section 230523

GENERAL DUTY VALVES FOR HVAC PIPING

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**NOTE TO SPECIFIER**

*Use this Specification Section for Mail Processing Facilities.*

***This is a Type 1 Specification with completely editable text; therefore, any portion of the text can be modified by the A/E preparing the Solicitation Package to suit the project.***

*For Design/Build projects, do not delete the Notes to Specifier in this Section so that they may be available to Design/Build entity when preparing the Construction Documents.*

*For the Design/Build entity, this specification is intended as a guide for the Architect/Engineer preparing the Construction Documents.*

*The MPF specifications may also be used for Design/Bid/Build projects. In either case, it is the responsibility of the design professional to edit the Specifications Sections as appropriate for the project.*

*Text shown in brackets must be modified as needed for project specific requirements.* *See the “Using the USPS Guide Specifications” document in Folder C for more information.*

*The last date that USPS revised this standard specification section occurs in two places, at the end of this section and in the Table of Contents. If the date in this section matches the date in the Table of Contents, then you are using the latest version. Do not delete or revise the “last revised” date at the end of the section during the development of the Project Manual.*

*The footer in this section should be edited to replace the text, “USPS MPF SPECIFICATION” with the project name, and the blank date in the center should be replaced with the submission date, for interim design reviews, or the issue date of the completed Project Manual.*

