SECTION 400567.39 - PRESSURE-RELIEF 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 pressure-relief valves in pressurized and gravity tanks for water and wastewater treatment facilities. Included in this Section are hydrostatic pressure-relief valves that are mounted on side wall or bottom of tanks to relieve excess ground water from around submerged structures, helping to prevent flotation of the structure.

Process piping systems and appurtenances are specified in Divisions 40 and 46.

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes:

Weight-loaded pressure-relief valves.

Spring-loaded pressure-relief valves.

Hydrostatic pressure-relief valves.

* + - * 1. 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.

* + - 1. REFERENCE STANDARDS

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

* + - * 1. American Petroleum Institute:

API 2000 - Venting Atmospheric and Low-pressure Storage Tanks.

* + - * 1. ASME International:

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

* + - * 1. ASTM International:

ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes.

ASTM B584 - Standard Specification for Copper Alloy Sand Castings for General Applications.

ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.

* + - * 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 installation of process tanks.
      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.

* + - * 1. Manufacturer’s installation instructions shall be provided along with product data.
        2. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
        3. Product Data: Submit manufacturer catalog information.
        4. Shop Drawings: Indicate materials, size, accessories [**, and**] <**\_\_\_\_\_\_\_\_**>.
        5. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

Include separate Paragraphs for additional certifications.

* + - * 1. Manufacturer Instructions: Submit special procedures and setting dimensions.
        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. CLOSEOUT SUBMITTALS
         1. Project Record Documents: Record actual locations of pressure-relief valves.
      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 to NSF Standards 61 and 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.

Furnish temporary end caps and closures on piping and fittings and maintain in place until installation.

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 pressure-relief valves.

1. PRODUCTS

Pressure-relief valves are typically used to protect a tank from physical damage or permanent deformation caused by increases in internal pressure.

* + - 1. PRESSURE-RELIEF VALVES, WEIGHT LOADED
         1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=12693&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:

Comply with API 2000.

Size: [**2**] [**6**] [**12**] <**\_\_\_\_\_\_\_\_**> inches

Configuration: Vent to [**atmosphere**] [**flanged outlet**].

Seat Rings: Replaceable and interchangeable.

Performance and Design Criteria:

Flow Capacity: <**\_\_\_\_\_\_\_\_**> scfh at <**\_\_\_\_\_\_\_\_**> psig pressure setting.

Maximum Leakage Rate: [**1**] <**\_\_\_\_\_\_\_\_**> scfh at 90 percent of set point.

Maximum Pressure Setting: [**2**] <**\_\_\_\_\_\_\_\_**> psig

Materials:

Body: [**Aluminum**] [**Carbon steel**] [**Type 316 stainless steel**] [**Ductile iron**] <**\_\_\_\_\_\_\_\_**>.

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

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

Weights: Lead.

End Connection: Flanged, ASME B16.5.

* + - 1. PRESSURE-RELIEF VALVES, SPRING LOADED
         1. Description:

Size: [**2**] [**6**] [**12**] <**\_\_\_\_\_\_\_\_**> inches

Configuration: Vent to [**atmosphere**] [**flanged outlet**].

Performance and Design Criteria:

Flow Capacity: <**\_\_\_\_\_\_\_\_**> scfh at <**\_\_\_\_\_\_\_\_**> psig pressure setting.

Maximum Leakage Rate: [**1**] <**\_\_\_\_\_\_\_\_**> scfh at 90 percent of set point.

Maximum Pressure Setting: [**50**] <**\_\_\_\_\_\_\_\_**> psig

Materials:

Body: [**Aluminum**] [**Carbon steel**] [**Type 316 stainless steel**] <**\_\_\_\_\_\_\_\_**>.

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

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

End Connection: Flanged, ASME B16.5.

* + - 1. PRESSURE-RELIEF VALVES, HYDROSTATIC

Hydrostatic pressure-relief valves are mounted on side wall or bottom of tanks to relieve excess ground water from around submerged structures, helping to prevent flotation of the structure.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=12694&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:

Size: [**4**] [**6**] <**\_\_\_\_\_\_\_\_**> inches

Materials:

Frame and Cover: [**Cast bronze, ASTM B584**] <**\_\_\_\_\_\_\_\_**>.

Hinge Pin: [**Type 304 stainless steel, ASTM A276**] <**\_\_\_\_\_\_\_\_**>.

Seat: [**Neoprene, ASTM D2000**] <**\_\_\_\_\_\_\_\_**>.

End Connection: Flanged, ASME B16.5.

* + - * 1. Accessories:

[**Cast-iron**] wall sleeve with integral strainer and waterstop.

Flange bolts and gasket.

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

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. EXAMINATION
          1. Verify that field dimensions are as indicated on [**Shop**] Drawings.
       2. PREPARATION
          1. Thoroughly clean end connections before installation.
          2. Cleaning: Clean surfaces to remove foreign substances.
       3. INSTALLATION
          1. According to manufacturer instructions and local code requirements.
          2. Repair damaged coatings with material equal to original coating.

\*\*\*\*\*\* [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.
      1. FIELD QUALITY CONTROL
         1. Testing: Test each valve for leak tightness at 75 percent of set point according to API 2000.
         2. After installation, inspect for interferences and proper supports.
         3. Repair damaged coatings with material equal to original coating.
      2. CLEANING
         1. Keep interior of valves clean as installation progresses.
      3. DEMONSTRATION
         1. Demonstrate equipment startup, shutdown, routine maintenance, and emergency repair procedures to Director’s Representative.
      4. ATTACHMENTS

When relying on separate schedules, tables, illustrations, or forms to specify product requirements, include list of each attachment. Include identical list of attachments in Project Manual table of contents.

Insert attachments following END OF SECTION. Consider following example when developing Project schedule.

* + - * 1. Pressure Relief Valve Schedule:

PRV-207:

Application: Digester Tank No.1.

Type: Hydrostatic.

Size: 4 inches

PRV-208:

Application: Digester Tank No.2.

Type: Hydrostatic.

Size: 4 inches

END OF SECTION 400567.39