



**American Water Works  
Association**

*Dedicated to the World's Most Important Resource®*

**ANSI/AWWA C516-14**  
(Revision of ANSI/AWWA C516-10)

**AWWA Standard**

# Large-Diameter Rubber- Seated Butterfly Valves, Sizes 78 In. (2,000 mm) and Larger

Effective date: July 1, 2015.

First edition approved by AWWA Board of Directors Feb. 12, 2006.

This edition approved June 8, 2014.

Approved by American National Standards Institute Mar. 23, 2015.



This is a preview. [Click here to purchase the full publication.](#)

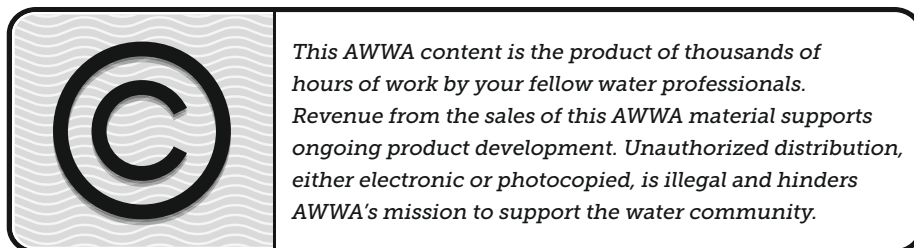
## AWWA Standard

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. This standard does not supersede or take precedence over or displace any applicable law, regulation, or code of any governmental authority. 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 in the Official Notice section of *Journal - American Water Works Association*. The action becomes effective on the first day of the month following the month of *Journal - American Water Works Association* 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 ANSI approval. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036; 212.642.4900; or emailing [info@ansi.org](mailto:info@ansi.org).



ISBN-13, print: 978-1-62576-105-7

eISBN-13, electronic: 978-1-61300-342-8

DOI: <http://dx.doi.org/10.12999/AWWA.C516.14>

---

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 © 2015 by American Water Works Association  
Printed in USA

# Committee Personnel

The AWWA standards subcommittee for Large-Diameter Butterfly Valves that reviewed this standard had the following personnel at the time of approval:

John V. Ballun, *Chair*

## *General Interest Members*

J.W. Green, Lockwood, Andrews & Newman, Oakbrook Terrace, Ill. (AWWA)

R.A. Ward, Dufresne & Associates PC, Windsor, Vt. (AWWA)

## *Producer Members*

A. Abouelleil, Henry Pratt Company, Aurora, Ill. (AWWA)

J.V. Ballun, Val-Matic Valve and Manufacturing Corporation, Addison, Ill. (AWWA)

D.E. Douro, Olson Technologies Inc., Allentown, Pa. (AWWA)

J.R. Holstrom, Val-Matic Valve and Manufacturing Corporation, Elmhurst, Ill. (AWWA)

A.W. Libke, DeZURIK Inc., Sartell, Minn. (AWWA)

T. Martin, Adams Valves Inc., Houston, Texas (AWWA)

J.H. Wilber, American AVK, Littleton, Colo. (AWWA)

## *User Members*

S. Carpenter, San Diego Water, Escondido, Calif. (AWWA)

V.Q. Le, Los Angeles Water and Power, Los Angeles, Calif. (AWWA)

P. Ries, Denver Water Department, Denver, Colo. (AWWA)

S.Y. Tung, City of Houston, Houston, Texas (AWWA)

The AWWA Standards Committee on Butterfly Valves, which reviewed and approved this standard, had the following personnel at the time of approval:

Mark MacConnell, *Chair*

A. Ali, ADA Consulting, Surrey, B.C., Canada (AWWA)

M.D. Bennett, MWH, Cleveland, Ohio (AWWA)

B.E. Bosserman, Engineering Consultants, Mission Viejo, Calif. (AWWA)

J. Hebenstreit, UL LLC, Northbrook, Ill. (UL)

F. Hinker, Santa Rosa, N.M. (AWWA)

M.C. Johnson, Utah State University, Water Research Laboratory, Logan, Utah (AWWA)

