

SUB-METERING INFORMATION KIT

This kit provides general information regarding Urban Utilities' requirements for sub-metering

VERSION 4.2
May 2020

(Updates in version 4.2 includes minor typos regarding meter serial numbering)

Disclaimer: This information kit is intended for use as a guideline only, and must be read in conjunction with the most up to date SEQ codes and SEQ approved IPAM list, details of which can be found herein. It is the plumber's responsibility to ensure that the equipment chosen for sub-metering is approved for use by Urban Utilities within the Urban Utilities region. Non-approved equipment must be replaced at no cost to Urban Utilities.

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1. Introduction (UPDATED MAY 2020)

Sub-metering describes the metering of individual lots as properties within a Community Title Scheme (CTS) so that the customer as owner of each property is billed on the water consumption they actually use.

We require all new sub-metering and existing sub-metering infrastructure for billing purposes to comply with our sub-metering requirements.

All sub-meters will lead back to a common water connection at the CTS boundary, where the head meter will be located. The head meter measures the entire water volume consumed by the CTS at the Urban Utilities/customer infrastructure interface, whereas the sub-meters read the individual consumption within the customer property boundary of each CTS lot.

Generally there are two types of sub-metering:

1. Sub-metering of non-strata lots, such as town houses

These sub-meters are generally located in meter boxes in the ground with one dedicated to each individual property. If these meters are behind a gated premises they must have Automatic Meter Reading (AMR) technology acceptable to Urban Utilities installed to permit the reading of the meters from outside the premises. Refer to Chapter 5 of this information kit for more details; and

2. Sub-metering of strata lots, such as units/apartments

These sub-meters are usually installed in groups in a single cabinet on each individual floor of the building. These sub-meters also must be installed with an approved Automatic Meter Reading (AMR) technology, as approved on the IPAM list. Refer to Chapter 6 of this information kit for more details.

Technical Specification

For both installation of sub-meters in new CTS schemes and for retrofitting of sub-meters in existing CTS schemes, we require you to only install:

- Urban Utilities approved water meters with Urban Utilities serial numbers;
- Sub-meters that comply with Urban Utilities' underground/above ground installation arrangement guidelines, depending on the development proposed;
- Urban Utilities approved meter boxes for underground installation or an approved meter cabinet, where required, for overground installation;
- Urban Utilities approved valves and fittings;
- Sub-meters of the same make and model for each size of sub-meter installed within a complex;
- Approved AMR technology (where applicable).

Note: To view the current approved Urban Utilities infrastructure products and materials, please visit the SEQ Code website: <http://www.seqcode.com.au/products/> and click on the SEQ Accepted Civil IPAM List.


We are only responsible for the reliable operation of the physical sub-meter. The isolation valves connecting the sub-meter and all other associated plumbing are categorised as private plumbing under the Plumbing & Drainage Act 2002 and *Water Supply (Safety and Reliability Act) 2008*. As such, any water leakage on the private pipework (other than a leak from the meter itself) is the responsibility of the owner/body corporate to rectify at the owner/body corporate's cost.

2. Approved Meters & Sub-Meters (UPDATED MAY 2020)

Only Urban Utilities approved water meters must be installed in our service region. These meters must also have the Urban Utilities serial number on the meter.

Note: We will not accept on maintenance a sub-metering installation with non-approved meters or meters with incorrect serial numbers. Our current approved meter manufacturers and models are listed in Table 1 below, including pictures of the approved 20mm meters.

Table 1: Approved meter manufactures and products

Service size	Authorised manufacturers	Authorised products	Serial number format	Permitted	
				Above ground?	Below ground?
20mm 	Itron	TD8	Urban Utilities serial number format: ADB1700000	✓	✓
	Elster	V100	Urban Utilities serial number format: ABG1700000	✓	✗
	Elster	V200	Urban Utilities serial number format: ABH1700000	✓	✓
25mm	Itron	TD8	Urban Utilities serial number format: BDA1700000	✓	✓
	Elster	V100	Urban Utilities serial number format: BBG1700000	✓	✗
	Elster	V200	Urban Utilities serial number format: BBH1700000	✓	✓
32mm	Itron	TD8	Urban Utilities serial number format: HDA1700000	✓	✓
	Elster	V100	Urban Utilities serial number format: HBP1700000	✓	✓
	Elster	V200	Urban Utilities serial number format: HBH1700000	✓	✓
40mm	40mm meters not permitted for new installations			✗	✗
50+mm	Itron	Flostar M	Urban Utilities serial number (for 50mm): DDA1700000	✓	✓
	RMC	Octave	Urban Utilities serial number (for 50mm): DES1700000	✓	✓
	Sensus	Meistream Plus	Urban Utilities serial number (for 50mm): DCB1700000	✓	✓

