

Technical Solution Sheet 5.03

5: Cold Water Plumbing

Drawings of Typical Water and Fire Services, Pipe Materials and Private Service

AIM

The aim of this technical solution is to inform practitioners on the typical requirements for construction of property water service and metering arrangements.

PLUMBING REGULATIONS 2008

The *Plumbing Code of Australia* (PCA) is adopted by and forms part of the *Plumbing Regulations 2008*. Part B1 of the PCA specifies the objectives and performance requirements related to the installation of cold water services. [AS/NZS 3500.1: Plumbing and drainage Part 1: Water services](#), is a “deemed to satisfy” document listed in Part B1 of the PCA and contains sections on “Materials and products” and “Fire services” and “Installation of water meters”.

DRAWINGS OF TYPICAL WATER AND FIRE SERVICES

The notes and drawings in this technical solution (Figures 1, 2, 3, 4 and 5) are typical for the property water service from the authority water main up to and including the meter assembly, or to the control valve where no meter is required.

The drawings have been prepared in conjunction with various water authorities to assist in achieving uniformity throughout the state. It should be noted that the drawings are “typical connections” and do not take away the water authority’s right to prescribe any special conditions of connection.

The policy for water metering and servicing, the provision of support for the service assemblies, metered or not metered, remains with the water authority.

Water Metering and Servicing Guidelines have been introduced by metropolitan Melbourne’s three water retail businesses to provide consistency across the metropolitan Melbourne area. The guidelines apply in the areas serviced by City West Water, South East Water and Yarra Valley Water.

For further information refer to the relevant websites:

City West Water www.citywestwater.com.au

South East Water www.sewl.com.au

Yarra Valley Water www.yvw.com.au

PIPE MATERIALS FOR A PROPERTY SERVICE AND PRIVATE FIRE SERVICE

Water Authorities in prescribing their Conditions of Connection for either a Property Service or a Private Fire Service to a water main, may or may not prescribe the material from which either service is to be constructed.

The following materials are examples of materials permitted to be both used out in the roadway and inside the property. Please note that other pipe materials may be used on both services, inside the property boundary and after the water meter or control valves.

Technical Solution Sheet 5.03

Property Service (Water main to meter outlet)
 two pipe materials permitted and most commonly used are copper and polyethylene. The minimum size of a property service in Copper Tube is DN 20 and in Polyethylene Pipe DN25.

- Copper tube must be manufactured to [AS 1432 Copper tubes for plumbing, gasfitting and drainage applications](#). Either Type A or Type B tube must be used.
- Polyethylene pipe must be manufactured to [AS/NZS 4130 Polyethylene \(PE\) pipes for pressure applications](#).










- Series 1 pipe of either PE Compound PE 80, or PE 100 and having a nominal pressure rating of at least PN 12.5 must be used (see Figure 6).

Private Fire Service (Water main to outlet of valves at or near property boundary)

Two pipe materials permitted and most commonly used for private fire services are copper tube and ductile iron.

- Copper Tube must be manufactured to [AS 1432 Copper tubes for plumbing, gas fitting and drainage applications](#). Either Type A or Type B tube must be used.
- Ductile iron must be manufactured to [AS/NZS 2280: Ductile irons pipe and fittings](#).

LEGEND

	V.	=	Valve		L.S.	=	Line Strainer
	M.	=	Meter		B.P.D.	=	Backflow Prevention Device (Testable or Non-Testable)
	D.B.	=	Dirt Box		S.C.V.	=	Single Check Valve
	S.P.	=	Straight Piece		D.C.V.	=	Detector Check Valve
	T.F.	=	Testing Ferrule				