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1. GENERAL
	1. SUMMARY
		1. This Section includes the following:
			1. Ball valves.
			2. Gate valves.
			3. Globe Valves.
			4. Butterfly valves.
	2. SUBMITTALS
		1. Product Data: Include certified performance curves and rated capacities, operating characteristics, furnished specialties, final impeller dimensions, and accessories for each type of product indicated. Indicate pump's operating point on curves.
		2. Operation and maintenance data.
	3. QUALITY ASSURANCE
		1. ASME Compliance: ASME B31.9 for building services piping valves except domestic hot- and cold-water piping.
		2. NSF Compliance: NSF 61 for valve materials for potable-water service.
2. PRODUCTS
	1. Manufacturers:
		1. Valves: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
			1. American Valve, Inc.
			2. Bray International, Inc.
			3. Crane Co.; Crane Valve Group.
			4. Grinnell Corporation.
			5. Hammond Valve.
			6. Metraflex Co.
			7. Milwaukee Valve Company.
			8. NIBCO INC.
			9. Red-White Valve Corp.
			10. Tyco International, Ltd.; Tyco Valves & Controls.
			11. Watts Industries, Inc.; Water Products Div.
		2. Refer to valve application paragraphs for applications of valves.
		3. Bronze Valves: NPS 2 (DN 50) and smaller with threaded ends, unless otherwise indicated.
		4. Ferrous Valves: NPS 2-1/2 (DN 65) and larger with flanged ends, unless otherwise indicated.
		5. Valve Actuators: Handwheel for valves other than quarter-turn types and lever handle for quarter-turn valves.
		6. Copper-Alloy Ball Valves, General: MSS SP-110.
			1. Two-Piece, Copper-Alloy Ball Valves: Brass or bronze body with full-port, chrome-plated bronze ball; PTFE or TFE seats; and [600-psig] minimum CWP rating and blowout-proof stem. Valve stem shall be stainless steel construction.
		7. Ferrous-Alloy Butterfly Valves, General: MSS SP-67, Type I, for tight shutoff, with disc and lining suitable for potable water, unless otherwise indicated.
			1. Flangeless, 150-psig CWP Rating, Ferrous-Alloy Butterfly Valves: Wafer type with one- or two-piece stem with aluminum bronze disc. All stem sections shall be stainless steel.
			2. Single-Flange, 150-psig CWP Rating, Ferrous-Alloy Butterfly Valves: Wafer-lug type with one- or two-piece stem. All stem sections shall be stainless steel.
		8. Bronze Check Valves, General: MSS SP-80.
			1. Class 125, Bronze, Swing Check Valves: Bronze body with aluminum bronze disc and seat.
		9. Spring-Loaded, Lift-Disc Check Valves, General: FCI 74-1, with spring-loaded bronze or alloy disc and bronze or alloy seat.
			1. Class 125, Compact-Wafer, Lift-Disc Check Valves: Compact-wafer style with cast-iron shell with diameter made to fit within bolt circle.
		10. Bronze Gate Valves, General: MSS SP-80, with ferrous-alloy handwheel.
			1. Class 125, Bronze Gate Valves: Bronze body with nonrising stem and bronze solid wedge.
		11. Cast-Iron Gate Valves, General: MSS SP-70, Type I.
			1. Class 125, NRS, Bronze-Mounted, Cast-Iron Gate Valves: Cast-iron body with bronze trim, nonrising stem, and solid-wedge disc.
			2. Class 125, OS&Y, Bronze-Mounted, Cast-Iron Gate Valves: Cast-iron body with bronze trim, rising stem, and solid-wedge disc.
			3. Class 250, NRS, Bronze-Mounted, Cast-Iron Gate Valves: Cast-iron body with bronze trim, nonrising stem, and solid-wedge disc.
			4. Class 250, OS&Y, Bronze-Mounted, Cast-Iron Gate Valves: Cast-iron body with bronze trim, rising stem, and solid-wedge disc.
		12. Bronze Globe Valves, General: MSS SP-80, with ferrous-alloy handwheel.
			1. Class 125, Bronze Globe Valves: Bronze body with bronze disc.
		13. Cast-Iron Globe Valves, General: MSS SP-85.
			1. Class 125, Cast-Iron Globe Valves: Gray-iron body with bronze seats.
3. EXECUTION
	1. Valve Applications:
		1. Refer to piping Sections for specific valve applications. If valve applications are not indicated, use the following:
			1. Shutoff Service: Ball, butterfly, or gate valves.
			2. Throttling Service: Ball, butterfly, or globe valves.
			3. Pump Discharge: Spring-loaded, lift-disc check valves.
			4. If valves with specified SWP classes or CWP ratings are not available, the same types of valves with higher SWP class or CWP ratings may be substituted.
	2. Chilled-Water Piping:
		1. Use the following types of valves:
			1. Ball Valves, NPS 2 (DN 50) and Smaller: Two-piece, 400-psig CWP rating, copper alloy.
			2. Butterfly Valves, NPS 2-1/2 (DN 65) and Larger: Flangeless or Single-flange, [150-psig] CWP rating, ferrous alloy, with EPDM liner.
			3. Swing Check Valves, NPS 2 (DN 50) and Smaller: Class 125, bronze.
			4. Swing Check Valves, NPS 2-1/2 (DN 65) and Larger: Type II, Class 125, gray iron.
			5. Spring-Loaded, Lift-Disc Check Valves, NPS 2 (DN 50) and Smaller: Type IV, Class 125 minimum.
			6. Spring-Loaded, Lift-Disc Check Valves, NPS 2-1/2 (DN 65) and Larger: Class 125, cast iron.
			7. Gate Valves, NPS 2 (DN 50) and Smaller: Class 125, bronze.
			8. Gate Valves, NPS 2-1/2 (DN 65) and Larger: Type I, Class 125, bronze-mounted cast iron.
			9. Globe Valves, NPS 2 (DN 50) and Smaller: Class 125, bronze.
			10. Globe Valves, NPS 2-1/2 (DN 65) and Larger: Class 125, bronze-mounted cast iron.
	3. Domestic Water Piping:
		1. Use the following types of valves:
			1. Ball Valves: Two-piece, 400-psig CWP rating, copper alloy.
			2. Swing Check Valves, NPS 2 (DN 50) and Smaller: Class 125, bronze.
			3. Spring-Loaded, Lift-Disc Check Valves, NPS 2 (DN 50) and Smaller: Class 125 minimum.
			4. Gate Valves, NPS 2 (DN 50) and Smaller: Class 125, bronze.
			5. Globe Valves, NPS 2 (DN 50) and Smaller: Class 125, bronze.
	4. Select valves
		1. Valves with the following end connections:
			1. For Copper Tubing: Solder-joint or threaded ends
			2. For Steel Piping, NPS 2 (DN 50) and Smaller: Threaded ends.
			3. For Steel Piping, NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Flanged or threaded ends.
			4. For Steel Piping, NPS 5 (DN 125) and Larger: Flanged ends.
	5. Valve Installation:
		1. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
		2. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
		3. Locate valves for easy access and provide separate support where necessary.
		4. Install valves in horizontal piping with stem at or above center of pipe.
		5. Install valves in position to allow full stem movement.
		6. Install check valves for proper direction of flow and swing check valves in horizontal position with hinge pin level.
		7. Refer to Division 15 Section "Basic Mechanical Materials and Methods" for basic piping joint construction.
			1. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

END OF SECTION

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