3. Urban Utilities Serial Numbers for Water Sub-Meters

If the meter is purchased directly from an approved manufacturer and the buyer specifies that the meter is for Urban Utilities, the meter manufacturer will supply a meter with a Urban Utilities compliant serial number. However, it is the responsibility of the purchaser/installer to ensure that only meters with the correct serial numbers are installed within the Urban Utilities area. Installations that include meters with incorrect serial numbers will not be accepted on maintenance by Urban Utilities.

Our serial numbers consist of **10 Digits: three letters** at the start, followed by **seven numbers**.

The three letters represent the meter size, manufacturer and model of the meter respectively. The first two numbers represent the year of manufacture, with the remaining five numbers allocated by the manufacturer to indicate the production number. Table 2 identifies the codes for the different sizes, manufacturer makes and models.

Table 2: Urban Utilities serial number guide

First Letter = Size	Second Letter = Manufacturer	Third Letter = Model Version
A = 20mm	B = Elster	20mm meters:
B = 25mm	C = Sensus	Itron TD8 = B
C = 40mm (not permitted)	D = Itron	Elster V100 = G
		Elster V200 = H
D = 50mm	E = ARAD (RMC)	25-32mm meters
		Itron TD8 = A
		Elster V100 = P
E = 80mm		50+mm meters:
F = 100mm		Itron Flostar M = A
G = 150mm		Arad Octave (Stainless) = S
H = 32mm		Elster H5000 = H
		Sensus Meistream Plus = B

(Note: 65mm not permitted)

Examples:

Using the table above, you can use the serial number for all of our meter sizes and models to identify:

1. A **20mm Itron TD8** meter manufactured in **2019** will have the serial number of the type: **ADB1900001**. (The second meter from the manufacturer will have the serial number ADB1700002 etc.)
2. A **25mm Itron TD8** meter manufactured in **2016** will have the serial number of the type: **BDA1600001**.
3. A **20mm Elster V100** meter manufactured in **2016** will have the serial number **ABG1600001**.
4. A **25mm Elster V100** meter manufactured in **2017** will have the serial number **BBG1700001**.

4. Approved Meter Boxes (UPDATED MAY 2020)

Meter boxes are to be used when sub-meters are installed underground.

Note: Some plumbing outlets often sell meter boxes or pre-assembled meter assembly kits that are not approved by Urban Utilities for installation in our service region.

The customer must ensure the pre-assembled meter kit contains water meters that are Urban Utilities approved, and does not include a slip coupling connection. Slip coupling connections are not permitted for metering or sub-metering in our service region. Table 3 shows our approved meter boxes.

Table 3: Urban Utilities approved meter boxes

Service size	Meter Box Size	Authorised Products	Comments
20mm, 25mm	427mm x 267mm	Strongcast	Black Lid* with lettering "Water Meter"
20mm, 25mm	492mm x 271mm	Everhard Industries	Black Lid* with lettering "Water Meter"
20mm, 25mm	440mm x 275mm	Draper	Black Lid* with lettering "Water Meter"