Technical Solution Sheet 5.03

FIGURE 1 – GENERAL WATER SERVICE – LOW HAZARD (RESIDENTIAL / COMMERCIAL INDUSTRIAL) TYPICAL ARRANGEMENT

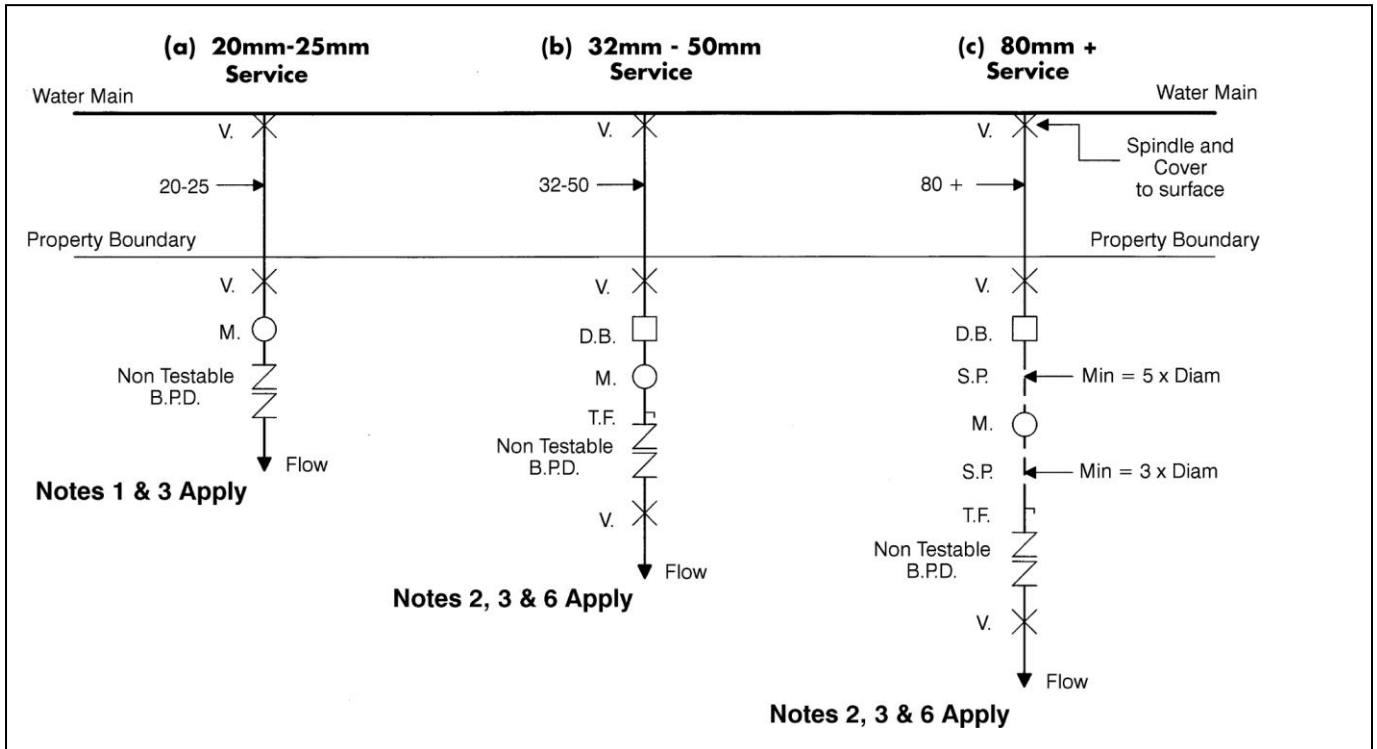
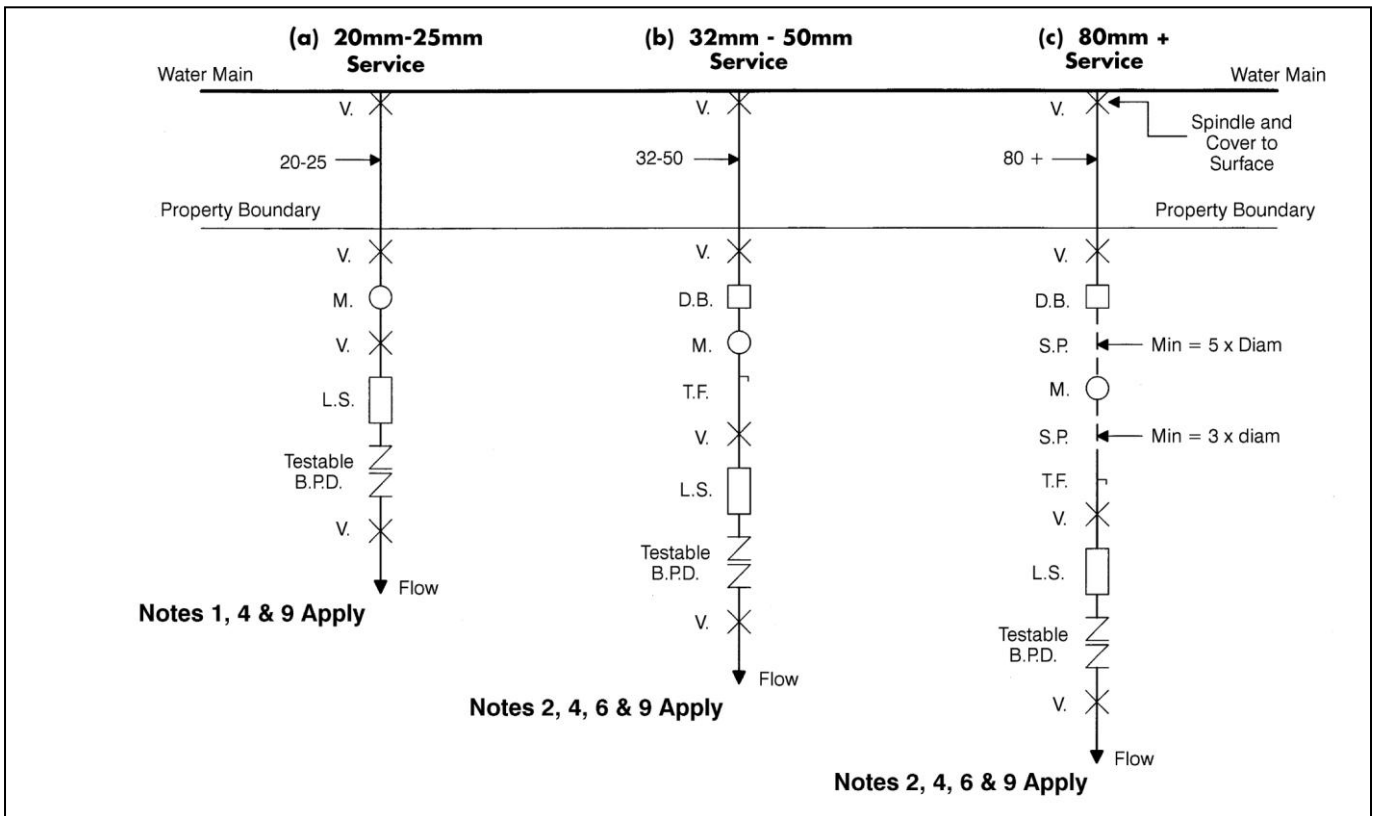


