

Hamilton City Development Manual		
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SECTION E : VALVE AND FIRE HYDRANT INSTALLATION

1.0 INTRODUCTION

All watermain pipe laying and associated fitting installation shall only be carried out by a qualified Water Service Person holding the qualification of National Certificate in Water Reticulation.

2.0 SCOPE

This specification covers the maintenance of valves and fire hydrants as well as the installation of valve and fire hydrant boxes within the Hamilton City Council water reticulation system.

3.0 MATERIALS

Acceptable materials are listed in Section A of this Specification.

Materials to be used include Councils proprietary cast iron or aluminium and concrete components, as detailed on Drawing No's TS607, TS609 and TS611 to TS618 inclusive.

Only cast iron boxes shall be used in carriageways.

4.0 MAINTENANCE

Wherever possible, routine maintenance shall be carried out on the valve or hydrant at the time of rebuilding the surrounding box. Such work shall be approved by Council prior to commencement of the work.

Any defects or damage to the fitting shall be reported to Council immediately so that the necessary remedial action can be carried out while the Contractor is on site (wherever possible).

Maintenance that cannot be carried out immediately shall be referred to Council.

5.0 INSTALLATION OF VALVES

Preferably valves should be installed outside of the sealed carriageway in the grass berm. Valves shall be installed in the pipeline at the minimum cover depth of the pipeline.

Location	Principal Watermains	Ridermains
grass berms & footpaths	750mm depth to top of pipe	500mm
under carriageways	900 mm	600mm

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Preferably valves shall be installed next to other fittings such as tees or bends. Where the valve is fitted to the branch of a tee it shall be flanged unless this results in the valve being in the carriageway, in which case spigot ended valves connected to adjoining pipes with gibaults is the acceptable alternative. Spigot ended valves shall be secured to anchor blocks conservatively sized to resist any unequal hydraulic thrust forces arising from closing and opening the valve.

6.0 INSTALLATION OF FIRE HYDRANTS

The preferred location for hydrants is in the road berm rather than the carriageway.

Generally they should be installed in the centre of property to avoid driveways.

Hydrant risers shall be used, or the watermain laid deeper, where necessary to ensure the top of the spindle is between 50 & 200mm below the fire hydrant lid.

7.0 INSTALLATION OF VALVE & HYDRANT BOXES

7.1 Berm areas (includes installations in the road berm) - shall be in accordance with Drawing No's TS623 and TS624 and Clause 5.4 : Section B of this Specification. At least one, but no more than 3, cast iron packers shall be used in any one installation.

Backfill and reinstatement shall be in accordance with Section 13.0 of Part 3 (Roading) of this Volume.

7.2 Carriageway Areas - shall include all streets and shall be in accordance with Drawing No's TS623 and TS624 and with the following:

- a) No more than 3 cast iron packers shall be used in any one installation.
- b) The base shall be well compacted and properly levelled prior to installation of the concrete surrounds.
- c) The edge of the excavation shall be saw cut to provide a neat, clean edge for reinstatement.
- d) Backfill and reinstatement shall be in accordance with Part 3 - Roading Projects Technical Specification, except that backfill shall be as per Drawing No. TS623 and TS624.

7.3 The valve or hydrant box is to be installed parallel to the main.

7.4 The box and surrounds shall be installed so that no traffic load on the surface box can be reflected onto the pipe or fittings.

7.5 Fire hydrant lids shall be painted golden yellow in accordance with NZTA M/7-Y

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8.0 TOLERANCES

The top surface of the cast iron valve or fire hydrant box shall be neither raised nor depressed from the surrounding ground or seal, and the following tolerances shall be adhered to:

- i) **Normal Traffic Areas**
 - (a) Grass Berm : + 5mm - 5mm
 - (b) Footpath or seal : + 10mm - 0mm
- ii) **Heavy Traffic Areas** + 10mm - 0mm

The tolerances shall be measured from the surface of the surrounding seal across the box and work may be rejected if the tolerances are not met.

9.0 Valve and Hydrant Markers

Marker posts shall be installed near all valves in accordance with Drawing No's TS601, TS602 and TS622.

All Fire Hydrants shall be marked according to SNZ PAS 4509:2008 Appendix G3.1 which basically requires:

- The lid of the fire hydrant box painted yellow
- A yellow painted triangle on or near the centre line of the road
- A yellow painted circle encircling the hydrant if its location can be obscured by parked vehicles.

Fire Hydrants installed in commercial and industrial areas shall be indicated with blue raised reflective pavement markers in addition to the markings indicated above. (Refer to SNZ PAS 4509:2008 Appendix G3.6).

Dimensions for triangle and circle markings are shown in drawing TS634.

9.1 For details of valve marker requirements in rural areas refer to Part 6 Volume 5.