

City of Milwaukee
Department of Public Works

Milwaukee Water Works

Material Specifications for
Cast Iron Valve Boxes
(Buffalo Pattern)



City of Milwaukee Specification No. 30-B-7
Revised December 17, 2019

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 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:** Valve boxes specified herein shall be screw type and shall consist of a base, middle section, top section with cover and intermediate extension sections. The top section shall be designed to thread onto the middle section so that the unit can be adjusted to a continuously variable length. The top section shall be designed to receive a circular drop or locking cover. Valve boxes may have extension sections designed to fit between the middle and top section to achieve the required length. Various adjustment section options may be used to adjust previously installed valve boxes. A valve box is installed to provide access to the operator of a direct buried valve.

B. **Material:** The valve box and component parts shall be cast iron in accordance with ASTM-A48 class 20, 30, 35 or approved equal.

C. **Valve Box Design:** The valve box and component parts shall be the "Buffalo Pattern" in substantial accordance with drawings VB-1 thru VB-13 and shall be constructed within dimensional tolerances that will assure interchangeability with valve boxes manufactured in accord with these drawings as specified in Section III – Acceptable Brands.

1. The valve box shall be a three piece 5-1/4" diameter unit, screw type, cast iron, in accordance with the following requirements:
2. The inside diameter of the base section as shown on drawing VB-6 shall be 14" minimum.
3. Overall height of the box shall be in accordance with the table below.

Standard Box		
Size Identification	Retracted Maximum	Extended Minimum
D	47"	65"
DD	53"	71"
F	69"	82"

4. The 27" nominal top section as shown on drawing VB-3 shall be between 25" and 29" in length.

5. One extension section may be used to achieve the "Standard" overall height of the "F" middle section as shown on Drawing VB-4.
 6. The height increased by the extension section as shown on drawing VB-5 shall be 14", 18" or 20".
 7. Fixed risers (rings) as shown on drawings VB-7, VB-10 and VB-11 shall fit the "Buffalo Pattern" valve box and shall be the circular drop type capable of 1", 2", 2-1/2" or 3" height increase as required.
 8. Adjusting riser (section) shall fit the "Buffalo Pattern" valve box, with screw type design (drawings VB-8 or VB-12) or slip type (Drawing VB-13) as required, and shall be capable of 9" minimum height increase.
 9. Covers as shown on drawings VB-2 and VB-9 shall be the standard circular drop type with the word "Water" cast flush with the top of the cover. When covers are required with fixed or adjustable risers, the cover shall fit the risers specified.
 10. Locking covers shall consist of a circular lid, two jaws, a standard 27/32" pentagon head screw of bronze meeting ASTM B62, or 18-8 stainless steel meeting ASTM F593. and a spreader. The pentagon screws shall be of sufficient length and have the end threads upset after assembly to prevent the screw from being removed. The jaws of the locking lids shall be capable of being inserted inside a top section and all adjusting pieces.
- D. **Workmanship and Finish:** The cast iron valve box and components shall be free from blowholes, cold shots, shrinkage defects, cracks or other injurious defects and shall have a normal smooth casting finish.
- E. **Coating:** All cast iron valve boxes and components shall be thoroughly coated with asphaltic pitch varnish or approved equal.
- F. **Certification:** Certification of compliance with provisions of the American Iron and Steel Act shall be furnished with every order.

III. **ACCEPTABLE BRANDS:** Following brands are acceptable to the City of Milwaukee

Bingham & Taylor – 4906 Series Valve Box castings (All component parts), I5LBWULB and I4LWULBVB9 locking covers

Tyler – 6860 Series Valve Box castings; Lid must be 145370 "MWW drop lid"

East Jordan Iron Works – Series 8560 Valve Box castings; Lid must be 2½" skirt (All component parts except Valve Box Base)