

**City of Milwaukee
Department of Public Works**

Milwaukee Water Works

**Material Specifications for
Curb Stops
Drain and Waste Stops,
Ball Valve Type
Sizes 3/4" Through 2"**



City of Milwaukee Specification No. 30A-C-6
September 18, 2014

- I. **GENERAL REQUIREMENTS:** Vendors bidding through the Department of Administration - Business Operations Division, Procurement Services Section shall comply with the latest version of City of Milwaukee Specification No. 70b-D-7, except as modified herein. **MATERIALS FURNISHED UNDER THIS SPECIFICATION SHALL BE MANUFACTURED IN THE UNITED STATES.**

II. **TECHNICAL REQUIREMENTS**

- A. **Description:** Ball Valve Curb Stops, described herein, shall consist of a ball type valve which will be used for isolating a building service. This unit shall be suitable for use with a standard Buffalo Pattern service box.

Ball Valve "Drain and Waste" Stops shall consist of a ball type valve that will be used for water main, air vent and blow-off drain installations. This unit will provide for venting or draining of the water main.

- B. **Standards:** Ball Valve Curb Stop shall be NSF 61 and NSF 372 certified, and designed in accordance with the latest revisions of AWWA C800 Standard for Underground Service Line Valves and Fittings, as modified herein.

- C. **Material:** Ball Valve Curb Stop materials shall conform to the following requirements:

1. Material of the body and ball shall be "No Lead" meeting ASTM B584 UNS copper alloy C89833 or C89520 as specified in the latest revision of AWWA C800, Section 4.
2. The ball shall be coated with a nontoxic, non water soluble, tenacious, self lubricating film, Teflon® or equal, that can withstand ambient temperature changes within a range of 32 degrees to 80 degrees Fahrenheit, and possesses suitable bonding and wearing qualities
3. The stem seals shall be made of high-grade rubber suitable for potable water.
4. The valve seats shall be molded NBR or Buna-N rubber in compliance with ASTM D2000 or an approved equal.

- D. **Workmanship:** Stops shall be of high quality and all castings shall be free from defects of any kind. Completed valves shall be free from metal chips.

- E. **Stop Design:** Stops shall be designed in accordance with the following requirements:

1. Outlet ends and coupling nuts shall comply with AWWA C800 for flared connection with Type "K" copper unless otherwise specified on the construction plan or bid documents. Each unit shall be furnished with two coupling nuts.
2. The "drain and waste" stop shall be furnished with American Standard Taper Pipe Threads at both ends. The unit shall be designed to drain all the downstream piping when the stop is closed and direction of flow indicated.

3. The stops shall be of straight-through/full port design. The size of the port shall not be less than the nominal size of the ball valve stop.
4. Rotation of the tee head shall be counterclockwise (left) one-quarter (1/4) turn to open.
5. Rotation shall be limited by a positive check at each end of the one-quarter (1/4) turn.
6. The tee head and stop shall be of adequate thickness, height, width and strength to withstand a torque at the fully open or fully closed position in accordance with the following table:

<u>Stop Size</u>	<u>Torque</u>
3/4"	60 ft-lbs
1"	65 ft-lbs
1-1/4"	80 ft-lbs
1-1/2"	100 ft-lbs
2"	120 ft-lbs

7. The tee head shall be in alignment with the flow passage thru the curb stop.
8. The operating torque with the ball valve stop closed, with 150 psi on one side and atmospheric pressure on the other shall be not more than 25 ft-lbs.
9. The pressure class for the ball valve stop shall be "high-pressure" as defined in AWWA C800, and shall be capable of withstanding a hydrostatic test pressure of 300 psi.
10. The seat shall be designed such that it remains drop tight, intact and show no distortion after being subjected to 110 psi while the ball is in the 15 degree, 30 degree, 45 degree, 60 degree and 75 degree positions from fully closed for a period of ten minutes in each position.
11. Valve body shall be clearly and permanently marked by either casting or stamping to indicate a low lead casting.

F. Tests by Manufacturer:

1. Hydrostatic Test: A hydrostatic pressure of 300 psi shall be applied to each ball valve in the open position.
2. Leakage Test: A hydrostatic pressure of 150 psi shall be applied to each ball valve stop in the closed position. The ball valve shall show no leakage in either the open or closed position test.

3. In lieu of the hydrostatic test of 300 psi and leakage test of 150 psi, the manufacturer may substitute an air under water test to a pressure of 125 psi for each of the required tests. The ball valves shall show no leakage for either test.

4. A chemical analysis of the copper alloy shall be made.

G. Certification by Manufacturer: Upon request, the contractor shall submit manufacturer's certifications induplicate to the Superintendent of Milwaukee Water Works attesting to the following:

1. Hydrostatic and leakage tests or the air under water test.

2. Chemical analysis.

III. ACCEPTABLE BRANDS

A. The following manufacturers are acceptable to Milwaukee Water Works:

The Ford Meter Box Company

A.Y. McDonald Mfg. Co.

Mueller Co.

Cambridge Brass

B. The above manufacturers are intended to be descriptive, but not restrictive. Other items of equal quality conforming to the requirements of this specification will be considered.

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 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 of these samples.

D. If required Hydrostatic, leakage, chemical and torque tests may be performed on ball valve stops by the City or an independent laboratory.

E. 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.