



## **Design of Domestic Bulk Supply Guidance Notes for Developers**

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## Purpose

This document is a guidance note for designers and developers of distribution mains, services and associated apparatus in the Affinity Water (AW) supply area.

It does not relieve designers or developers of their responsibility to ensure the new installations are adequately designed. It will guide designers to minimum standards and to preferences where these may exist.

It should not restrict innovation and all parties involved in delivery of the works are encouraged to contribute new ideas and offer challenges for improvement and cost benefit.

There is a presumption that the works will be undertaken in accordance with relevant national, international and industry standards together with any particular guidance or specification that may be issued by an approved supplier or manufacturer of network materials and equipment. All materials, fittings, appliances etc that form part of the permanent works will be subject to approval by Affinity Water.

## Scope

The document covers design considerations for works associated with the installation of metering apparatus for billing purposes at buildings comprising a number of discrete individual dwellings or premises. Typically, this will apply to blocks of flats or apartments, or to retail or light industrial developments where the supply is for domestic scale purposes only. Installations serving premises with particular needs, such as an industrial process are not covered.

## Guidance

### General

#### Definitions:

- Service pipe – the pipe that is or will be connected to a water main for purposes of supplying water to any premises.
- Communication pipe – that part of the service pipe that runs from the water main in the street (or future street) to the boundary of the street with the premises. The communication pipe is owned and maintained by Affinity Water.
- Supply pipe – that part of a service pipe which is not a communication pipe. In effect this is the section from the boundary of the street with the premises and the building. The supply pipe is owned and maintained by the customer.
- Metering installation – the arrangement of apparatus that distributes water from a single service pipe to the individual premises and which incorporates a water meter for each of the premises. The meter itself will be supplied and fitted by Affinity Water or its contractors.

There will be cases on larger developments where a meter will require installation downstream of the mains connection for leakage monitoring purposes. This will be established on a case-by-case basis by Affinity Water Asset Management as part of the hydraulic appraisal for the development.

### Location

For 12 premises or less in a single block (includes single individual units), – external location, unless there is a pressure problem that necessitates the installation of a booster pump by the developer, then internal location.

- Mounted in a proprietary buried multiple outlet manifold meter box, the preference being for any unit that is the subject of a framework supply agreement negotiated by Affinity Water.
- Preferably in publicly accessible land.
- Preferably in an unpaved surface.
- Not in a carriageway.
- Any planting near the metering installation will not hide or impede access to it, and the planting will be such that the root growth will not introduce a risk of damage to any of the components including the service pipe.

- At a depth consistent with the design of the meter box but in any event no greater than 750mm or less than 600mm depth of cover to the connecting service pipes.

For greater than 12 premises in a single block – internal location.

- In an area of common access, collectively mounted in a separate cupboard or enclosure.
- If the cupboard is to be locked then only with the same system in common usage for gas and electricity meters, preferably with standard FB2 locks.
- Or in a readily accessible area of a plant room.
- At a height no greater than 1500mm or no less than 300mm from the finished floor level to the meter sockets.
- In large properties, several metering installations in different locations may more effectively serve the layout, this is acceptable. A similar situation may prevail where the development incorporates an internal booster pump or break tank.

## Access

- External – (see above).
- Internal – by phone/intercom contact to a resident or janitor.

## Protection

- Temperature – all installations will be appropriately protected from the effects of prolonged frost conditions and from excessive heat so that ambient temperatures are no greater than 30°C.

## Contamination

- External – where ground investigations have indicated that there is a risk of the presence of chemicals such as hydrocarbons which can permeate polyethylene pipe then a proprietary barrier pipe system will be used for the service. The meter box and connections to it must be compatible with such a system and must maintain the barrier to ingress of such chemicals. Where such a box is not available as a proprietary unit then a chamber of concrete, brick, preformed units or other suitable material may be used to house an impermeable metering installation. Due regard should be given to ensuring that the cover is suitable for the surface loadings whilst minimising the weight to be lifted for access to the meters.

- Internal – the meter installation must be designed and located to avoid any risk of contamination from any chemicals which may be stored in the building or which may leak from pipes etc.

#### Damage

- In external below ground installations, the cover to the meter box will be of appropriate grade for the traffic to be encountered at surface level.
- Internal above ground installations will be sited so as to avoid the risk of damage from passing pedestrian traffic, falling objects etc or from vandalism.

## Communication Pipe

The communication pipe will be of a size to suit the hydraulic demand of the premises and will generally be polyethylene or polyethylene barrier PE80 SDR11, pressure rated at 12.5 bar.

## Meter Installation

- All materials in contact with potable water must comply with for the Water Supply (Water Quality) Regulations 2016 and the Water Supply (Water Fittings) Regulations 1999 as amended and reference should be made to the current list of Regulation 31 approved substances prepared by the Drinking Water Inspectorate.
- The manifold which distributes the supply to individual premises will be either a proprietary unit, or it will incorporate a proprietary meter carrier, all of metallic construction and designed for purpose. If the meter carrier option is used then the proposed assembly must be clearly detailed on a drawing or by construction of a physical sample to assure quality. The spacing between the centre points of meter sockets will be sufficient to enable easy installation and removal of the meter. The maximum plan dimension of the meter is not likely to exceed 105mm. The preference is that the manifold will be mounted such that the meter reading face is horizontal and uppermost with the barrel vertical, but it is recognised that this may not always be practicable. An automatic meter reading (AMR) unit will be positioned on top of the meter. There will need to be a minimum clearance of 200mm between the top of the meter and any other fixture including a door or lid. The meter and AMR unit measure 201mm from base to head.
- In sequential order from the inlet pipe, the installation will include an individual isolation valve, meter housing/socket, non return valve, drain point for each premise being supplied. The meter will be a standard, concentric format, provided under a framework supply agreement arranged by Affinity Water and requiring a socket that is G1½B threaded. No other meter will be permitted.

