ANSI/AWWA **C622-19**

(First Edition)

AWWA Standard

Pipe Bursting of Potable Water Mains 4 In. (100 mm) to 36 In. (900 mm)

Effective date: March 1, 2020.
This first edition approved by Board of Directors Oct. 28, 2019.
Approved by American National Standards Institute Sept. 16, 2019.

American Water Works Association

Approved American National Standard ANSI

STANDARD Since 1881

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 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 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 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 e-mailing info@ansi.org.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including scanning, recording, or any information or retrieval system. Reproduction and commercial use of this material is prohibited, except with written permission from the publisher. Please send any requests or questions to permissions@awwa.org.

ISBN-13, print: 978-1-62576-370-9

eISBN-13, electronic: 978-1-61300-538-5

DOI: http://dx.doi.org/10.12999/AWWA.C622.19

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including scanning, recording, or any information or retrieval system. Reproduction and commercial use of this material is prohibited, except with written permission from the publisher.

Copyright © 2020 by American Water Works Association
Printed in USA

Copyright © 2020 American Water Works Association. All Rights Reserved

Committee Personnel

The AWWA Subcommittee for the development of AWWA C622, Pipe Bursting of Water Mains 4 In. (100 mm) to 36 In. (900 mm), had the following personnel at the time:

Jon Turner, *Chair*

E.A. Ambler, AM Trenchless, Sanford, Fla.
L.J. Assard, Michels Corporation, Watertown, Conn.
B. Botteicher, Underground Solutions, Inc., Encinitas, Calif.
P. Creelman, Royal Building Products, Langley, British Columbia
D. Ellison, HDR, Inc., Ventura, Calif.
J. Glynn, Woodard and Curran, Walnut Creek, Calif.
J.E. Hohider, Michels Corporation, Watertown, Conn.
C. Macey, AECOM, Winnipeg, Manitoba
G.C. Mallakis, TT Technologies Inc., Simi Valley, Calif.
T. Marti, Underground Solutions, Warrendale, Pa.
J.C. Matthews, TTC Louisiana Tech University, Ruston, La.
M. Najafi, University of Texas at Arlington/CUIRE, Arlington, Tex.
B.A. Neu, Mott MacDonald, Jacksonville, Fla.
C.K. Orton, Trenchless Solutions, Redwood City, Calif.
M.E. Queen, Consolidated Mutual Water, Lakewood, Colo.
C.G. Rubeiz, PPI, Fairfax, Va.
D.J. Smith, WaterOne, Lenexa, Kans.
A.D. Tehrani, University of Texas at Arlington/CUIRE, Frisco, Tex.
J. Turner, Phoenix Civil Engineering Inc., Santa Paula, Calif.

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

Dr. Mohammad Najafi, *Chair*

General Interest Members

A. Alavinasab, Pure Engineering Services Inc., Branchburg, N.J.
S. Barraco, Carollo Engineers, Dallas, Tex.
R. Cooper, Evanco Environmental Technologies, Bracebridge, Ontario
D. Ellison, HDR, Inc., Ventura, Calif.

Copyright © 2020 American Water Works Association. All Rights Reserved

P. Glus, Arcadis, Long Island City, N.Y.
J. Glynn, Woodard and Curran, Walnut Creek, Calif.
J.W. Green (*liaison, nonvoting*), Standards Council Liaison, Lockwood, Andrews & Newnam, Oakbrook Terrace, Ill.
C. Macey, AECOM, Winnipeg, Manitoba
J.C. Matthews, TTC at Louisiana Tech University, Ruston, La.
E. Meek (*liaison, nonvoting*), Standards Engineer Liaison, AWWA, Denver, Colo.
M. Najafi, University of Texas at Arlington/CUIRE, Arlington, Tex.
B.A. Neu, Mott MacDonald, Jacksonville, Fla.
L.E. Osborn, LEO Consulting, LLC, Dardenne Prairie, Mo.
J. Turner, Phoenix Civil Engineering, Inc., Santa Paula, Calif.
T.R. Volz (*alternate, nonvoting*), AECOM, Greenwood Village, Colo.
J.S. Wailes, Black Hawk, Colo.

Producer Members

L.J. Assard, Michels Corporation, Watertown, Conn.
G.J. Bontus, AEGION Corporation, Edmonton, Alberta
D. Cohen, Western Slope Utilities, Breckenridge, Colo.
P. Creelman, Royal Pipe Building Products, Langley, British Columbia
M. Davison, Sanexen Environmental Services, Inc., Brossard, Quebec
D.P. Kozman, Hammerhead Trenchless Equipment, Hilliard, Ohio
K. Oxner, Inliner Technologies LLC, Paoli, Ind.
F. Sever, QuakeWrap, Inc., Tucson, Ariz.
W.E. Shook, Fort Meyers, Fla.
K. Weisenberg, SIPP Technologies, Jacksonville, Fla.

User Members

W.A. Fritz, Great Lakes Water Authority, Detroit, Mich.
N. Gan, Regional Municipality of Peel, Brampton, Ontario
M.E. Grahek, Los Angeles Department of Water, Los Angeles, Calif.
T.M. Kennedy, Rainbow Municipal Water District, Fallbrook, Calif.
D.F. Lesnieski, Connecticut Water Company, East Windsor, Conn.
R. McKaskle, City of Tulsa, Tulsa, Okla.
C. Venkatesh, American Water, Camden, N.J.
T.L. White, City of Vista/Buena Sanitation District, Vista, Calif.

Copyright © 2020 American Water Works Association. All Rights Reserved

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	ix
I.C	Acceptance	ix
II	Special Issues	x
II.A	Chlorine and Chloramine Degradation of Elastomers	x
II.B	Advisory Information on Material Application	x
II.C	Constructor Experience	xi
II.D	Distributing Information to Customers	xi
II.E	Handling Asbestos Cement Pipe	xi
II.F	Pipe Bursting of Asbestos Cement (AC) Pipe	xi
III	Use of This Standard	xi
III.A	Purchaser Options and Alternatives	xi
III.B	Modification to Standard	xii
IV	Major Revisions	xii
V	Comments	xii

SEC.		PAGE
Standard		
1	**General**	
1.1	Scope	1
1.2	Purpose	1
1.3	Application	1
2	**References**	2
3	**Definitions**	3
4	**Requirements**	
4.1	Permeation	4
4.2	Materials and Workmanship	5
4.3	Design Considerations	6
4.4	Field Considerations	8
4.5	Pipe Bursting Process	9
4.6	Repair of Replacement Pipe	10
4.7	Return to Service	10
5	**Verification**	
5.1	Pressure Testing	10
5.2	Gouging Verification	10
5.3	Basis for Rejection	11
6	**Delivery**	
6.1	Affidavit of Compliance	11

Copyright © 2020 American Water Works Association. All Rights Reserved