

American Iron and Steel Waiver Request

**Project:** Smithsburg WWTP ENR Upgrade and Expansion

**Location:** 22523 Leitersburg Smithsburg Road, Smithsburg MD 21783

**Supplier:** [REDACTED]  
[REDACTED]  
[REDACTED]

NOTE: Information in this waiver may have been redacted or removed due to issues of proprietary business information or incompatibility with Federal accessibility requirements. To request the information redacted for purposes of accessibility requirements, please email [CWSRFWaiver@epa.gov](mailto:CWSRFWaiver@epa.gov).

**Description of the Product:**

- (35) 3" 304SS Split Rings
- (40) 2" 304SS Split Rings
- (50) 1.5" 304SS Split Rings

**Total Overall Cost of Construction:** [REDACTED]

**Total Material Cost for the Project:** [REDACTED]

**Total Cost of Proposed Non-Compliant Material:** [REDACTED]

**Justification:** Normal construction of small diameter piping in the wastewater industry utilizes the split ring support as a means to mount piping to vertical surfaces or under pipes that run along a floor surface. At this project there are various locations where these supports are to be utilized as outlined in the drawings and specifications. As you will see in the attached letter from our pipe support supplier, (4) major support manufacturers do not manufacturer split rings that meet the American Iron and Steel Act. Please note this only applies to the ring and hardware, not the anchoring or wall mounting material.

**SECTION 40 23 36.12****PIPE HANGERS AND SUPPORTS****PART 1 GENERAL****1.1 SUMMARY**

- A. This section includes requirements for providing pipe hangers, brackets, supports, and spacing of expansion joints in piping systems as indicated in accordance with the Contract Documents. Pipe supports shall be furnished complete with all necessary inserts, bolts, nuts, rods, washers, and other accessories.
- B. The Contractor shall be responsible for the design of pipe saddles and related supports where specific detail is not provided. The Contractor shall be responsible for the final coordinated design of these saddles and supports and shall submit details and design calculations to document that the pipe saddles and supports have been designed and coordinated to meet the design requirements defined hereinafter.

**1.2 JOB CONDITIONS**

- A. In certain locations, pipe supports and anchors are shown on the drawings, but no attempt has been made to indicate every pipe support and anchor. It shall be the Contractor's responsibility to provide complete system of pipe supports and to anchor all piping in accordance with this section.
- B. Concrete and fabricated steel supports shall be as indicated on the drawings, as specified in other sections, or, in the absence of such requirements, as permitted by the Engineer.
- C. All piping shall be rigidly supported and anchored so that there is no movement or visible sagging between supports.
- D. Expansion joints are not required in buried piping, but concrete supports, blocking or other suitable anchorage shall be provided as indicated on the drawings or specified in other sections.

**1.3 SUBMITTALS**

- A. Design calculation and details for pipe saddles, hangers and supports bearing the stamp of a registered professional engineer in the State of Maryland.
- B. Shop drawings in conjunction with Specification Sections for piping, valves and pumps, showing the location of all pipe supports for pipes two-inches and larger. Shop drawings shall show fabrication and installation details.
- C. Catalog data for all hangers, supports and associated components to be used.
- D. Manufacturer's installation instructions.

**1.4 DESIGN CRITERIA**

- A. The following design conditions shall be used for design of the pipe saddles, supports and hangers.
  - 1. Operating pressure shall be equal to the test pressure defined in Section 40 23 36.13.
  - 2. Operating temperature range:
    - a) For process pipes the design temperature range shall be 10 degrees Fahrenheit to 80 degrees Fahrenheit.
    - b) For potable and utility water the design temperature range shall be 10 degrees Fahrenheit to 80 degrees Fahrenheit.

- c) All other pipes shall be designed for similar ranges as appropriate.

**PART 2 PRODUCTS**

**2.1 GENERAL**

- A. Pipe supports shall comply with ANSI/MSS SP-58 and MSS SP-69 and Federal Specification WW-H-1713. Load carrying and coating tests will not be required.
- B. Pipe supports specified are identified by manufacturer's name and catalog number.
- C. Pipe supports shall be manufactured for the size and type of pipe to which they are applied. Straphangers will not be acceptable. Threaded rods shall have threading to permit the maximum adjustment available in the support item.
- D. Pipe supports shall be furnished complete with all necessary inserts, bolts, nuts, rods, washers, and other accessories.
- E. Contact between dissimilar metals, including contact between stainless steel and carbon steel, shall be prevented. Supports for brass or copper pipe or tubing shall be copper plated. Those portions of pipe supports which contact other dissimilar metals shall be rubber or vinyl coated.

**2.2 DESCRIPTION**

Pipe support types and application shall comply with the following.

<u>Description or Size</u>	<u>MSS SP-69</u>	<u>Manufacturer and Model</u>
A. Hangers		
2-½-inch and smaller pipe,		
adjustable J	5	████████████████████ ██████████████████
clevis	1	████████████████████ ██████████████████
3-inch through 10-inch pipe		
clevis	1	████████████████████ ██████████████████
12 inch and larger pipe		
clevis	1	████████████████████ ██████████████████

