

NORTH MARIN WATER DISTRICT

STANDARD SPECIFICATIONS

SECTION 15100 RESILIENT WEDGE GATE VALVES (RWGV's)

PART 1 GENERAL

1.01 DESCRIPTION

This section includes materials, testing, and installation of manually operated resilient wedge gate valves (RWGV's).

1.02 REFERENCE STANDARDS

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

AWWA C210	-	Liquid Epoxy Coating Systems for the interior and exterior of steel water pipelines
AWWA C213	-	Fusion Bonded Epoxy Coating for the interior and exterior of steel water pipelines
AWWA C509	-	Resilient Seated Gate Valves for water supply service
AWWA C515	-	Reduced Wall, Resilient Wedge Gate Valves for water supply service
AWWA C550	-	Protective Epoxy Interior Coatings for valves and hydrants
SSPC	-	Steel Structure Painting Council

1.03 RELATED WORK SPECIFIED ELSEWHERE

NMWD Standard Drawings
NMWD Standard Specifications 02223, 03000, 09910, 15000, 15041, 15044, 15056, 15057, 15061, 15064, 15074, 15108, 15112, and 15300

1.04 SERVICE APPLICATION

- A. Resilient wedge gate valves (RWGV's) shall be installed on potable and recycled water mains and appurtenances in accordance with the Approved Plans and the Standard Drawings.
- B. Resilient wedge gate valves shall be used for open/closed operations, throttling service and frequent operation after long periods of inactivity.
- C. In general, resilient wedge gate valves shall be used when valves are required on pipelines and appurtenances four (4) inch through twelve (12) inch.
- D. Valves for pipelines sized larger than twelve (12) inches generally require the use of butterfly valves (BFV) in accordance with Section 15102.

1.05 SUBMITTALS

The following items shall be submitted for review and approval by the District Engineer prior to ordering or delivery of resilient wedge gate valves:

- A. An affidavit from the valve manufacture stating that valves have successfully passed hydrostatic tests in accordance with AWWA C509 and manufacturer's own coatings tests.
- B. The valve manufacturer's catalog data showing the size to be used, valve dimensions, pressure rating and materials of construction.
- C. Manufacturer's catalog data and proof of NSF certification for the lining materials to be used.

1.06 SIZING OF VALVES

Valves shall be the same size as the line in which they are installed unless otherwise noted on the Approved Plans.

1.07 VALVE ENDS

Valve ends shall be compatible with the piping system in which they are being installed in accordance with the Approved Plans or directed by the District Engineer.

Ductile-iron flanges shall be in accordance with Section 15056.

1.08 VALVE TESTING

Resilient wedge gate valves shall be hydrostatically tested and valve coatings shall be holiday detected prior to shipment to the field in accordance with the testing procedures shown in Appendix A. Valves delivered to the site prior to successful hydrostatic testing and holiday detection shall be subject to rejection.

1.09 DELIVERY, STORAGE AND HANDLING

Valves shall be delivered and stored in accordance with AWWA C550. The port openings shall be covered with plastic, cardboard or wood while in transit and during storage in the field. These covers shall remain in place until valves are ready to be installed. Valves shall not be stored in contact with bare ground. Valves shall not be stacked.

1.10 RECYCLED WATER IDENTIFICATION

Resilient Wedge Gate Valves used for recycled water shall be identified with purple-colored coating, identification labels or signs in accordance with Section 15151.

1.11 POLYETHYLENE WRAP (NOT USED)

PART 2 MATERIALS

2.01 RESILIENT WEDGE GATE VALVES (RWGV's)

- A. Resilient wedge gate valves and appurtenant components and materials shall be selected from the Approved Materials List.
- B. RWGV's shall be ductile-iron in accordance with AWWA C509 and C515 except as modified herein.
- C. Each valve shall have a smooth unobstructed waterway free from any sediment pockets.
- D. All RWGV's shall be leak-tight at their rated pressure.
- E. RWGV's shall have a non-rising low-zinc bronze or stainless steel stem, opened by turning left (counterclockwise).
- F. Stem seals shall be the O-ring type incorporating a minimum of two rings as required by AWWA C509.
- G. Low-friction torque-reduction thrust washers or bearings shall be provided on the stem collar.
- H. Wedge (gate) shall be fully encapsulated with a bonded-in-place Nitrile elastomer covering. Minimum thickness of the rubber seating area shall be one quarter (¼) inch.
- I. Valves for buried applications shall be provided with a two (2) inch square operating nut, and valves located above ground or in structures shall be equipped with a hand wheel in accordance with AWWA C509 unless otherwise indicated on the Approved Plans.
- J. RWGV interior and exterior surfaces (except for the encapsulated disc) shall be coated as described below.
- K. All bolts and nuts used in the construction of RWGV's shall be Type 316 stainless steel.

2.02 EPOXY LINING AND COATING

Epoxy linings and coatings for valves shall be provided in accordance with AWWA C210, C213 and C550, with the following modifications:

- A. Epoxy lining and coating of valve surfaces shall be performed by the manufacturer in a facility with qualified personnel, where the environment can be controlled. Epoxy lining and coating of valves in the field is prohibited.
- B. Repairs made to manufactures applied coatings shall be performed in a facility with qualified personnel, where the environment can be controlled. The facility shall be approved by the valve manufacturer.
- C. Surface preparation shall be as detailed in SSPC-SP5, White-Metal Blast Cleaning.
- D. Liquid epoxy lining and coating materials shall be listed in the NSF Listing for Drinking Water Additives, Standard 61, certified for use in contact with potable water.

- E. The minimum dry film thickness for epoxy linings shall be 0.008 inches (or 8 mils). Liquid epoxy lining shall be applied in two (2) coats in accordance AWWA C210.
- F. Powder epoxy coating materials shall contain one hundred percent (100%) solids, in accordance with AWWA C213.

2.03 VALVE RISERS AND EXTENSION STEMS

Valve risers and extension stems for buried valves shall be in accordance with Section 15000 and selected from the Approved Materials List.

2.04 CONCRETE

Concrete used for anchor or thrust blocks shall be in accordance with Section 03000.

2.05 POLYETHYLENE WRAP (NOT USED)

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install valves with the bolt holes straddling the vertical centerline of pipe and the operating nut in the vertical position unless otherwise noted on the Approved Plans.
- B. Valves shall be installed in accordance with the manufacturer's recommendations and the applicable section of these specifications for the piping material and joint type being used.
- C. Joints shall be cleaned and installed in accordance with Section 15056.

3.02 POLYETHYLENE WRAP (NOT USED)

3.03 CONCRETE

Concrete thrust, anchor, and support blocks shall be installed in accordance with Section 03000 and the Standard Drawings. The concrete shall be placed so that valves and valve operators will be accessible for repairs or replacement. Prior to filling the pipeline with water, refer to Section 03000 for the minimum concrete curing time required.

3.04 VALVE RISERS AND EXTENSION STEMS

Valve risers and extension stems for buried valves shall be installed in accordance with Section 15000 and the Standard Drawings.

3.05 DISINFECTION OF VALVES

Disinfection and flushing of valves shall be in accordance with Section 15041, as part of the process of disinfecting the main pipeline. The valves shall be operated during the disinfection period to completely disinfect all internal parts.

3.06 HYDROSTATIC TESTING

Valves shall be hydrostatically tested in conjunction with the pipeline in which they are installed in accordance with Section 15044.

3.07 FIELD PAINTING AND COATING

The exterior of valves installed above ground or exposed in vaults or enclosures shall be field painted in accordance with Section 09910.

END OF SECTION