

# ***Cold Water Meters - Fire-Service Type without Bypass Sizes 3” - 10”***

## ***Scope***

This Specification covers Cold-Water Meters - Fire-Service Type with ductile iron main cases, sizes 3” though 10”. The fire-service meter shall consist of a combination of a mainline meter and UL approved strainer. The meter shall be so designed for applications where a high degree of accuracy is required over a wide range of water flow rates. The meters must conform to American Water Works Standard C-703, as most recently revised, be UL listed, Factory Mutual and NSF-61 compliant.

## ***Type***

Meters shall be comprised of a horizontal turbine meter measuring element, measuring flow rates and a UL listed strainer housed in a uni-body design without a bypass.

## ***Size***

The size of the meter shall be determined by the nominal size of the opening of the inlet and outlet flanges of the meter.

## ***Pressure Test***

Meters shall be guaranteed to operate successfully at a working pressure of 175 PSI without leakage or damage to any part.

## ***External Bolts***

All external bolts shall be of non-ferrous stainless steel composition.

## ***Length***

The maximum overall length of the meter shall be face-to-face dimensions as listed below:

Size of Meter	Length
3”	18”
4”	20”
6”	24”
8”	28”
10”	39-1/4”

## ***Construction***

The uni-body main case and strainer shall be constructed of ductile iron and be epoxy coated. The main case shall be a uni-body design that contains both the main line meter measuring element and the strainer to eliminate excess hardware, fasteners and reduce weight, size and the possibility of leaks. The main-line measuring element shall be easily accessible by removal of a single top case. All main cases 3” through 10” shall have flanged ends with the inlet and outlet flange having a common axis.

The size, type and direction of flow through the meter shall be cast in raised characters on the main line.

***Registration***

The registration shall accurately be recorded through the normal test flow limits at not less than 98.5% or more than 101.5% of actual throughput.

Size	Normal Test Flow Limits GPM @ ±1.5%	High Intermittent Flow Rates GPM @ ±1.5%
3”	6 - 600	750
4”	8 - 1000	1250
6”	15 - 2000	2500
8”	30 - 3500	4400
10”	40 - 5500	6900

Meters shall have performance capabilities of continuous operation up to the rated maximum flows as outlined above without affecting long-term meter accuracy caused by undue wear. Meter shall also be rated for a 25% high intermittent flow capacity in excess of the normal flow listed above. This would be for intermittent high flow capacity only.

***Registers***

Registers shall be available with center sweep hand, straight reading indicating cubic feet, U.S. gallons or metric registration. All registers for 3” through 10” Fire-Service meters shall be guaranteed for a period of 20 years from the date of manufacture.

***Register Box and Lid***

The register box and lid shall be made of plastic. The name of the manufacturer and the meter serial number shall be identifiable and located on the register box lid or register housing. The register box which encloses the register shall be mounted with a bayonet style locking system for orientation in any reading position. No special tools shall be required for removal of the register

## ***Register Box Sealing***

The register box shall be fastened to the meter by a locking pin in such a manner that unauthorized removal and tampering is deterred and readily apparent to the customer.

## ***Measuring Chambers***

The main-line measuring element shall be unitized and easily removed from the main case cover.

Meters shall have a design that allows water to flow straight through the measuring element where it turns a rotor at a rate in direct proportion to the quantity of water flowing through the meter. The straight-through design shall allow high volumes to flow with a minimum of head loss.

During low flow, a tungsten carbide bearing shall float against a stainless steel shaft; during high flows, a tungsten carbide bearing shall gently move back against a second stainless steel shaft. During medium flows, the rotor shall float between both tungsten carbide bearings floating in the water on sapphire bushings.

## ***Warranty***

Meters shall be warranted against defects in material and workmanship for a period of one (1) year from the date of shipment.