SECTION 05120 - GATE VALVES

PART 1 - GENERAL

1.1 WORK INCLUDED IN THIS SECTION

A. The WORK of this Section includes materials and installation of epoxy coated gate valves. Refer to Section 05100 for additional general requirements.

1.2 REFERENCE SPECIFICATIONS

A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section.

1.	AWWA	C213	Fusion Bonded Epoxy Coatings and Linings
2.	AWWA	C509	Resilient-Seated Gate Valves for Water Supply Service
3.	AWWA	C515	Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service
4.	AWWA	C550	Protective Interior Coatings for Valves and Hydrants

1.3 SERVICE APPLICATION

A. Resilient-seated or reduced-wall, resilient-seated (resilient-wedge) gate valves shall be used to isolate and depressure pipeline segments for repairs, modifications, inpsections, and/or maintenance.

B. The DISTRICT requires the use of gate valves for all distribution and transmission pipe sizes. The DISTRICT, at its sole discretion, may allow the use of butterfly valves in certain operating conditions and only for 16-inch and larger transmission mains.

1.4 SUBMITTALS

A. Gate valves 12 inches and smaller shall be selected from the Approved Materials List and include the testing certifications listed in Section 05100.

B. Gate valves 14 inches and larger require full submittals in compliance with Section 05100.

1.5 MANUFACTURER TESTING AND FIELD INSPECTION

A. Gate valves shall be tested and inspected in compliance with AWWA C509 or AWWA C515, and Section 05100.

PART 2 - PRODUCTS

2.1 GENERAL

A. Gate valves shall be resilient-seated or reduced-wall, resilient-seated (resilient-wedge) type in accordance with the requirements of AWWA C509 or AWWA C515 in all respects, except as may be specifically modified herein. Both workmanship and material shall be of the very best quality and shall be entirely suitable for the service conditions specified. Valves shall be of the size and class indicated.

B. Valves 14-inch and larger installed in horizontal pipes with horizontal stems shall be fitted with bronze slides, tracks, rollers, and scrapers to assist the travel of the gate assembly.

C. Quick opening valves shall have quick opening levers and cams in lieu of handwheel operators.

D. See Section 05100-2.1 for additional general requirements.

2.2 RESILIENT SEATED AND REDUCED-WALL, RESILIENT SEATED (RESILIENT WEDGE) GATE VALVES (3 INCH AND LARGER)

A. MATERIALS

1. Valves shall be ductile-iron in conformance with AWWA C509 or AWWA C515 except as modified herein.

2. Valves shall have a non-rising stem (NRS), opening by turning counter clockwise and provided with a 2-inch square operating nut with arrow cast in metal to indicate direction of opening, ductile-iron bodies with flanged, bell, or mechanical joint ends, flanged bonnet, low-zinc bronze or stainless steel stem, O-ring seals.

3. All bolts and nuts shall be Type 316 stainless steel, and stem nuts shall be independent of the wedge.

4. Wedge (gate) shall be fully encapsulated with a bonded-in-place ethylene propylene diene monomer (EPDM) elastomeric covering. Minimum thickness of the rubber seating area shall be ¼".

5. Each valve shall have a smooth unobstructed waterway free from any sediment pockets.

6. Stuffing boxes shall be O-ring seal type with two rings located in the stem with at least one seal located above the thrust collar. A low friction torque reduction thrust bearing shall be provided in the stuffing box.

2.3 GATE VALVES (SMALLER THAN 3 INCH)

A. Gate valves, smaller than 3 inches, shall be heavy duty type for industrial service, with threaded or soldered ends.

B. The bodies shall have threaded tops or union bonnets, fabricated of bronze conforming to ASTM B62, with bronze stems, solid edges, metal handwheels, and Teflon impregnated packing.

C. Buried valves shall have non-rising stems.

D. Exposed valves (above ground) shall have rising stems, where applicable.

E. Valves shall have a minimum pressure rating of 125 psi, steam, or 200 psi coldwater except as otherwise indicated.

2.4 VALVE APPURTENANCES AND OTHER REQUIREMENTS

A. See Section 05100-2 for requirements on extension stems, valve wells, protective lining and coating, valve identification, storage and handling, concrete support blocks, and polyethylene sheet encasement.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Gate valves shall be installed in accordance with Section 05100.

END OF SECTION