FIGURE 2 – GENERAL WATER SERVICE – MEDIUM / HIGH HAZARD (COMMERCIAL INDUSTRIAL) TYPICAL ARRANGEMENT



Technical Solution Sheet 5.03

FIGURE 3 – FIRE AND GENERAL SERVICES TYPICAL ARRANGEMENT

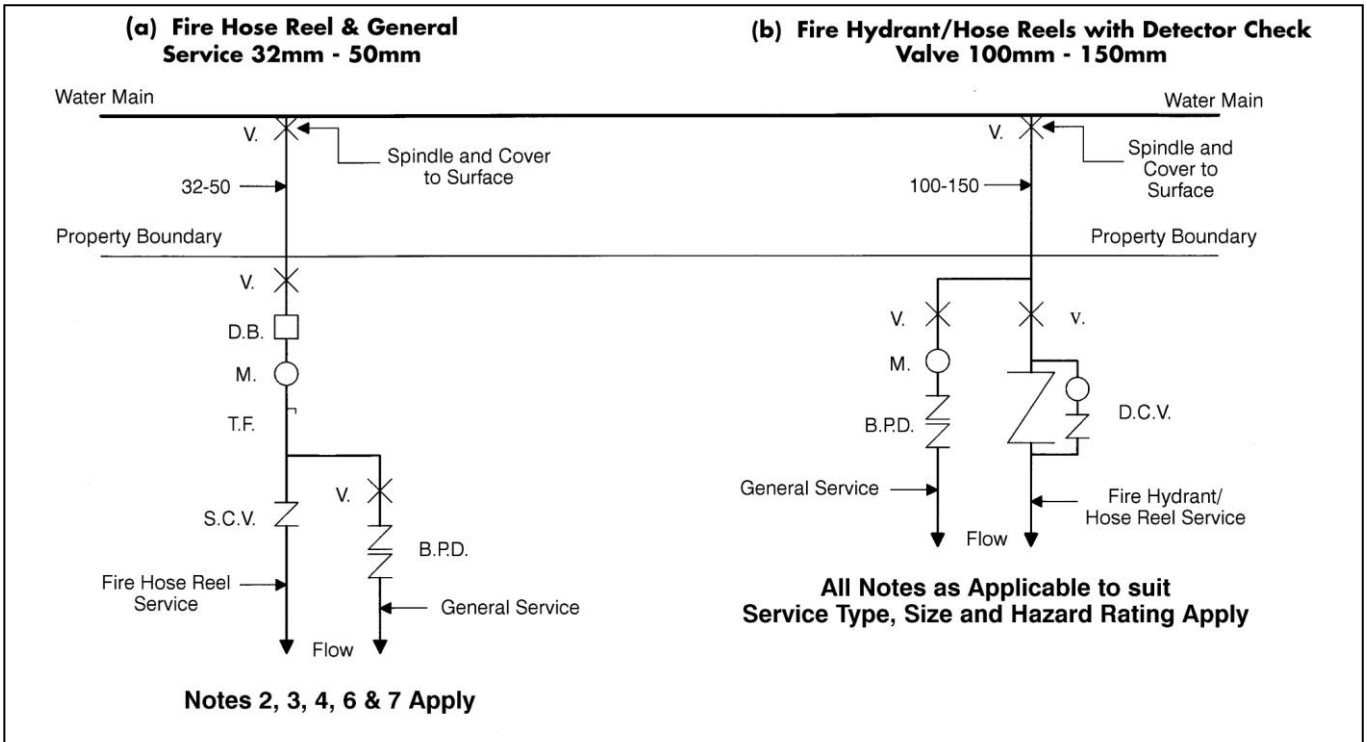
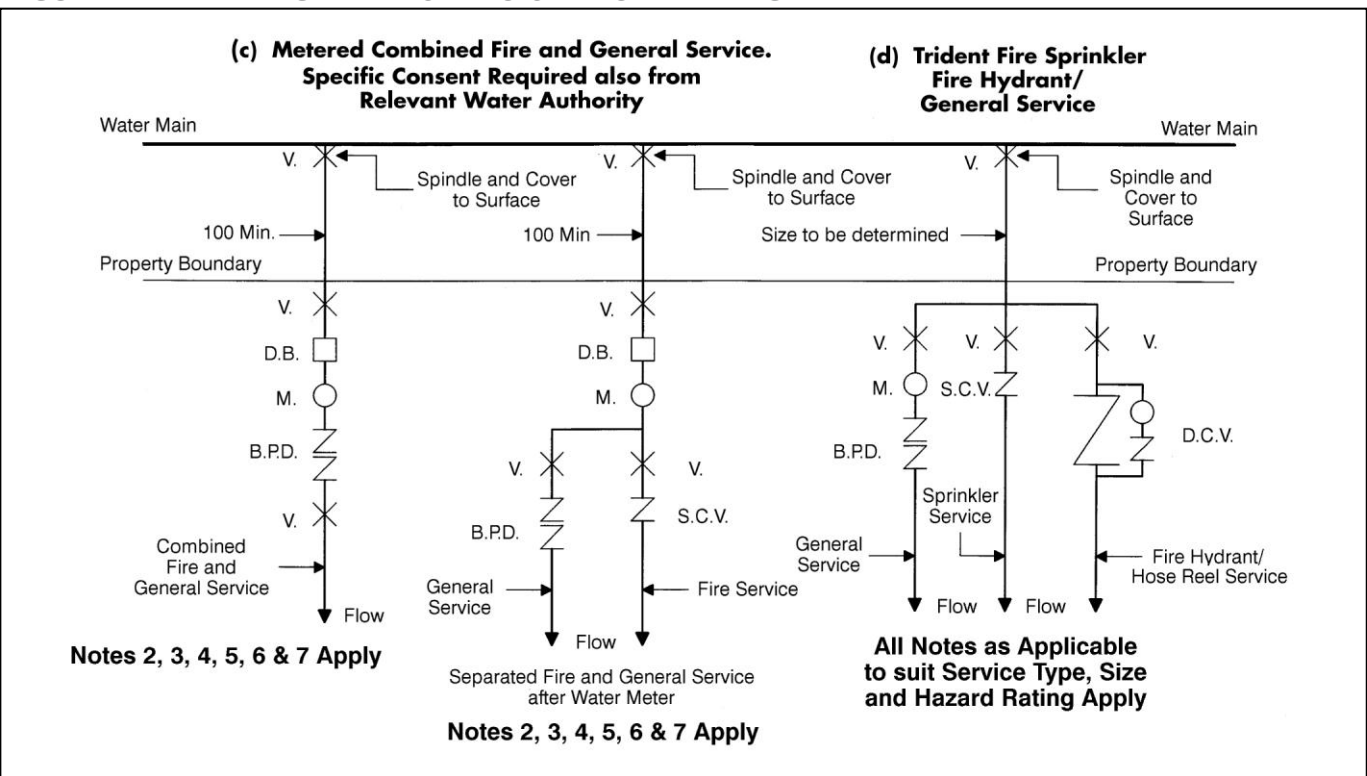


