

City of Milwaukee
Department of Public Works

Milwaukee Water Works

Material Specifications for
Stainless Steel Repair Clamp



City of Milwaukee Specification No. 30-D-13
Revised August 9, 2016

- I. **GENERAL REQUIREMENTS:** Vendors bidding through the Department of Administration – Purchasing Division shall comply with the latest version of City of Milwaukee Specification No. 70b-D-7, except as modified in the technical requirements as described herein. **MATERIALS FURNISHED UNDER THIS SPECIFICATION SHALL COMPLY WITH AND BE CERTIFIED WITH THE PROVISIONS OF THE CITY OF MILWAUKEE ORDINANCE 310-18.9 AND THE AMERICAN IRON AND STEEL REQUIREMENT (AIS) OF THE DRINKING WATER STATE REVOLVING FUND (DWSRF).**

II. **TECHNICAL REQUIREMENTS**

- A. Description: Pipe repair clamps as described herein shall consist of a rubber liner completely enclosed and fastened in a stainless steel assembly all of which is galvanically passive to gray cast or ductile iron.
- B. Materials: Repair clamp materials shall conform to the following requirements:
1. All metallic components shall be made of 300 series AISI Austenitic 18-8 stainless steel.
 2. Bands and bridging for pipe sizes 2" thru 12" shall be 20 gauge minimum (0.036") and for pipe sizes 16" thru 24" shall be 18 gauge minimum (0.048").
 3. The gaskets shall be made of 100% new compounds of SBR (Styrene Butadiene Rubber) or approved equal, suitable for use on a potable water main.
 4. The studs shall be welded to the stiffeners and the lugs welded to the band with austenitic 18-8 stainless steel rod. All welds shall have corrosion resistance equal to or greater than 18-8 stainless steel.
 5. Armor shall be 14 gauge minimum and molded into gasket to prevent "hanging up" during installation.
 6. The tapped outlet, when required to be furnished on the repair clamp, shall be permanently fused to the repair clamp body by means of Heliarc welding and fully passivated. The clamp shall be chemically cleaned after welding to maintain the original passive state of the stainless steel.
- C. Repair Clamp Design: Repair clamps shall be designed in accordance with the following requirements:
1. The bands shall be constructed of a single section for sizes 2" thru 12" and two sections for 16" size and of two or three sections for 20" and 24" sizes.
 2. Repair clamp shall be fastened by means of bolts or studs welded to the side stiffeners.

3. Repair clamps shall fit the pipes with outside diameter range as shown below.

<u>Pipe Size</u>	<u>Minimum</u>	<u>Maximum</u>
2"	2.38	2.62
3"	3.75	4.00
4"	4.80	5.00
6"	6.90	7.10
8"	9.05	9.30
10"	11.10	11.40
12"	13.20	13.50
16"	17.40	17.80
20"	21.60	22.06
24"	25.80	26.32

4. Joint lugs shall be furnished with a maximum bolt spacing of 4". The lugs shall be adequately secured to the body and shall be designed to prevent bending of the bolts.
5. The nuts and bolts shall have UNC Class 2 fit, shall be a minimum of 1/2" diameter for the 2" thru 4" size and a minimum of 5/8" diameter for the 6" thru 24" sizes and shall be 18-8 stainless steel.
6. The gaskets shall be molded to a nominal thickness of 3/16" and shall be resistant to crystallizing, aging and permanent set.
7. The minimum clamp length shall be the length specified on the bid form.
- D. Hydraulic Capability: All components of the pipe repair clamps in each size shall be adequate in size to withstand a minimum of 150 psi when sealing a pipe opening of 6 square inches.
- E. Marking: The range of pipe O.D.'s, month and year of manufacture and manufacturer's name are to be marked on the outside band surface.
- F. Certifications: Upon request, the contractor shall submit the manufacturer's certifications in duplicate to the Superintendent of Milwaukee Water Works, certifying the materials and physical properties of the materials used in producing the pipe repair clamps.

III. ACCEPTABLE BRANDS

The following brands are acceptable to the City of Milwaukee under this specification:

Cascade
Power Seal
Smith - Blair
Romac

IV. INSPECTION BY CITY

- A. All required drawings, manuals and certifications shall be furnished before any materials will be inspected and accepted.
- B. The Superintendent of the Milwaukee Water Works, or a duly authorized representative, will inspect all materials furnished under this specification.
- C. Testing will be done on ten (10) percent of the whole shipment and rejections will be based on the results of testing these samples.
- D. Any materials found not conforming to this specification will be rejected and must be replaced at no cost to the City including all freight costs.