SECTION 400565.11 - ANGLE 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 angle valves for throttling service in water and wastewater treatment plants.

Angle valves operate similar to globe valves but provide a 90-degree turn in flow, which eliminates an elbow and extra fittings.

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 valve manufacturer and select materials based on specific application.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes: Angle 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 400551 - Common Requirements for Process Valves: Administrative requirements and 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. ASME International:

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

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 B16.11 - Forged Fittings, Socket-Welding and Threaded.

ASME B16.34 - Valves - Flanged, Threaded, and Welding End.

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

* + - * 1. Fluid Controls Institute:

FCI 70-2: Control Valve Seat Leakage.

* + - * 1. Manufacturers Standardization Society:

MSS SP-25 - Standard Marking System for Valves, Fittings, Flanges, and Unions.

* + - * 1. NSF International:

NSF 61 - Drinking Water System Components - Health Effects.

NSF 372 - Drinking Water System Components - Lead Content.

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

* + - 1. COORDINATION
         1. Coordinate Work of this Section with piping and equipment connections as specified in other Sections [**and as indicated on Drawings**].
      2. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
        2. Manufacturer’s installation instructions shall be provided along with product data.
        3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
        4. Product Data: Submit manufacturer catalog information, indicating materials of construction and compliance with indicated standards.
        5. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

Include separate Paragraphs for additional certifications.

* + - * 1. Source Quality-Control Submittals: Indicate results of [**shop**] [**factory**] tests and inspections.
        2. Qualifications Statement:

Coordinate following Subparagraph with requirements specified in QUALIFICATIONS Article.

Submit qualifications for manufacturer.

* + - 1. CLOSEOUT SUBMITTALS
         1. Project Record Documents: Record actual locations of piping, valves and other appurtenances, connections, and [**invert**] [**centerline**] elevations.
      2. QUALITY ASSURANCE

Include this Article to specify compliance with overall reference standards affecting products and installation included in this Section.

* + - * 1. Materials in Contact with Potable Water: Certified according to NSF 61 and NSF 372.

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

* + - * 1. Perform Work according to <**\_\_\_\_\_\_\_\_**> standards.

Include following Paragraph only when cost of acquiring specified standards is justified.

* + - * 1. Maintain <**\_\_\_\_\_\_\_\_**> [**copy**] [**copies**] of each standard affecting Work of this Section on Site.
      1. QUALIFICATIONS

Coordinate following Paragraph with requirements specified in SUBMITTALS Article.

* + - * 1. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum [**three**] <**\_\_\_\_\_\_\_\_**> years' [**documented**] experience.
      1. DELIVERY, STORAGE, AND HANDLING
         1. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
         2. Store materials according to manufacturer instructions.
         3. Protection:

Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.

Protect valves and appurtenances by storing off ground.

Provide additional protection according to manufacturer instructions.

* + - 1. EXISTING CONDITIONS
         1. Field Measurements:

Verify field measurements prior to fabrication.

Indicate field measurements on Shop Drawings.

* + - 1. WARRANTY

This Article extends warranty period beyond one year. Extended warranties may increase construction costs and Owner enforcement responsibilities. Specify warranties with caution.

* + - * 1. Furnish [**five**] <**\_\_\_\_\_\_\_\_**>-year manufacturer's warranty for angle valves.

1. PRODUCTS
   * + 1. ANGLE VALVES
          1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=12820&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:

[**Minimum**] Working Pressure: [**Class 600**] [**PN <\_\_\_\_\_\_\_\_>**] [**<\_\_\_\_\_\_\_\_> psig**] [**As indicated in valve schedule**].

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

Size: [**<\_\_\_\_\_\_\_\_> inches**] [**As indicated in valve schedule**] [**As indicated on Drawings**].

Comply with MSS SP-25.

End Connections:

Flanged: ASME [**B16.1**] [**, B16.5**] [**, B16.34**] [**, and**] [**B16.42**].

Threaded: ASME B16.11, ASME B1.20.1 .

Trim Type:

[**Balanced**] [**Unbalanced**].

Number of Stages: [**As required by service conditions**] <**\_\_\_\_\_\_\_\_**>.

Shutoff Leakage:

Class IV.

Comply with FCI 70-2.

Flow Characteristics: [**Modified**] [**Linear**] [**Equal percentage**].

Operation: [**Spring diaphragm**] [**Piston**] [**Electric motor**] [**Pneumatic**] [**Hydraulic**] actuator.

* + - * 1. Performance and Design Criteria:

Process Fluid: <**\_\_\_\_\_\_\_\_**>.

Maximum Flow Rate: <**\_\_\_\_\_\_\_\_**> gpm.

Operating Temperature: <**\_\_\_\_\_\_\_\_**> to <**\_\_\_\_\_\_\_\_**> deg. F t.

Operating Pressure:

Maximum Upstream: <**\_\_\_\_\_\_\_\_**> psig

Minimum Downstream: <**\_\_\_\_\_\_\_\_**> psig

* + - * 1. Materials:

Body: [**Carbon steel**] [**Stainless steel**] <**\_\_\_\_\_\_\_\_**>.

Trim: [**Stainless steel**] <**\_\_\_\_\_\_\_\_**>.

Seal: [**PTFE**] [**Graphite**] <**\_\_\_\_\_\_\_\_**>.

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

* + - 1. SOURCE QUALITY CONTROL
         1. Provide shop inspection and testing of completed assembly.

1. EXECUTION
   * + 1. EXAMINATION
          1. Verify that field dimensions are as indicated on [**Shop**] Drawings.
          2. Inspect existing flanges for nonstandard bolt-hole configurations or design and verify that new valve and flange mate properly.
       2. PREPARATION
          1. Thoroughly clean valves before installation.
          2. Surface Preparation: Clean surfaces to remove loose rust, mill scale, and other foreign substances.
       3. INSTALLATION
          1. According to manufacturer instructions.

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

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

* + - * 1. Installation Standards: Install Work according to <**\_\_\_\_\_\_\_\_**> standards.
        2. Dielectric Fittings: Provide between dissimilar metals.
      1. FIELD QUALITY CONTROL
         1. Inspection:

Inspect for damage to valve lining or coating and for other defects that may be detrimental as determined by Director’s Representative.

Repair damaged valve or provide new, undamaged valve.

After installation, inspect for proper supports and interferences.

* + - * 1. Pressure Testing: As indicated in piping schedule.

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

* + - * 1. Pressure test valves with piping.
      1. CLEANING
         1. Keep valve interior clean as installation progresses.
         2. After installation, clean valve interior of soil, grit, loose mortar, and other debris.

END OF SECTION 400565.11