FIGURE 4 – FIRE AND GENERAL SERVICES TYPICAL ARRANGEMENT



Technical Solution Sheet 5.03

FIGURE 5 – FIRE AND GENERAL SERVICES TYPICAL ARRANGEMENT

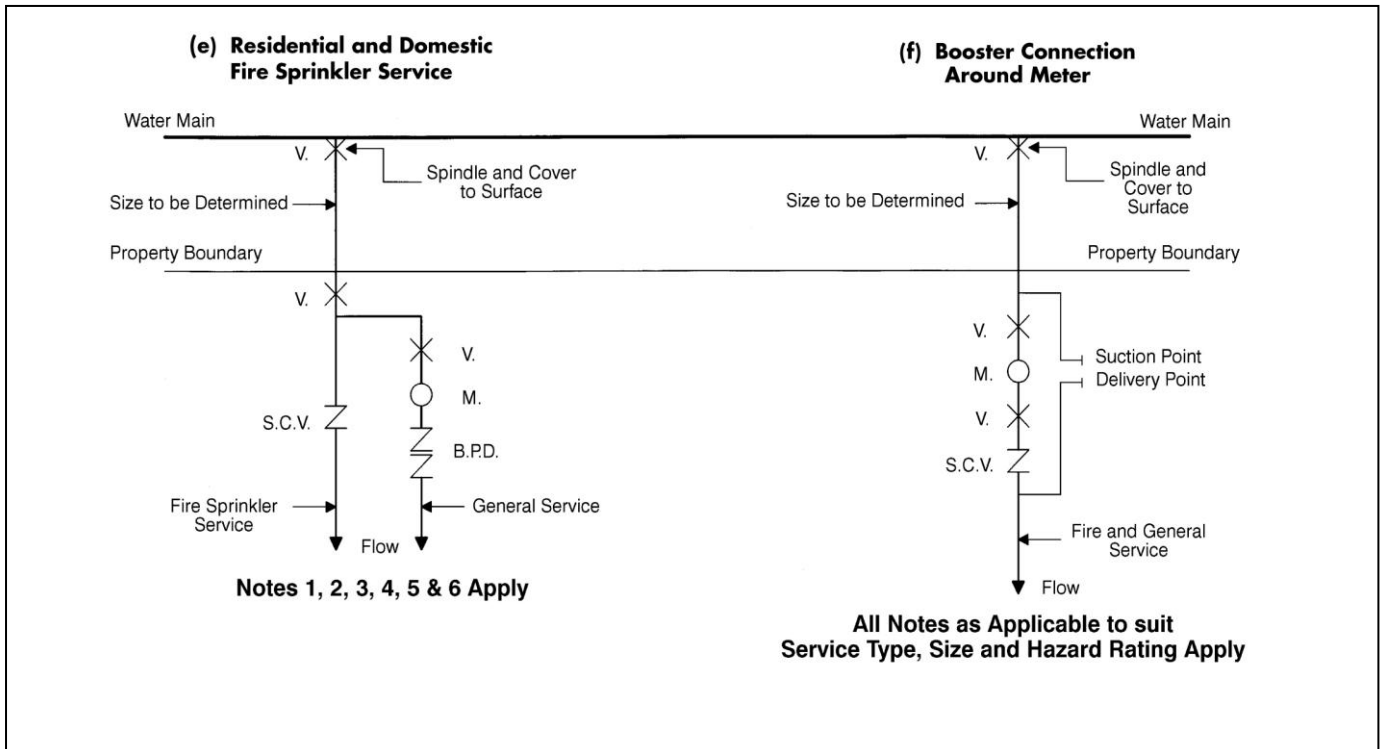
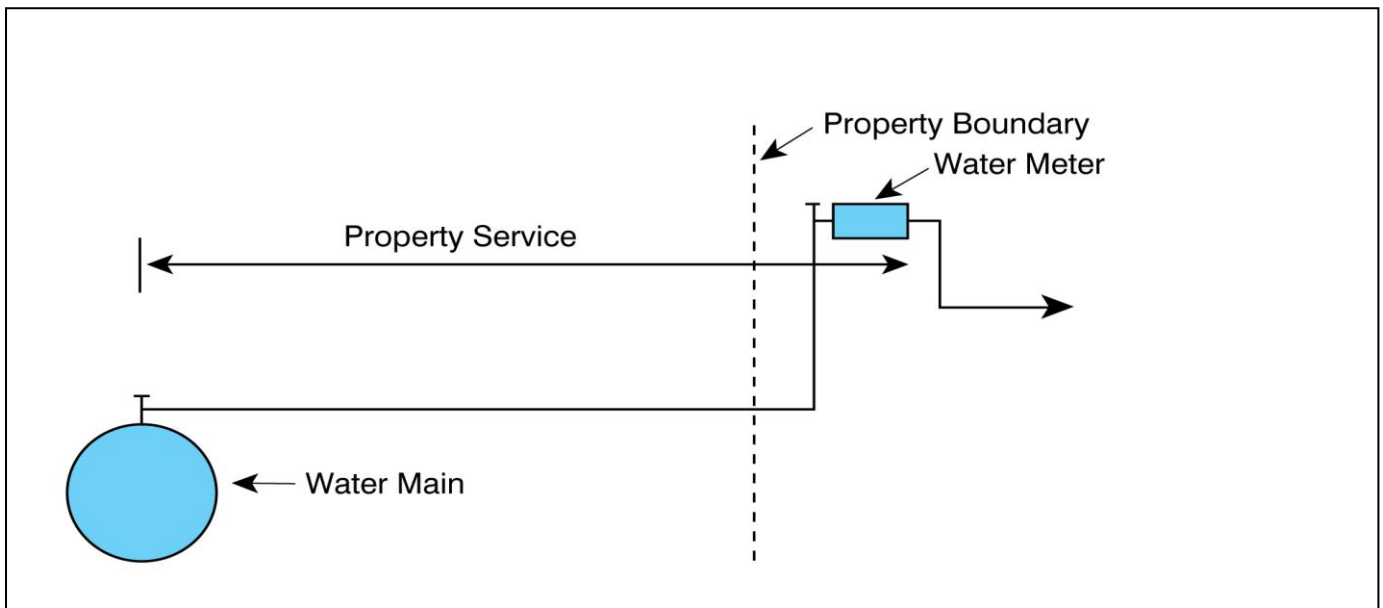