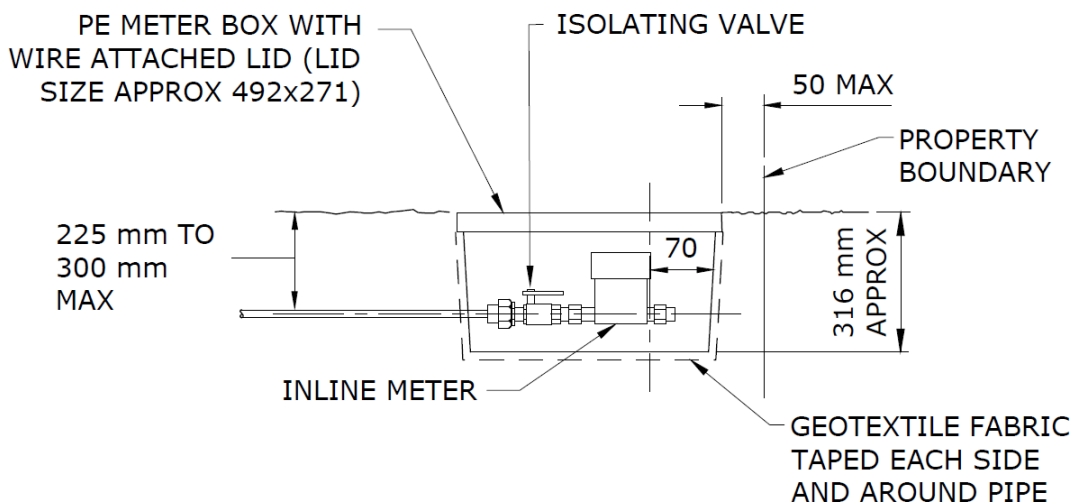
*Black is preferred but blue is also permitted. Green is NOT permitted.

5. General Arrangement for Buried 20mm and 25mm Sub-Meters

The following diagrams are an extract from the SEQ Code for in-ground meter installations. *Figure 1* below shows a typical meter box arrangement in the ground and the minimum clearances for a water meter in a meter box.

Note: you must position the water meter in the centre of the meter box's width, and the top of the meter box must be flush with the ground level. We will not accept on maintenance water meters which are buried deeper than shown in *Figure 1*. Incorrect installations must be rectified at the cost of the installer before they will be accepted on maintenance.

Figure 1: Typical meter box arrangement for 20mm and 25mm meters in meter boxes



Meter boxes must not be installed in walkways or other areas where they would cause a potential hazard. **Meter boxes are not permitted to be installed in driveways.** Meter box lids must have a non-slip pattern and must have 'Water Meter' written into the lid as part of the casting of the lid.

The water meter must have an isolation valve upstream of the meter. Optionally, a second isolation valve may also be fitted downstream of the meter. **Slip couplings are not permitted.** Some meter box manufacturers offer meter box kits which come pre-assembled with the meter, valves and meter box. An example of this is shown in *Figure 2* below.

Figure 2: Illustration of a pre-assembled meter kit and a buried meter box.

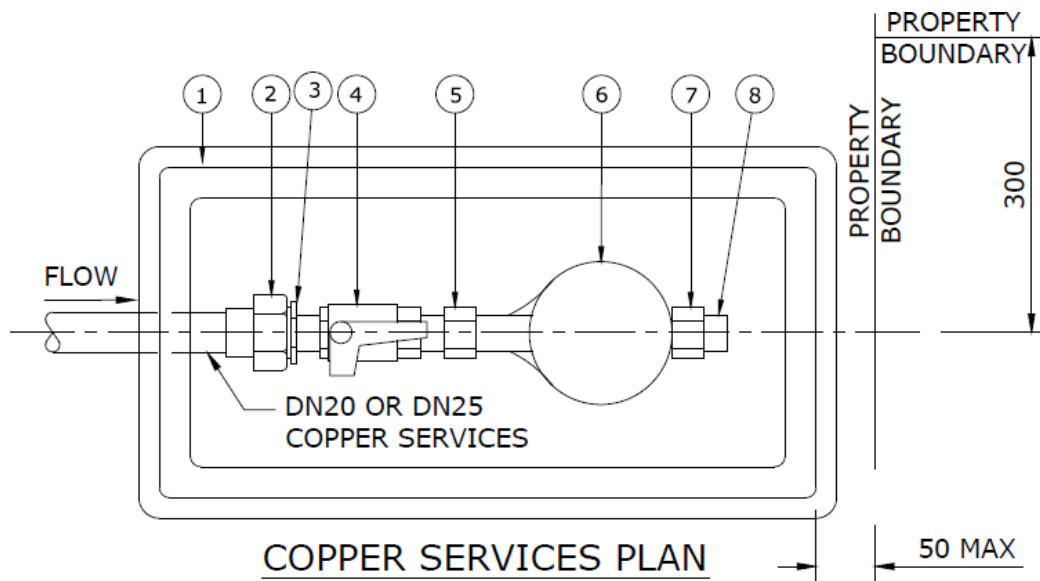


Note: The lid must be black or blue, but not green and have the words ‘Water Meter’ clearly displayed on the lid. (Pictures courtesy of Strongcast).

