ANSI/AWWA C232-22

(Revision of ANSI/AWWA C232-22)

AWWA Standard

Viscoelastic Coatings for Steel Water Pipe and Fittings

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American Water Works Association

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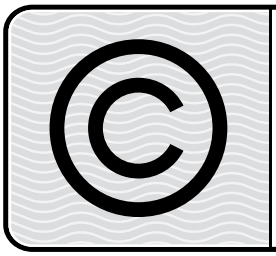
AWWA Standard

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA C232.*

I. Introduction.

I.A. *Background*. This AWWA standard describes the minimum material and application requirements for denoted hereafter viscoelastic coating systems to be field applied or plant applied to the exterior of steel water pipe, field joints, special sections, connection, and fittings for purposes of underground corrosion prevention. Viscoelastic coatings can be applied without the use of special equipment and over a broad application temperature range.

I.B. *History.* The first edition of this standard, designated ANSI/AWWA C232, Standard for Viscoelastic Coatings for Steel Water Pipe and Fittings, was approved by the Board of Directors on Oct. 24, 2022.

II. Special Issues.

II.A. *Advisory Information on Product Application*. Currently, viscoelastic coatings generally are used on pipe that has been coated before transportation to the field site.

Where allowed by the purchaser, coatings described in ANSI/AWWA C232 can be used in conjunction with pipe coatings described in:

ANSI/AWWA C203, Coal-Tar Protective Coatings and Linings for Steel Water Pipe.

ANSI/AWWA C205, Cement-Mortar Protective Lining and Coating for Steel Water Pipe 4 In. (100 mm) and Larger—Shop Applied.

ANSI/AWWA C209, Tape Coatings for Steel Water Pipe and Fittings.

ANSI/AWWA C210, Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings.

ANSI/AWWA C213, Fusion-Bonded Epoxy Coatings and Linings for Steel Water Pipe and Fittings.

ANSI/AWWA C214, Machine-Applied Polyolefin Tape Coatings for Steel Water Pipe.

ANSI/AWWA C215, Extruded Polyolefin Coatings for Steel Water Pipe.

ANSI/AWWA C216, Heat-Shrinkable Cross-Linked Polyolefin Coatings for Steel Water Pipe and Fittings.

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ANSI/AWWA C222, Polyurethane Coatings and Linings for Steel Water Pipe and Fittings.

ANSI/AWWA C224, Nylon-11–Based Polyamide Coatings and Linings for Steel Water Pipe and Fittings.

ANSI/AWWA C225, Fused Polyolefin Coatings for Steel Water Pipe.

ANSI/AWWA C229, Fusion-Bonded Polyethylene Coatings for Steel Water Pipe and Fittings.

ANSI/AWWA C232 is intended for use as the exterior coating of steel water pipelines for underground or underwater installation under normal conditions. This standard is based on the best-known experience but is not intended for unqualified use under all conditions, and the advisability of its use for any installation must be reviewed by the purchaser.

When viscoelastic coating systems are used for repair or rehabilitation, or used in conjunction with other coatings, the manufacturer of the viscoelastic coatings should be consulted to establish the degree of compatibility of the viscoelastic coating with the coating system involved. If an extended period of aboveground storage of coated pipe is anticipated, the ability of the coating to resist degradation by ultraviolet light and other atmospheric and environmental conditions should be considered.

II.B. *Mechanical Protection*. When construction or soil conditions exist in which mechanical damage to the coating is likely to occur, the use of an additional suitable outer wrap and reinforcements or special backfills may be required. This will depend on the conditions encountered, but in general, an additional suitable overwrap or other wrapping should be used. Under these conditions, the coating manufacturer should be consulted for specific recommendations.

II.C. *Pipe Storage*. Pipes should be stored at ambient temperatures of 0–120°F (-18–49°C) for no more than 90 days. If storage conditions outside this range are expected, the coating manufacturer shall be consulted to determine if additional protective layers or other considerations are necessary.

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 specified by the purchaser:

1. Standard used—that is, ANSI/AWWA C232, Viscoelastic Coatings for Steel Water Pipe and Fittings.
2. Any exceptions to the standard that may be required.

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3. Diameter.

4. Location of coating application with reference to environmental considerations, length, and location of pipeline.

5. Operating temperature range (Sec. 1.1.1).

6. Descriptions of difficult conditions or aboveground exposure (Sec. 1.1.2).

7. Outdoor storage (Sec. 1.1.2).

8. Inner-layer thickness (Sec. 4.3.1).

9. Type of outer wrap if required (Sec. 4.3.1).

10. Type of viscoelastic coating (Sec. 4.3.1).

11. Coating repair (Sec. 4.7).

12. Coating materials prequalification (Sec. 5.1).

13. Quality assurance and records (Sec. 5.3).

14. Inspection and testing (Sec. 5.4 and Sec. 5.5).

15. Facilities for inspection (Sec. 5.4.3).

16. Acceptance testing (Sec. 5.5).

17. Nonconforming pipe (Sec. 5.5).

18. Holiday detector use (Sec. 5.5.2).

19. Adhesion requirement and test frequency (Sec. 5.5.3).

20. Delivery (Section 6).

21. Packaging (Sec. 6.2.1).

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

NOTE: The specific application procedure used for each type of coating system is as described by the coating manufacturer.

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

IV. Major Revisions.

This is a new standard.

V. Comments. If you have any comments or questions about this standard, please call AWWA Engineering and Technical Services at 303.794.7711, FAX at 303.795.7603, write to the department at 6666 West Quincy Avenue, Denver, CO 80235-3098, or email at standards@awwa.org.

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ANSI/AWWA C232-22
(First Edition)

American Water Works Association
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AWWA Standard

Viscoelastic Coatings for Steel Water Pipe and Fittings

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes the materials and application of viscoelastic coating systems to the exterior of steel water pipe and fittings to be used for underground and underwater service. For the purposes of this standard, the coating system has a viscoelastic compound as a corrosion-prevention layer that shall be based on either polyisobutene (PIB) or amorphous polyalphaolefin (APAO). Viscoelastic coatings systems conforming to this standard may be field-applied to repair or rehabilitate pipe and fittings, shop-applied to fittings, or used as a joint coating for pipe and fittings protected with organic coatings, such as those described in ANSI/AWWA C203, ANSI/AWWA C205, ANSI/AWWA C209, ANSI/AWWA C210, ANSI/AWWA C213, ANSI/AWWA C214, ANSI/AWWA C215, ANSI/AWWA C216, ANSI/AWWA C222, ANSI/AWWA C224, ANSI/AWWA C225, and ANSI/AWWA C229.

For normal construction considerations, viscoelastic coating systems are either applied as a two-layer system consisting of (1) a corrosion-prevention inner layer, and (2) a mechanical outer layer; or applied as a one-layer system where the corrosion-prevention inner layer and the mechanical outer layer are bonded together and applied as a single layer.

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