<u>Description or Size</u>	<u>MSS SP-69</u>	<u>Manufacturer and Model</u>
B. Standard weight and extra strong steel pipe and stainless steel pipe (all sizes)		
uninsulated, steel pipe clamp	4	[REDACTED]
C. Concrete Rod Attachment Plate, 6-inch and smaller pipe	19	[REDACTED]
D. Turnbuckles, Steel	13	[REDACTED]
E. Hanger Rods, Carbon Steel, threaded both ends, ½-inch minimum size	--	[REDACTED]
F. Wall Supports and Frames, steel 12 inch and smaller pipe		
brackets	33,34	[REDACTED]
prefabricated channels, galvanized	--	12 gauge, 1-5/8" x 1-5/8" with suitable brackets and pipe clamps.
offset pipe clamp, 1-1/2-inch and smaller pipe, galvanized	--	1-1/4" x 3/16" steel, with 3/8" bolts.
offset pipe clamp, 2-inch to 3-1/2-inch pipe, galvanized	--	1-1/4" x 3/16" steel, with 3/8" bolts.
G. Pipe Riser Clamps		
cold piping system	-	[REDACTED]
copper tubing	-	CT-121 or CT-121C

	<u>Description or Size</u>	<u>MSS SP-69</u>	<u>Manufacturer and Model</u>
	other piping systems	–	████████████████████
H.	Floor Supports, steel or cast iron, 6-inch and smaller pipe	38 (with base)	████████████████████ ████████████████████
	8 inch through 24 inch pipe	38	████████████████████ ████████████████████

**PART 3 EXECUTION**

**3.1 LOCATION AND SPACING**

- A. Piping shall be supported approximately 1-1/2 inches out from the face of walls and at least 3 inches below ceilings or beams. The maximum spacing for pipe supports and expansion joints shall be:

<b>Type of Pipe</b>	<b>Pipe Support Maximum Spacing, Feet</b>	<b>Maximum Run without Expansion Joint, Loop or Bend, Feet (See Note 1)</b>	<b>Expansion Joint Maximum Spacing, Feet (See Note 2)</b>	<b>Type of Expansion Joint</b>
<u>Ductile Iron</u>	15	80	80	Mechanical Couplings
<u>Steel:</u>				
1-1/4-inch and smaller	7	30	100	Note 3
1-1/2 and larger	10	30	100	Note 3
<u>Copper:</u>				
1-inch and smaller	5	--	--	None required
Over 1-inch	7	50	100	Note 3
<u>PVC:</u>				
1/8- and 1/4-inch	Continuous Support	20	60	None required

½- to 2-inch	4	20	60	None required
Over 2-inch	6	20	60	None required
<u>Cast Iron Soil Pipe:</u>	10	–	–	None required

- Notes:
1. Unless otherwise permitted, an expansion joint shall be provided in each straight run of pipe having an overall length between loops or bends exceeding the maximum run specified herein.
  2. Unless otherwise permitted, the spacing between expansion joints in any straight pipe run shall not exceed the maximum spacing specified herein.
  3. Expansion joint fittings as specified in the miscellaneous piping section.
  4. At least two properly padded supports for each pipe section.
  5. At least one support for each pipe section.

**3.2 INSTALLATION**

- A. Concrete inserts or L-shaped anchor bolts shall be used to support piping from new cast-in-place concrete. Expansion anchors shall be used to fasten supports to masonry.
- B. Design loads for inserts, brackets, clamps, and other support items shall not exceed the manufacturer's recommended loads.
- C. Anchorage shall be provided to resist thrust due to temperature changes, changes in diameter or direction, or dead ending. Anchors shall be located as required to force expansion and contraction movement to occur at expansion joints, loops or elbows, and as required to prevent excessive bending stresses and opening of mechanical couplings. Anchorage for temperature changes shall be centered between elbows used as expansion joints.
- D. Provide dielectric isolation. Do not allow copper and other metals to make contact with each other.
- E. All piping shall be supported and anchored so that there is no movement or visible sagging between supports.
- F. Pipe supports shall be manufactured for the size and type of pipe to which they are applied. Straphangers will not be acceptable. Threaded rods shall have sufficient threading to permit the maximum adjustment available in the support item.
- G. Vertical Piping:
  1. Secure at sufficiently close intervals to keep pipe in alignment and to support weight of pipe and its contents.
  2. Support vertical iron and steel pipe on maximum 5'-0" centers with steel pipe riser clamps.
  3. Support vertical copper tubing at no more than 10'-0" spacing, using plastic coated steel pipe riser clamps or pipe clamp hangers at end of runs and at intermediate points as installation dictates.
  4. Support vertical plastic pipe at 4'-0" centers, using plastic coated pipe riser clamps or pipe clamp hangers at end of runs and at intermediate points as installation dictates.
- H. Horizontal Piping:
  1. Support at sufficiently close intervals to prevent sagging, thrust restraint, and vibration.

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2. Install hangers or supports at ends of runs or branches, at valves, and at each change of direction or alignment.
  3. Install steel clevis-type pipe hangers for horizontal iron and steel pipe on maximum 10'-0" centers.
  4. Install steel clevis-type pipe hangers for copper tubing on 6'-0" centers for 1-1/4" size and smaller, and on 10'-0" centers for copper tubing larger than 1-1/4" size.
  5. Install plastic coated ring-type pipe hangers for horizontal plastic pipe on maximum 4'-0" centers, close to every joint, at ends of each branch, and at each change in direction of elevation; hangers shall not compress, distort, cut or abrade plastic piping and shall permit free movement of the pipe.
- I. The Contractor is responsible for properly bracing piping against lateral movement or sway. The Engineer shall review with the Contractor and approve method of bracing of piping at each location prior to Contractor proceeding with the installation of the bracing. Bracing shall be installed at all locations where sway is anticipated and as directed by the Engineer.
  - J. Rubber hose and flexible tubing shall be provided with continuous angle or channel support.

**END OF SECTION 40 23 36.12**