5.1 Meter Box Pipe Connections

We require all new pipe connections to use PE or copper pipe. *Figures 3, 4 and 5* below show the typical internal meter box connections for copper and PE services. All capillary joints must use lead-free solder (<0.1% lead) in accordance with AS3500.

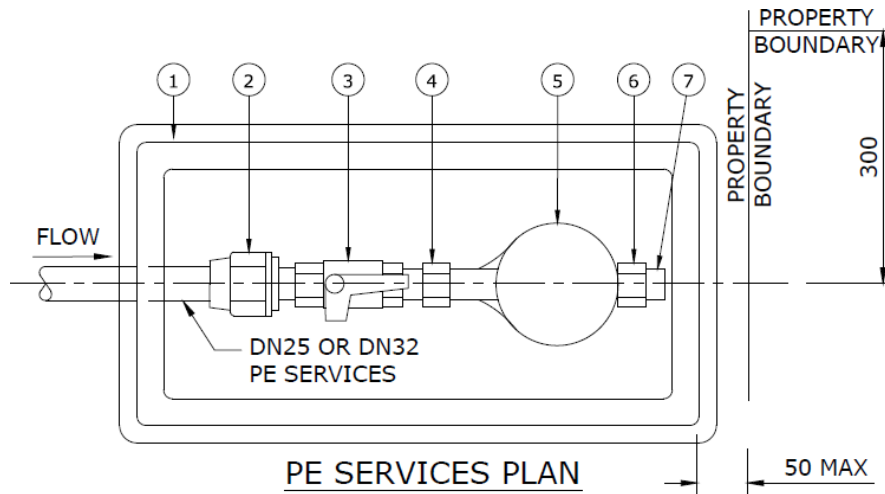
Figure 3: Meter and fittings for a copper service



FITTINGS REQUIRED FOR DN20 COPPER SERVICES	
ITEM No	DESCRIPTION
1	PE METER BOX WITH LID (APPROVED HDPE TYPE)
2	STRAIGHT CONNECTOR - 20mm CAPILLARY TO 3/4" BSP, F
3	NOT USED
4	DN20 BALL VALVE - 3/4" BSP, M-F
5	DN20 WATER METER COUPLING - 3/4" BSP, M TO 3/4" METER THREAD x 14 TPI, F
6	20mm INLINE WATER METER (APPROVED)
7	DN20 WATER METER COUPLING - 3/4" METER THREAD x 14 TPI, F TO 3/4" BSP, M
8	PLASTIC CAP

FITTINGS REQUIRED FOR DN25 COPPER SERVICES	
ITEM No	DESCRIPTION
1	PE METER BOX WITH LID (APPROVED HDPE TYPE)
2	STRAIGHT CONNECTOR - 25mm CAPILLARY TO 1" BSP, F
3	ADAPTOR - 1" BSP, M TO 3/4" BSP, F
4	DN20 BALL VALVE - 3/4" BSP, M-F
5	DN20 WATER METER COUPLING - 3/4" BSP, M TO 3/4" METER THREAD x 14 TPI, F
6	20mm INLINE WATER METER (APPROVED)
7	DN20 WATER METER COUPLING - 3/4" METER THREAD x 14 TPI, F TO 3/4" BSP, M
8	PLASTIC CAP

Figure 4: Urban Utilities Approved Water Meter and PE compression fittings for PE Connection.
(PE fittings connecting to Brass shall be MALE thread only)

