4.6).
14. Type of actuator—manual, electric-motor-driven, or hydraulic cylinder (Sec. 4.4.3 and Sec. 4.4.9). If electric-motor-driven or hydraulic cylinder, the purchaser should refer to ANSI/AWWA C540, Standard for Power-Actuating Devices for Valves and Sluice Gates (Sec. 4.4.9).

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004

15. Omission of stem covers (Sec. 4.4.8.6), if not required.

16. Weld inspections (Sec. 4.5.1.2.3), if required.

17. Inspection by purchaser (Sec. 5.1), if required.

18. Leakage tests in the shop (Sec. 5.2.2) and in the field (Sec. 5.2.3), if required.

19. Separate shipment of embedded items (Sec. 6.2), if required.

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

III.B. *Modification to Standard.* Any modification of 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 (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.

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004

American Water Works Association

ANSI/AWWA C563-04
(First Edition)

AWWA Standard

Fabricated Composite Slide Gates

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes vertically mounted, fabricated composite, resilient-seated slide gates (hereafter simply referred to as gates) designed for either seating head or unseating head, or both, in ordinary water supply service. The gates are primarily used to shut off water flow through a rectangular or round orifice, end of channel, or in-channel openings. They may be of the conventional closure or the flush bottom-closure type and may be opened either upward or downward. The gates shall have ultrahigh molecular weight (UHMW) polyethylene or resilient rubber sealing surfaces, as required to meet leakage requirements. This standard also describes manual gate actuator mechanisms together with standard accessories. Power-actuating mechanisms, including electric, hydraulic, or pneumatic, are described in ANSI/AWWA C540.

Sec. 1.2 Purpose

The purpose of this standard is to provide the minimum requirements for fabricated composite slide gates, including materials, general design, manufacture, testing, inspection, and shipment.

Copyright © 2004 American Water Works Association, All Rights Reserved.

Documents
Document Sharing Hub

Copyrighted material licensed to University of Iowa by Thomson Reuters (Scientific), Inc., subscriptions.techstreet.com, downloaded on Jan-26-2015 by Susan Duerr. No further reproduction or distribution is permitted. Unco

Full document details: AWWA C563 2004