



Newport Utilities Turbine Meter Specifications 1-1/2", 2", 3", 4", and 6" Sizes

Scope

These specifications set forth the minimum acceptable design criteria and performance requirements for Turbine-type cold water meters including the following potential service applications and general conditions:

- Intended where a moderately wide flow range is anticipated
- Measurement of water usage for typical billing applications
- Measurement intended for typical commercial and industrial applications
- Measurement of low flow usage levels
- Measurement of constant medium to extended high flow usage

Conformance to Standards

The meter package shall meet or exceed all requirements of ANSI/AWWA Standard C701 for Class II turbine meter assemblies. Each meter assembly shall be performance tested to ensure compliance.

Maincases

The meter maincase shall be of fusion bonded epoxy coated ductile iron composition meeting NSF for non-lead regulation compliance or low lead alloy Bronze complete with the appropriate size test plug for each meter size.

Measuring Chamber

The measuring chamber shall consist of a measuring element, removable housing, and an encoded type register. The measuring element shall be mounted on a horizontal, stationary stainless steel shaft with sleeve bearings and be essentially weightless in water.

Register

Registration shall be in gallons. The meter's register shall be of the encoded type and electronically read to the nearest 100 gallons.

Transponder

The transponder unit shall be Badger ADE 6 dial, Orion Data Profiling pit transmitter in USG.

Maximum Operating Pressure

The meter assembly shall operate properly without leakage, damage, or malfunction up to a maximum working pressure of 200 pounds per square inch (psig).

Strainers

The meter strainer shall be integral and cast as part of the meter's maincase. The strainer's screen shall have a minimum net open area of at least two (2) times the pipe opening and be a V-shaped configuration for the purpose of maintaining a full unobstructed flow pattern. The strainer body shall be manufactured of a material identical to that of the meter's maincase. All fasteners shall be stainless steel capable of maintaining the following static pressure ratings and physical dimensions:

Meter Size	Maximum Operating Pressure	Centerline to Strainer Base	Overall Length (Not to Exceed)
1-1/2"	200 psig	2-5/16 inches	13 inches
2"	200 psig	2-5/16 inches	17 inches
3"	200 psig	4-1/8 inches	19 inches
4"	200 psig	4-3/4 inches	23 inches
6"	200 psig	5-3/4 inches	27 inches

Straightening Vanes

A straightening vane assembly is mandatory and shall be positioned directly upstream of the measuring element. The straightening vane assembly shall be an integral component of the measuring chamber.

Connections

Flanges for the 1-1/2" and 2" size meter assemblies shall be of the 2-bolt oval flange configuration. The 3", 4", and 6" size meter assemblies shall have flanges of the Class 125 round type, flat faced and shall conform to ANSI B16.1 for specified diameter, drilling, and thickness.

Certifications and Markings

All sizes of meter packages shall display the size, model, manufacturer name, and direction of flow. Such display shall be cast on the side of the meter maincase.

Guarantee and Maintenance Program

Meters shall be guaranteed against defects in material and workmanship for a period of one (1) year from date of shipment. In addition, the meter supplier shall submit nationally published literature clearly outlining its factory maintenance program and current price schedule covering complete measuring chamber exchange.

Performance Warranties

In evaluating bid submittals, warranty coverage will be considered. All bidders are required to submit their most current nationally published warranty statements for water meter maincases, registers, and measuring chambers.

Intent

Subject meter specifications are designed to establish minimum guidelines for selecting an extremely critical metering device. Areas of concern to be evaluated in the selection process include, but are not limited to, ease of installation, operational features and benefits, readability, and future system maintenance expense. A design which reflects longevity of proper operation in all elements and high degree of sustained accuracy within the entire range of the meter assembly is to be considered mandatory. Enhanced accuracy levels and performance are desired and will not be compromised.

Shipment Verifications

A statistically controlled sample of each meter shipment will be tested by the utility to insure each shipment meets the utility performance and materials specifications.