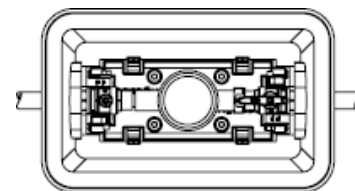


FITTINGS REQUIRED FOR DN25 PE SERVICES	
ITEM No	DESCRIPTION
1	PE METER BOX WITH LID (APPROVED HDPE TYPE)
2	PE ADAPTOR - DN25 COMPRESSION TO 3/4" BSP, M
3	DN20 BALL VALVE - 3/4" BSP, F-F
4	DN20 WATER METER COUPLING - 3/4" BSP, M TO 3/4" METER THREAD x 14 TPI, F
5	20mm INLINE WATER METER (APPROVED)
6	DN20 WATER METER COUPLING - 3/4" METER THREAD x 14 TPI, F TO 3/4" BSP, M
7	PLASTIC CAP

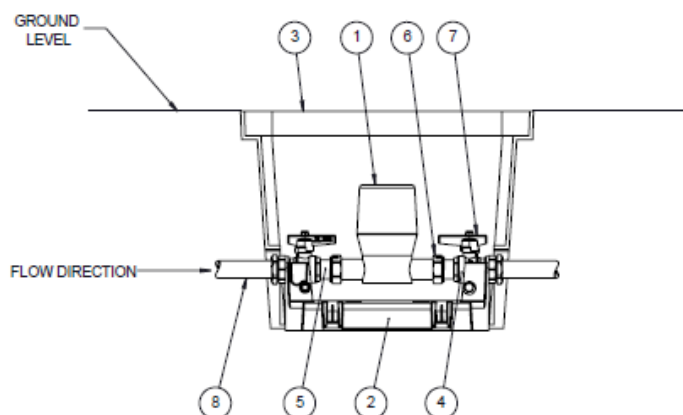
FITTINGS REQUIRED FOR DN32 PE SERVICES	
ITEM No	DESCRIPTION
1	PE METER BOX WITH LID (APPROVED HDPE TYPE)
2	PE ADAPTOR - DN32 COMPRESSION TO 3/4" BSP, M
3	DN20 BALL VALVE - 3/4" BSP, F-F
4	DN20 WATER METER COUPLING - 3/4" BSP, M TO 3/4" METER THREAD x 14 TPI, F
5	20mm INLINE WATER METER (APPROVED)
6	DN20 WATER METER COUPLING - 3/4" METER THREAD x 14 TPI, F TO 3/4" BSP, M
7	PLASTIC CAP

Figure 5: Urban Utilities Approved Water Meter with 2x DN20 isolation ball valves and with integrated PE compression unions for 25mm PE pipe

ITEM NO.	Infinity Part Number	Part Description	QTY.
1	-	DN20 WATER METER	1
2	15178-110	MOULDED METER BRACKET BASE	1
3	-	CONVENTIONAL TAPER OR METER BOX	1
4	-	DOWNSTREAM ISOLATION BALL VALVE	1
5	-	25MM INTEGRATED PE COMPRESSION UNION	1
6	-	14TPO INTEGRATED FINE THREAD COUPLING	1
7	-	BRASS HANDLE NON-LOCKABLE ACCERTED	1
8	-	DN25 PE PIPE	2



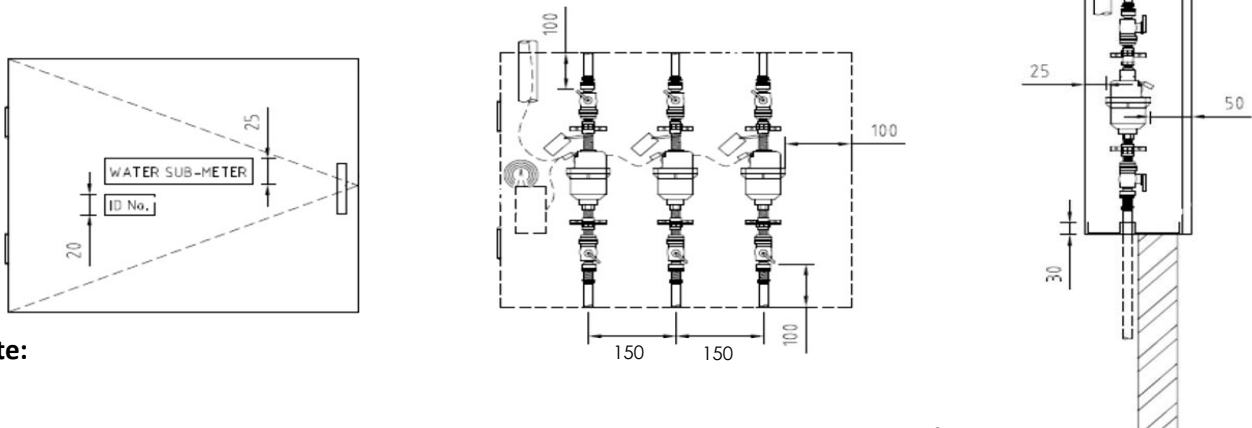
Figures 3 and 4 are extracts from SEQ Code Water Supply Standard Drawings. Please check online at: <http://www.seqcode.com.au/seq-water-supply-code/> for the latest versions.



