

SECTION 15151 - DISPLACEMENT TYPE COLD WATER METERS

1.0 GENERAL

1.1 Furnish and install cold water meters as specified herein and where shown on drawings.

1.2 Reference Specifications are referred to by abbreviation as follows:

A. American Water Works Association..... AWWA

1.3 Submit three (3) copies of shop drawings for meters.

2.0 PRODUCTS

A. All meters ½" to 2" shall be constructed in accordance with AWWA C700 latest revision "Standard Specification for Cold Water Meters - Displacement Type." Meters may be oscillating-piston or nutating-disc. This specification shall prevail over any details in conflict with AWWA Specification C700. Meters shall be manufactured by Sensus Metering Systems.

B. All meters 3" to 10" shall be constructed in accordance with AWWA C702 latest revision "Cold-Water Meters—Compound Type". This specification shall prevail over any details in conflict with AWWA Specification C702. Meters shall be manufactured by Sensus Metering Systems.

C. All meters shall have a non-corrosive outer case of bronze. Each meter shall be equipped with a frost protection device which shall be a four bolt bottom plate. Meter bottoms may be made of cast iron (with an inner liner for corrosion protection) or a suitable synthetic polymer material. The ⅝" thru 1" meters shall be bottom loading solid case, 1½" and 2" meters shall be split case type with bronze upper and lower shell assemblies. Register boxed and lids may be made of either bronze or a suitable synthetic polymer material.

D. Meters shall in areas where sewer is provided be equipped with Sensus MXU Meter Transceiver unit Model 520R with DualPort Touchcoupler in lieu of TRLP housing meters in areas where only water service is provided shall be equipped with 520R Single Port Touchcoupler.

E. Registers and Intermediate Gear Train:

(1) Registers shall be "Touch Read" automated reading in 100 gallons per rotation and have a center sweep test hand and a separate flow detector device. Numeral wheels for units and tens shall be different color from other numeral wheels.

- (2) The intermediate gear train shall be built in the register. Reduction gears may be of brass or molded plastic construction. Actuating power shall be transmitted by means of a two piece permanent magnet drive coupling.
 - (3) The register and intermediate gear train shall be hermetically and permanently sealed in a register cup of bronze (75% copper composition) or stainless steel. The register lens shall not fog, cloud or collect condensation on the inside. The register shall be designed to be tamper proof and the lens shall be heat treated glass.
- F. The serial number shall be plainly stamped on both register box lid and case of all meters. All serial numbers should be readable when viewed from the top.
- G. Measuring Chambers:
- (1) Measuring chambers shall be bronze or synthetic polymer construction and disc meter must be equipped with a disc having a movable thrust roller. For $\frac{5}{8}$ " thru 1" disc meters, the roller shall operate radially and be restrained from the end movement by a channel bearing or the thrust rollers shall operate against a flat removable insert. Thrust rollers in 1½" and 2" disc meters shall operate against a flat removable insert. The piston, piston roller, and division plate in compound meters shall be of rubber composition or an approved synthetic polymer. The turbine in compound meters shall be made of polypropylene, mounted on a replaceable #316 stainless steel shaft and rotate on roller bearings.
 - (2) In piston meters, the measuring chamber piston shall operate against a replaceable control or thrust roller for measuring chamber repair to AWWA standards.
 - (3) Measuring chambers of the 1½" and 2" size shall be set for maximum flow at the inlet where provision is mad for adjustment.
- H. All meters 2" and smaller shall have internal strainers.
- I. All external bolts and washers shall be of a non-corrosive material and easily removed from the main case after extended periods of service. No shear pin bolts will be allowed under this specification.
- J. Main case connections for $\frac{5}{8}$ " thru 1" meters shall be threaded spuds. The 1½" and 2" meters shall be 2 bolt oval flange style. Flanges for 3" to 6" compound meters shall be Class 150 bronze round type, flat faced and shall conform to ANSI B16.24 for specified diameter.
- K. All meters shall be so constructed that they may be repaired or reconstructed in Purchaser's meter shop and all parts necessary for such repairs shall be available from vendor.

L. Guarantee and Maintenance Program:

- (1) Quotations shall be accepted only from those companies who are actively engaged in the manufacture of all parts for their meter in the United States and who have a minimum of three (3) years operating experience with their meter. The meters shall be guaranteed to perform to AWWA new meter accuracy standards for a period of one (1) year after the date of shipment. Meters with less than three (3) years operating experience will be accepted provided the meter is guaranteed to perform to AWWA new meter accuracy standards for a period of five (5) years after the date of shipment.
- (2) Meters shall perform to AWWA repaired meter standards for the following minimum time periods and registrations:
 - (a) $\frac{5}{8}$ " - 15 years or 1.5 million gallons
 - (b) $\frac{3}{4}$ " - 15 years or 2.25 million gallons
 - (c) 1" - 15 years or 3.0 million gallons
- (3) Registers for $\frac{5}{8}$ " thru 1" meters shall be guaranteed for a period of no less than 25 years from the date of shipment. Registers greater than 1 $\frac{1}{2}$ " meters shall be guaranteed for a period of no less than 10 years from the date of shipment.
- (4) Manufacturer must provide a meter maintenance plan in writing, which includes the price of repairing meters to meet AWWA new meter accuracy standards after the expiration of the performance guarantee.

3.0 EXECUTION

- 3.1** Install new meters in accordance with manufacturer's instructions.

END OF SECTION