SECTION 400562 - PLUG VALVES

Note that this section has only been edited for NYSOGS standardization and has not been technically edited. The designer shall make all technical edits specific to the project for this section.

This Section specifies plug valves for use in water and wastewater treatment plants.

Refer to Section 400551 for common work results for process valves, and to Section 220523 for general purpose valves for plumbing piping.

In the water and wastewater treatment industry, valving is typically specified by valve type. Valves may be detailed via a valve schedule, which describes valve type and characteristics required for that system. A sample valve schedule is provided in Section 400551.

When selecting valve materials for corrosive fluids, consult with valve manufacturer and select materials based on specific application.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes: Eccentric plug valves.
          2. Related Requirements:

List other Sections directly related to or affecting Work of this Section. Include Sections specifying information expected to be found in this Section as well as Sections required to describe complete system or assembly requirements.

Section 220523 - General-Duty Valves for Plumbing Piping: Miscellaneous plumbing valves as required by Project.

Section 400551 - Common Requirements for Process Valves: Basic materials and methods related to valves commonly used for process systems.

* + - 1. REFERENCE STANDARDS

List reference standards included within text of this Section, with designations, numbers, and complete document titles.

* + - * 1. American Water Works Association:

AWWA C517 - Resilient-Seated Cast-Iron Eccentric Plug Valves.

* + - * 1. ASME International:

ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.

ASME B16.5 - Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard.

ASME B16.42 - Ductile Iron Pipe Flanges and Flanged Fittings: Classes 150 and 300.

ASME B1.20.1 - Pipe Threads, General Purpose, Inch.

* + - * 1. ASTM International:

ASTM A536 - Standard Specification for Ductile Iron Castings.

ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings.

Coordinate remainder of PART 1 requirements with Section 400551. Reference Section 400551 only, or include items not covered in Section 400551.

* + - 1. <**\_\_\_\_\_\_\_\_**>
         1. Section <**\_\_\_\_\_\_-\_\_\_\_\_\_\_\_\_\_\_\_**>: <**\_\_\_\_\_\_\_\_**>.
         2. As specified in Section 400551 - Common Requirements for Process Valves: Submittal requirements for compliance with this Section.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. <**\_\_\_\_\_\_\_\_**>.

1. PRODUCTS

Plug valves are often used for non-throttling OPEN-CLOSE operation, particularly where frequent valve operation was necessary. With the development of a diamond-shaped port, however, plug valves are now commonly used for throttling service.

Plug valves are generally recommended for following service conditions:

- Fully open, fully closed, throttling (with diamond-shaped port).

- Minimum resistance to flow.

- Minimum amount of fluid trapped in line.

- Frequent operation.

- Low-pressure drop.

- Flow diversion.

* + - 1. ECCENTRIC PLUG VALVES
         1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=9571&mf=04&src=wd):

designer to provide two manufacturers and approved equivalent for all listed products.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

In following Subparagraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

Furnish materials according to <**\_\_\_\_\_\_\_\_**> standards.

Insert descriptive specifications below to identify Project requirements and to eliminate conflicts with products specified above.

* + - * 1. Description:

As specified in Section 400551 - Common Requirements for Process Valves.

Type:

Non-lubricated.

Eccentric.

[**Minimum**] Working Pressure: [**<\_\_\_\_\_\_\_\_> psig at <\_\_\_\_\_\_\_\_> deg. F**] [**As indicated on valve schedule**].

Maximum Process Fluid Temperature: [**<\_\_\_\_\_\_\_\_> deg. F**] [**As indicated on valve schedule**].

Ports:

Configuration: [**Round**] [**Rectangular**].

Minimum Port Area: [**80**] <**\_\_\_\_\_\_\_\_**> percent of nominal pipe area for valves [**20 inches]** [**<\_\_\_\_\_\_\_\_> inches**] and smaller; [**70**] <**\_\_\_\_\_\_\_\_**> percent for valves larger than 20 inches.

Stem Bearings: Self-lubricating.

Stem Seals:

Type: V-ring.

Material: Neoprene.

Packing and Gland: Accessible and externally adjustable.

End Connections:

Threaded: Comply with ASTM B1.20.1

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

Flanged: Comply with ASME [**B16.1**] [**B16.5**] [**B16.42**].

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

Grooved.

* + - * 1. Operation:

As specified in Section 400551 - Common Requirements for Process Valves.

[**3**] <**\_\_\_\_\_\_\_\_**> Inches and Smaller: [**Manual**] [**Pneumatically actuated**] [**Electrically actuated**] lever.

Greater Than [**3**] <**\_\_\_\_\_\_\_\_**> Inches: Wormgear manual operators with handwheel.

Furnish gear operators for valves [**8**] <**\_\_\_\_\_\_\_\_**> inches and larger, and chainwheel operators for valves mounted over [**8**] <**\_\_\_\_\_\_\_\_**> feet above [**operating**] floor.

* + - * 1. Materials:

Body:

[**Cast iron, AWWA C517**] [**Ductile iron, ASTM A536**] [**Bronze, ASTM B62**] [**Carbon steel**] <**\_\_\_\_\_\_\_\_**>.

Lining: [**Epoxy, as specified in Section <\_\_\_\_\_\_-\_\_\_\_\_\_\_\_\_\_\_\_>**] [**Elastomer, as recommended by valve manufacturer for service conditions**] <**\_\_\_\_\_\_\_\_**>.

Plug:

[**Cast iron, AWWA C517**] [**Ductile iron, ASTM A536**] <**\_\_\_\_\_\_\_\_**>.

Lining: [**Neoprene**] [**Resilient coating, as recommended by valve manufacturer for service conditions**].

Seats: [**Nickel**] [**Nickel steel**] [**Stainless steel**] <**\_\_\_\_\_\_\_\_**>.

Stem: [**Type 316 stainless steel**] <**\_\_\_\_\_\_\_\_**>.

Stem Bearings: [**Stainless steel**] <**\_\_\_\_\_\_\_\_**>.

Seals: [**PTFE**] <**\_\_\_\_\_\_\_\_**>.

Connecting Hardware: [**Type 316**] stainless steel.

* + - * 1. Finishes: As specified in Section 400551 - Common Requirements for Process Valves.
      1. SOURCE QUALITY CONTROL
         1. As specified in Section 400551 - Common Requirements for Process Valves.
         2. Testing: Test gate valves according to AWWA C509.

1. EXECUTION

Coordinate remainder of PART 3 requirements with Section 400551. Reference Section 400551 only, or include items not covered in Section 400551.

* + - 1. <**\_\_\_\_\_\_\_\_**>
         1. Section <**\_\_\_\_\_\_-\_\_\_\_\_\_\_\_\_\_\_\_**>: <**\_\_\_\_\_\_\_\_**>.
         2. As specified in Section 400551 - Common Requirements for Process Valves: Submittal requirements for compliance with this Section.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. <**\_\_\_\_\_\_\_\_**>.
      1. INSTALLATION
         1. According to AWWA C517.
         2. Horizontal Piping: Stem horizontal.
         3. Vertical Piping: Plug at top when closed.
         4. Plugs: On top when open and on pressure side when closed.

END OF SECTION 400562