FIGURE 6 – TYPICAL PROPERTY SERVICE



Technical Solution Sheet 5.03

Notes:

Note	Description
1	For 20-25 Services, most authorities require a Ball Valve at the water meter. Some non-metro Water Authorities, in low pressure areas, may permit a stop valve with a loose jumper valve.
2	For 32+ Services, Gate Valve at Meter. The requirement to fit a dirt box may be optional with some non-metro Water Authorities in low pressure areas.
3	For a "Low Hazard" rating most Authorities require Containment Protection. The requirement to fit a Non-Testable Backflow Prevention Device may be optional with some non-metro Water Authorities in low pressure areas.
4	For "Medium and High Hazard" ratings, Containment Protection is mandatory.
5	Arrangement of valves to suit as per General Service Size and applicable "Hazard Rating".
6	The threaded outlet of any Testing Ferrule must be "capped or plugged".
7	Double Check Valves may need to be fitted as "Zone Protection" on Fire Service Hose Reels. Refer Appendix F of AS/NZS 3500.1.
8	The fitting of a Single Check Valve or a Backflow Prevention Device on the metered by-pass of a Detector Check Valve may be required by the Water Authority. Note: Unprotected by-passes must not be installed around backflow prevention devices.
9	Where testable Backflow Prevention Devices are required, the isolating valve shown immediately upstream of the line strainer and immediately downstream of the device, must have resilient seating.