



**American Water Works
Association**

The Authoritative Resource on Safe Water®

ANSI/AWWA C512-07
(Revision of ANSI/AWWA C512-04)

AWWA Standard

Air-Release, Air/Vacuum, and Combination Air Valves for Waterworks Service



Effective date: May 1, 2008.
First edition approved by AWWA Board of Directors June 20, 1992.
This edition approved June 24, 2007.
Approved by American National Standards Institute Jan. 14, 2008.

6666 West Quincy Avenue
Denver, CO 80235-3098
T 800.926.7337
www.awwa.org

Advocacy
Communications
Conferences
Education and Training
Science and Technology
Sections **Documents**
AVA Document Sharing Hub

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 codes 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 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 West 43rd Street, Fourth Floor, New York, NY 10036; (212) 642-4900.

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 © 2008 by American Water Works Association
Printed in USA

Committee Personnel

The AWWA Standards Committee on Waterworks Air-Release Valves, which developed and approved this standard, had the following personnel at the time of approval:

Miles E. Wollam, *Chair*

General Interest Members

J.B. Allen,* Standards Engineer Liaison, AWWA, Denver, Colo.	(AWWA)
J.J. Cusack Jr., Bryant Associates, Boston, Mass.	(AWWA)
R.G. Fuller, HDR Engineering Inc., Denver, Colo.	(AWWA)
W.A. Hunt, Consulting Engineer, Bozeman, Mont.	(AWWA)
K.W. Kells,* Consulting Engineer, Ivoryton, Conn.	(AWWA)
W.L. Meinholz, AB&H, A Donahue Group, Chicago, Ill.	(AWWA)
T.J. Stolinski Jr., Black & Veatch Corporation, Kansas City, Mo.	(AWWA)
R.J. Wahanik, Hysstras, Wyomissing, Pa.	(AWWA)
R.A. Ward, Dufresne & Associates PC, Windsor, Vt.	(AWWA)
M.E. Wollam, MWH Inc., Pasadena, Calif.	(AWWA)

Producer Members

D. Alexander,† Cla-Val Company, Costa Mesa, Calif.	(AWWA)
J.V. Ballun, Val-Matic Valve & Manufacturing Corporation, Elmhurst, Ill.	(AWWA)
R. DiLorenzo, Cla-Val Automatic Control Valves, Wauconda, Ill.	(AWWA)
K. Hall,† APCO Willamette/Valve & Primer, San Clemente, Calif.	(AWWA)
P.O. Landon,† Val-Matic Corporation, Elmhurst, Ill.	(AWWA)
J.E. Lescovich, GA Industries Inc., Cranberry Township, Pa.	(AWWA)
B.J. Lewis, Crispin Multiplex Manufacturing Company, Berwick, Pa.	(AWWA)
W.J. Nicholl,† GA Industries Inc., Cranberry Township, Pa.	(AWWA)
J.M. Radtke, Aqua-Dynamic Systems Inc., Wilkes-Barre, Pa.	(AWWA)
D.L. Smith, APCO Willamette/Valve & Primer, Schaumburg, Ill.	(AWWA)
N. Zloczower,* A.R.I. Flow Control Accessories, Israel	(AWWA)

User Members

A. Ali, Greater Vancouver Water District, Burnaby, B.C.	(AWWA)
J.H. Bambei Jr., Denver Water Department, Denver, Colo.	(AWWA)
N.E. Gronlund, East Bay Municipal Utility District, Oakland, Calif.	(AWWA)

* Liaison, nonvoting

† Alternate

M.I. Schwartz, Loudon County Sanitation Authority, Leesburg, Va.

(AWWA)

J.A. Wilke, Seattle Public Utilities, Seattle, Wash.

(AWWA)

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		1.2	Purpose 1
I	Introduction..... vii	1.3	Application..... 2
I.A	Background..... vii	2	References 2
I.B	History..... vii	3	Definitions 3
I.C	Acceptance vii	4	Requirements
II	Special Issues viii	4.1	Data to Be Provided by
II.A	Advisory Information on Product		Manufacturer or Supplier 4
	Application..... viii	4.2	Materials 4
II.B	Venting viii	4.3	General Design and Detailed
II.C	Throttling and Slow-Closing		Design Requirements 6
	Devices..... ix	4.4	Workmanship and Painting..... 8
II.D	Pipeline Water Column Separation	5	Verification
	Protection ix	5.1	Testing 8
III	Use of This Standard ix	5.2	Inspection 9
III.A	Purchaser Options and Alternatives ix	5.3	Rejection..... 10
III.B	Modification to Standard x	6	Delivery
IV	Major Revisions..... x	6.1	Marking..... 10
V	Comments x	6.2	Preparation for Shipment 10
		6.3	Affidavit of Compliance 10
Standard			
1	General		
1.1	Scope 1		

This page intentionally blank.

Foreword

This foreword is for information only and is not a part of AWWA C512.

I. Introduction

I.A. *Background.* This standard describes three types of air valves: air-release valves, air/vacuum valves, and combination air valves.

1. Air-release valves, also called small-orifice valves, are designed to automatically release small pockets of accumulated air from a pipeline while the system operates under pressure exceeding atmospheric pressure.

2. Air/vacuum valves, also called large-orifice valves, are designed to exhaust large quantities of air automatically during pipeline filling and to admit large quantities of air automatically when the internal pressure in the pipeline drops below atmospheric pressure.

3. Combination air valves are designed to perform the same function as air/vacuum valves but, in addition, they will automatically release small pockets of air from the pipeline while under pressure, like an air-release valve.

I.B. *History.* The AWWA Standards Committee on Waterworks Air-Release Valves was authorized on Nov. 17, 1984, to respond to a request for a standard on air valves. The first edition of this standard, AWWA/ANSI C512, was approved by the AWWA Board of Directors on Jan. 26, 1992, the second edition on June 20, 1999, and the third edition on June 13, 2004. This edition was approved on June 24, 2007.

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 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

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

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.

AWWA/ANSI C512 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.
3. Determine current information on product certification.

II. Special Issues.

II.A. *Advisory Information on Product Application.* For additional guidance regarding selecting, sizing, locating, and installing air-release, air/vacuum, and combination air valves, see AWWA Manual M51, *Air-Release, Air/Vacuum, & Combination Air Valves*.

II.B. *Venting.* When selecting types of valves, it must be noted that air/vacuum

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

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

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