6. General Arrangements for Above-Ground Sub-Meters (UPDATED MAY 2020)

Figure 6 shows the typical installation of unit/apartment sub-meters.

Figure 6: Typical arrangement of sub-meters in a cabinet.



Note:

- All above ground sub-meters must have isolation valves upstream and downstream of the meter and the arrangement must be fitted to the wall using an approved sub-meter assembly.
- **Slip couplings are not permitted** in the sub-meter arrangement.
- There must be a **minimum 150mm gap**, perpendicular to the direction of the pipes, **between the centrelines of the sub-meters**.
- There must be a **minimum 100mm gap** between the outermost valves and the edges of the cupboard.
- Meters must not be installed with the dial face upside down.
- Preference is for meters to be orientated in vertical banks rather than horizontal banks.
- All sub-meters must be individually tagged to associate each sub-meter to its corresponding lot or apartment/unit. We recommend you attach a metal tag etched with the unit number to the pipe (before the meter) with a stainless steel wire.
- If the cupboard/cabinet also houses fire hose reels, the fire rating required must not be compromised and the fire hose reel installation must be compliant with all applicable legislation and standards.
- All sub-meters must be easily accessible and readable from floor level of the common property in the CTS, unassisted by a ladder or other equipment. **MAXIMUM HEIGHT** permitted from floor level to the higher of either the centreline of sub-meters or the top of the sub-metering assembly is **1.6m**.
- Sub-meters must be installed in a manner that ensures the safety of those who will access them. You will need to
 - not position water meters in a cupboard that is classifiable as a confined space.
 - ensure access and adequate ventilation in utility rooms.
 - leave a minimum of two square metres in front of the cupboard as free working space.
 - ensure adequate lighting is made available during daylight hours.
 - allow sufficient room for cupboard door(s) to swing open completely and make provision for the doors to be held open.
 - ensure the cupboard has a minimum 100mm bund at the opening (if located inside a building).
 - ensure **cupboard is sufficiently watertight and drained** to prevent seepage into the surrounding building structure in the event of a leak.
 - ensure lockable cupboards, if used, are lockable with an AMR Key only, which is a C4 key cut to 34284.
- Sub-meters must be encased in a cabinet that is identifiable with the words "Water Sub-meter" or "Water Sub-meters" as applicable, in a readable and permanent print on the cupboard/cabinet door.

Above ground sub-meters may be installed without a cupboard/cabinet where they are securely fixed to a solid wall and in a location where seepage from maintenance activities or failures will not cause any damage, for example, external walls and basement car parks. In this case, the sub-meters must not present a safety hazard or be in a location where they are likely to be damaged by vehicular traffic.

7. Approved Isolation Valves (UPDATED MAY 2020)

Our IPAM list identifies our approved isolation valves you are permitted to use. A full list of approved products, including valves is available in the SEQ Civil IPAM list, which can be found here:

<http://www.seqcode.com.au/products/> and click on the “SEQ Accepted Civil IPAM List” PDF.

