



Badger Meter Europa

Manhole flume

General

The Manhole flume is a low head loss, self-cleaning flow measurement device especially designed to easily fit into standard manholes.

No enlargement of the manhole riser or lid is necessary. The flume adapts to any standard waste water conveyance pipe. This flume allows accurate measurement over an unsurpassed flow range when compared to other inserts. The upstream approach and throat velocities significantly reduce solids deposition.



Due to the proportional head rise/flow rate characteristics for all Manhole flumes, the unit can be used in conjunction with a Badger Meter model iSonic 2000 ultrasonic flow meter to compute the flow rate.

Description

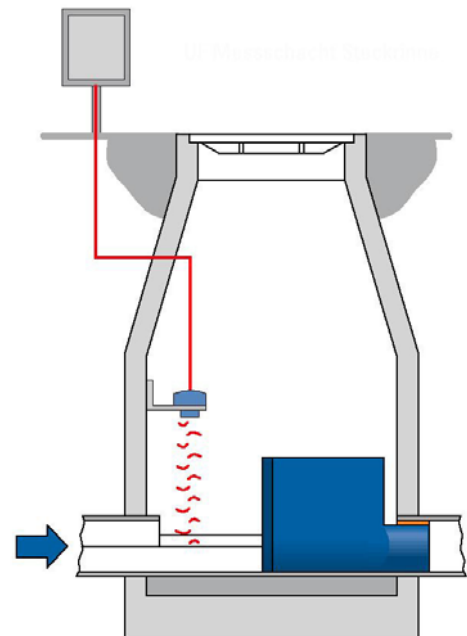
The Manhole flume is a variation of the Venturi concept designed for easy installation in standard manholes. Its fiberglass reinforced polyester construction, for long life and corrosion resistance, incorporates a low head trapezoidal design in conjunction with a hooded outlet collector and pipe spud. The hooded section, following the throat, prevents bypass leakage under normal flows, yet allows nearly unrestricted flows during emergency conditions. This minimizes the problems associated with other types of weirs or flumes during excessive flooding.

Calibration

The Manhole flume family exhibits reproducible head rise/flow characteristics throughout its size range. The flumes are characterized by the common equation: $Q = Kxh^n$.

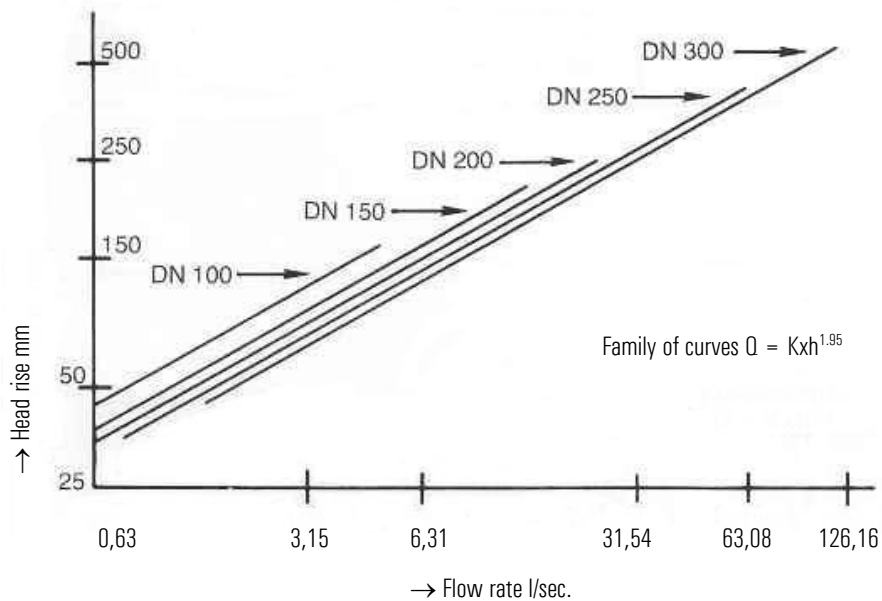
Sizing

Selection of a Manhole flume is dependent on manhole pipe size. Flumes are available for pipe sizes 100, 150, 200, 250 and 300 mm (4", 6", 8", 10" and 12") to accommodate a large percentage of metering applications. The flume's design allows accurate monitoring of extremely low flow while having excellent rangeability, much greater than other insert flumes.



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Manhole flume capacities



Dimensions

Manhole flume					
Ø mm	Length mm	Width mm	Weight kg	max. head rise mm	max. flow rate l/Sek.
100	447	192	1,8	148	5,68
150	492	246	3,6	226	16,66
200	613	326	5,4	312	35,35
250	729	396	7,7	395	63,18
300	851	477	10,8	457	94,39

Measuring point is one pipe diameter upstream from throat.

Installation procedure

1. The Manhole flume is inserted into the outlet pipe of the manhole and firmly pushed until the spud is tightly secured in the sewer pipe.
2. Level in both planes to assure the flume is plumb.
3. Seal around the spud to prevent leakage.
4. The flow transmitter is then mounted according to the manufacturer's recommendations. The head rise shall be measured approximately one pipe diameter upstream of the flume.
5. Those flumes without sufficient weight may experience flotation. Should this condition exist, simply secure the flume.
6. The device must be installed beyond the influence of any upstream control devices or fittings that can create unstable velocity profiles, turbulent, unsteady or "shooting" flow. The fluid velocity entering the primary element must be subcritical.

Badger Meter flow meters with Manhole flume and ultrasonic level meter iSonic 2000

