

# Differential Pressure Flowmeter Specification

## General:

The metering primary element shall be of the pressure differential producing type and sense true static pressure at the inlet and at the throat or cone. Flowmeters that measure the flow rate using any method besides measuring the static pressure change shall not be accepted. Also, flowmeters that use devices that amplify differential through change in direction of the flow at the cross-sections where inlet and/or throat static pressure is sensed shall not be accepted.

## Tube Design:

The inlet section that incorporates the high-pressure tap shall be a cylindrical section of the same diameter as the pipe. The low-pressure tap shall be installed in a throat section that shall be cylindrical for a minimum length of  $\frac{1}{2}$  of the throat diameter, or through a cone that is suspended in a cylindrical section the same diameter as the inlet section. If incorporating a throat section to develop the low-pressure signal, the outlet section shall have an included angle of 10 degrees or less. If incorporating a cone to develop the low-pressure signal, the outlet section shall be the same diameter as both the inlet and throat sections.

## Basic Materials:

The meter body shall be of cast iron per ASTM A 126, Grade B, 304 stainless steel or carbon steel that is coated with an epoxy that is approved for potable water service by NSF. The throat section or cone shall be 304 stainless steel per ASTM A 240. The meters shall have plain ends for sleeve- type coupling, grooved-ends for mechanical type couplings, or flanged ends per ANSI/AWWA C115/A21.15, or AWWA C207, Class D, as indicated in on the drawings.

## Meter Performance:

The accuracy of the flowmeter, installed per the manufacturer's recommendations, shall be +/- .50% of actual flow over a range of 10:1. Detailed data on the effects of upstream piping must be submitted and must be the result of tests performed on the meter design proposed by and fabricated by the manufacturer. Data taken from ASME or other organizations will not be considered responsive to this requirement and will be rejected. The fact that the manufacturer products can satisfy the specified accuracy must be substantiated by flow calibration data. A manufacturer's product will not be considered without this substantiating data.

## Acceptable Products:

The flow element shall be the V-Cone, as manufactured by McCrometer, or approved equal.