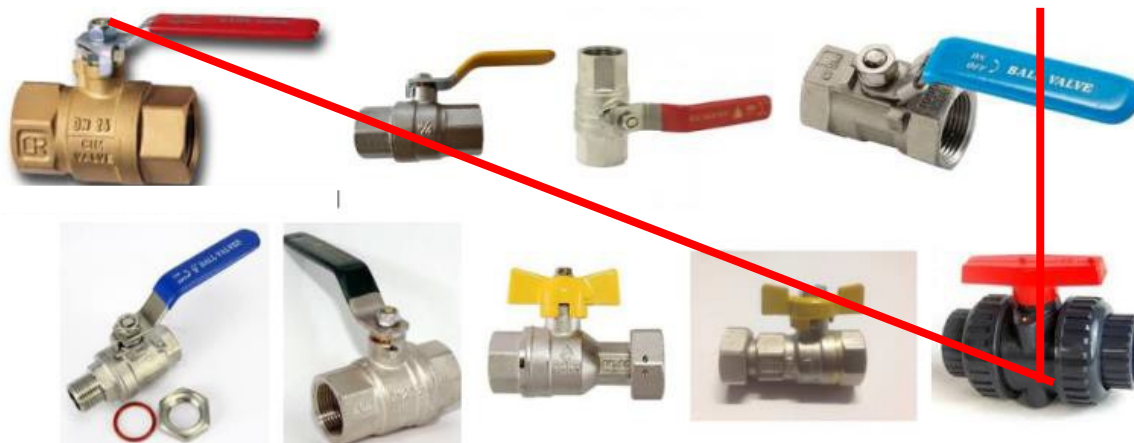
7.1 Isolation Ball Valves 20mm - 25mm

Only ball valve bodies and handles made from copper Alloy (BRASS) may be used and valves must be WaterMarked. Key locks are not permitted. Valves are not required to be lockable.

Figure 7: Urban Utilities approved valves



Figure 8: Examples of non-approved ball valves



7.2 Isolation Ball Valves 32mm - 40mm

- Ball valves shall be DR brass or SS body and handle and comply with WSA PS – 274, having product certification to AS 4796.
- Not required to be lockable.

7.3 Isolation Gate Valves 50mm - 200mm

- Flange connections to valves 50mm or greater in size.
- Not required to be lockable.

8. Automatic Meter Reading

To ensure the water meter can be read at any time, we require an Automatic Meter Reading (AMR) system to be installed where:

- the sub-meter is not physically accessible and able to be read from ground level, **or**
- the meter reader does not have 24-hour access to the premises without needing security access keys.

This is almost always the case with sub-metered individual lots that are situated within a gated premises and with units and apartment complexes where there are multiple levels of sub-meters. You may use wired or wireless AMR systems, as available from approved AMR suppliers.

8.1 AMR for Sub-Metered Townhouses

These sub-meters are generally located in meter boxes in the ground with one dedicated meter box for each individual lot/property. If the sub-meters are within a gated premises they must have an AMR technology installed to permit the reading of the meters from outside the premises by the meter reader. The approved technology for this application is the *Itron Everblu Cyble*, as shown in *Figure 9*.

Figure 9: Itron TD8 water meter with Everblu Cyble attached



8.2 AMR for Sub-Metered Apartment Blocks

Sub-meters in apartment blocks are usually installed together in a single cupboard/cabinet on each individual floor of the building. These sub-meters must be linked up to an approved AMR system. Each approved AMR supplier has a nominated installer which we have approved to install the AMR. We will not accept on maintenance any systems installed by a non-approved AMR installer. Our approved AMR providers, who can advise on approved AMR installers, are:

- **Itron Everblu**
- **SUMS Vivid** (formerly Watersave Australia) – only reed switches supplied by the approved meter manufacturer to be used
- **Halytech Spider** – only reed switches supplied by the approved meter manufacturer to be used

Note: The list is subject to change. For confirmation, please check the Civil IPAM list. This can be found online at <http://www.seqcode.com.au/products/> - click on the SEQ Accepted Civil IPAM List PDF.

Notes for AMR in apartment blocks:

- The head meter (also known as the master meter) must also be connected to the AMR reader. You must make provision to run communications cable from the location of the master meter to the AMR system.
- The cold water feed to a communal hot water system must be metered and connected to the AMR system.
- The AMR control unit must be hard wired 240V or use a Lockable GPO (i.e. a standard GPO is not accepted).
- If the AMR panel or the master meter is in a room at the front of the building the door must be locked with an AMR key, which is a C4 key cut to 34284.
- The AMR system must be commissioned by the installer approved by the AMR supplier. The commissioning certificate must be signed off by the AMR installer, the relevant council inspector and by Urban Utilities.
- Installers of new AMR systems must provide a five year warranty for the installation in favour of Urban Utilities.