- The installation will include an isolation valve on the supply pipe close to the meter manifold to facilitate maintenance.

## Pressure

All elements of the metering installation will have a minimum working pressure rating of 12 bar.

## Identification

Meters will be clearly and permanently marked so that the premises to which they are connected are accurately identified to the properties which they are supplying. Durable proprietary marker plates firmly affixed to the inside of a meter box or to the inside wall of the building are preferred. The Developer-Customer will permanently mark up the individual supplies with the property number they are connected to in order for the team to accurately allocate meters to addresses.

## Lighting

If the meter installation is internal, and in an enclosure without natural lighting, then suitable artificial lighting is to be provided by the Developer-Customer and maintained by the property owners moving forward

## Responsibilities

Affinity Water:

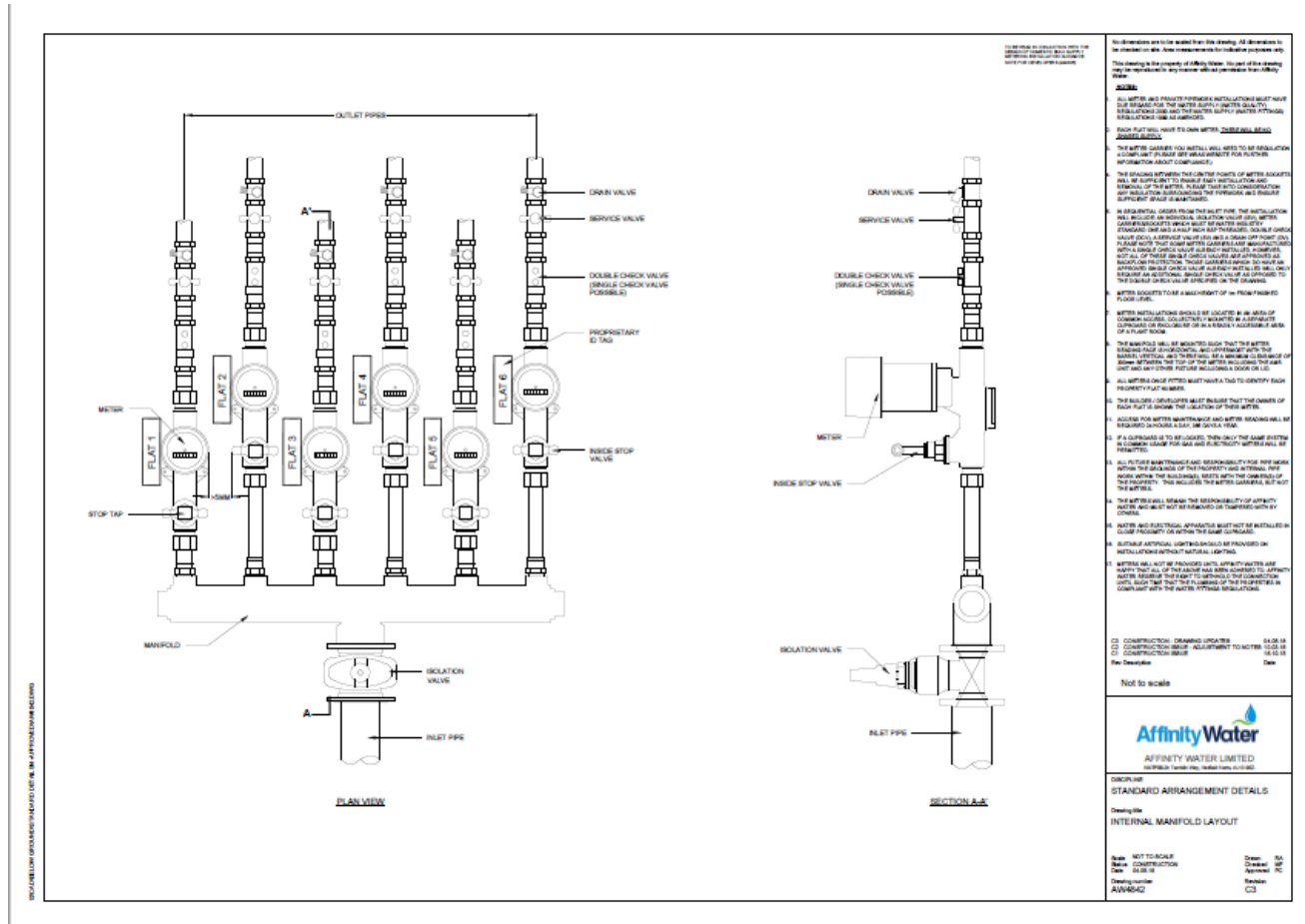
- will issue guidance, minimum standards and preferences for metering installations in new developments (this document);
- will establish framework agreements for supply of meters for fitting by Affinity Water or its contractors;
- will issue guidance for determining the correct meter for the particular development.
- will compile and instruct works specifications for developers and contractors; monitor the works to ensure compliance with instructions;
- establish, maintain, and manage systems to commission meters so that they are recording consumption as soon as the premises are being supplied with water.

The Developer or Contractor:

- will work to specifications instructed by Affinity Water when designing the development and instructing its contractors;

- will facilitate the works such that individual premises are supplied with water only after satisfactory construction and commissioning of the service pipe, the metering installation and internal plumbing, all of which may be subject to inspection and approval by Affinity Water;
- will provide plumbing drawings in sufficient detail to demonstrate compliance with Affinity Water's requirements.





## Related Documents

Drawing number AW4842-2015-01 - INTERNAL MANIFOLD