SECTION 400582 - SOLENOID VALVES FOR PROCESS SERVICE

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 solenoid valves for use in water- and wastewater-treatment plants for non-instrumentation applications.

For water- and wastewater-treatment projects, valving is typically defined by using a valve schedule, which describes valve types and characteristics as 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: Solenoid valves for process applications.
          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: 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. ASTM International:

ASTM B61 - Standard Specification for Steam or Valve Bronze Castings.

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

* + - * 1. National Electrical Manufacturers Association:

NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

* + - * 1. NSF International:

NSF 61 - Drinking Water System Components - Health Effects.

NSF 372 - Drinking Water System Components - Lead Content.

* + - 1. COORDINATION
         1. Coordinate Work of this Section with process piping Work.
      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 information, indicating materials of construction, wiring diagrams, and compliance with indicated standards.
        5. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

Include separate Paragraphs for additional certifications.

* + - * 1. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.
        2. Source Quality-Control Submittals: Indicate results of [**shop**] [**factory**] tests and inspections.
        3. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
        4. Qualifications Statement:

Coordinate following Subparagraph with requirements specified in QUALIFICATIONS Article.

Submit qualifications for manufacturer.

* + - 1. 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 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.

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 State enforcement responsibilities. Specify warranties with caution.

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

1. PRODUCTS
   * + 1. SOLENOID VALVES

A solenoid valve combines two functional units: an electromagnet or solenoid with its plunger or core and a valve. Valve is opened or closed by plunger being drawn into solenoid when coil is energized.

Solenoid valves are typically used for fully open and fully closed service.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=12536&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:

Type: As indicated [**on Drawings**] [**in valve schedule**].

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

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

Coil: Continuous duty.

Operation: [**Fail open, energize to close**] [**Fail close, energize to open**].

Enclosures: NEMA 250 Type <**\_\_\_\_\_\_\_\_**> rated according to area designation [**as indicated on Drawings**].

Electrical Characteristics: As indicated [**on Drawings**] [**in valve schedule**].

End Connections: [**Screwed**] <**\_\_\_\_\_\_\_\_**>.

Conduit Connection: [**Threaded**] <**\_\_\_\_\_\_\_\_**>.

* + - * 1. Materials:

Body: Brass.

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

Body: Bronze, ASTM [**B61**] [**B62**] <**\_\_\_\_\_\_\_\_**>.

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

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

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

Include one or both of following Paragraphs to require Director's inspection or witnessing of test at factory.

* + - * 1. Director’s Inspection:

Make completed solenoid valves available for inspection at manufacturer's factory prior to packaging for shipment.

Notify Director’s Representative at least [**seven**] <**\_\_\_\_\_\_\_\_**> days before inspection is allowed.

* + - * 1. Director’s Witnessing:

Allow witnessing of factory inspections and test at manufacturer's test facility.

Notify Director’s Representative at least [**seven**] <**\_\_\_\_\_\_\_\_**> days before inspections and tests are scheduled.

Include following Paragraph if reliance on manufacturer's approved quality-control program is sufficient for Project requirements.

* + - * 1. Certificate of Compliance:

If manufacturer is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at manufacturer's facility conforms to Contract Documents.

Specified shop tests are not required for Work performed by approved manufacturer.

1. EXECUTION
   * + 1. INSTALLATION
          1. As specified in Section 400551 - Common Requirements for Process Valves.
          2. Install protective strainers upstream of solenoid valves, pressure-reducing valves, and pressure-sustaining valves.
       2. FIELD QUALITY CONTROL
          1. As specified in Section 400551 - Common Requirements for Process Valves.

END OF SECTION 400582