9. AMR Electrical As-Constructed Document Handover (UPDATED MAY 2020)

9.1 Hard Wired AMR

As-constructed layout drawings must include the following details:

- Conduit material, colour and size
- Identify inspection boxes and junctions
- Plans highlighting location of meter reading panel (wall or cupboard/cabinet)
- Wiring diagram detailing the meters connection at AMR meter reading panel
- The floor plan must show the meter position on high-rises and the location of the cabling in relation to other services in the ducting.

9.2 Wireless AMR

As-constructed drawings for wireless AMR systems must include:

- Meter reading master panel position (wall or cupboard/cabinet)
- Elevation and plan drawings highlighting the location of the wireless repeaters and transponders in the building
- The floor plan must show the meter position on high-rises and the location of the wireless transmitters for the sub-meters/groups of sub-meters on each floor.

To ensure your as-constructed drawing is reviewed in a timely manner, it is important to include all critical information. Table 4 provides an example of a sub-meter table (to be submitted with the as-constructed drawings).

Additionally an AMR supplier must complete the AMR commissioning checklist in Section 10 on Pages 13 and 14 of this information kit.

Table 4: Sub-meter table example

Sub-meter table for 23 Street, Suburb 4169 - Plumbing App No 000000					
Serial Number	Unit #	Meter Location	Installation Date	Meter Reading - installation (kL)	Meter reading - end of construction (kL)
FEB 1700042	Master meter	Left hand side of driveway front boundary	20/1/2017	00223	318
ADB 1733334	Unit 1	Path box right hand side of pedestrian entry	20/1/2017	000021	35
ADB 1733317	Unit 2	Path box Left hand side of pedestrian entry	20/1/2017	000022	49
ADB 1733365	Unit 3	Path box right hand side of pedestrian entry	20/1/2017	000022	60
ADB 1733333	Unit 4	Path box right hand side of pedestrian entry	20/1/2017	000001	57
DDA 1700901	Hot water	Roof area next to hot water plant	27/1/2017	000105	117

10. AMR COMMISSIONING CHECKLIST (UPDATED MAY 2020) (TO BE COMPLETED BY APPROVED AMR INSTALLER)

SITE NAME & ADDRESS:		
CLIENT:		
INSTALLATION DATE:		
INSTALLER NAME:		
PLUMBING APPROVAL NUMBER:		
AMR COMMISSIONED BY:		
AMR SUPPLIER NAME:		
PROJECT PLAN CREATED: (Y/N)		
	WIRELESS	
WIRELESS - RF TRANSMITTER TYPES AND FREQUENCY BAND:		
COMMUNICATION LINE	HARDWIRED	
COMMUNICATION LINE NUMBER OR IP ADDRESS:		
HARD WIRED 240V POWER (OR LOCKABLE GPO) TO DCU:		
BATTERY LIFE:		
C4 KEY WAY CUT TO 34284: (Y/N)		

PRODUCT DETAILS COMPLETED

AS CONSTRUCTED DRAWINGS ATTACHED SCHEMATIC:		
CONNECTIVITY AUDIT SHEET ATTACHED:		
METER NUMBERS AND READINGS RECORDED AND PROVIDED:		
PRODUCT DETAILS COMPLETED DATE:		
METERS CONNECTED:	QUANTITY:	
INITIAL METER READINGS AND ID'S PROGRAMMED:		
TAP TEST TO EACH METER COMPLETED:		

60 MONTH DEFECT LIABILITY WARRANTY START DATE:	
DEFECTS LIABILITY SERVICE REQUEST PHONE NUMBER:	
SIGNED – AMR INSTALLER	
NAME:	
POSITION:	
DATE:	

SIGNED - URBAN UTILITIES:	
REPRESENTATIVE NAME - URBAN UTILITIES:	
POSITION:	
DATE:	

APPLICABLE LOCAL GOVERNMENT AUTHORITY	
SIGNED - LOCAL GOVERNMENT AUTHORITY:	
REPRESENTATIVE NAME - LOCAL GOVERNMENT AUTHORITY:	
POSITION:	
DATE:	

You can email any enquiries and your commissioning certificates to amr@urbanutilities.com.au