T. Jordan, HDR, Denver, Colo.	(AWWA)
T.J. McCandless,* Standards Engineer Liaison, AWWA, Denver, Colo.	(AWWA)
W. Rahmeyer,† Utah State University, Logan, Utah	(AWWA)
U. Sant, AECOM, Dallas, Texas	(AWWA)
R.A. Ward, Dufresne & Associates PC, Windsor, Vt.	(AWWA)

*Producer Members*

A. Abouelleil, Henry Pratt Company, Aurora, Ill.	(AWWA)
S. Allen, Bray Valve, Jonesboro, Ark.	(AWWA)
J.V. Ballun, Val-Matic Valve and Manufacturing Corporation, Elmhurst, Ill.	(AWWA)
L.W. Fleury Jr.,† Mueller Group, Smithfield, R.I.	(AWWA)
K.R. Graeff,† Rodney Hunt Company, Orange, Mass.	(AWWA)
T.A. Hartman, Hartman Valve Corporation, St. Louis, Mo.	(AWWA)
H. Heribert, VAG, Mannheim, Germany	(AWWA)
K. Johnson, M&H Valve Company, Anniston, Ala.	(AWWA)
A.W. Libke, DeZURIK Inc., Sartell, Minn.	(AWWA)
R. Tschida,† DeZURIK Inc., Sartell, Minn.	(AWWA)

*User Members*

S. Carpenter, San Diego County Water Authority, Escondido, Calif.	(AWWA)
D.W. Coppes, Massachusetts Water Resources Authority, Chelsea, Mass.	(AWWA)
S. Hattan, Tarrant Regional Water District, Ft. Worth, Texas	(AWWA)
V.Q. Le, Los Angeles Water and Power, Los Angeles, Calif.	(AWWA)
M. MacConnell, Metro Vancouver, Burnaby, B.C., Canada	(AWWA)
P.J. Ries, Denver Water Department, Denver, Colo.	(AWWA)
S.Y. Tung, City of Houston, Houston, Texas	(AWWA)

---

\* Liaison, nonvoting

† Alternate

# 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
<b><i>Foreword</i></b>		<b>2</b>	<b>References</b> ..... 2
I Introduction .....	vii	<b>3</b>	<b>Definitions</b> ..... 4
I.A Background.....	vii	<b>4</b>	<b>Requirements</b>
I.B History .....	vii	4.1	Data to Be Provided by the Manufacturer or Supplier ..... 6
I.C Acceptance .....	vii	4.2	Materials ..... 7
II Special Issues.....	ix	4.3	General Design ..... 8
II.A General .....	ix	4.4	Welding and Fabrication ..... 16
II.B Buried Valves .....	ix	4.5	Coatings..... 18
II.C Advisory Information on Product Applications .....	x	<b>5</b>	<b>Verification</b>
II.D Advisory Information on Scheduling Requirements .....	xi	5.1	Shop Tests..... 18
II.E Valve Discs and Piping Design .....	xi	5.2	Proof-of-Design Tests ..... 19
II.F Effects of Manual or Power Actuator Stroke Time .....	xii	5.3	Nonconformance ..... 20
III Use of This Standard .....	xiii	<b>6</b>	<b>Delivery</b>
III.A Purchaser Options and Alternatives .....	xiii	6.1	Marking..... 21
III.B Modification to Standard .....	xvi	6.2	Shipping..... 21
IV Major Revisions.....	xvi	<b><i>Appendix</i></b>	
V Comments .....	xvi	A	Installation, Operation, and Maintenance of Large-Diameter Butterfly Valves ..... 23
<b><i>Standard</i></b>		A.1	General ..... 23
<b>1 General</b>		A.2	Unloading..... 23
1.1 Scope .....	1	A.3	Storage ..... 23
1.2 Purpose .....	2	A.4	Inspection Prior to Installation ..... 24
1.3 Application.....	2		

SEC.	PAGE	SEC.	PAGE
A.5	Installation .....	24	
A.6	Field Testing.....	26	
A.7	Operation.....	26	
A.8	Maintenance .....	27	
		<b>Tables</b>	
		1	Laying Length Ranges for Flanged Valves..... 9
		2	Valve Test Cycles Required..... 20