

## INTRODUCTION

This addendum outlines Coliban Water's specific requirements in relation to the design and construction of water supply works.

The information in this document is to be read in conjunction with the *Water Supply Code of Australia* (WSA 03-2002-2.3, Melbourne Retail Water Agencies Edition, version 1.0), including the supplement regarding *Under pressure Cut-In Connection to Pressure Pipes  $\geq$  DN80*, further referred to as *The Code*.

Where this information conflicts with the standard clauses of The Code, the information in this annexure shall take precedence.

The Code is applicable to all works undertaken by Coliban appointed contractors (Capital Investment Projects) and Developer Installed Works.

## PART 0: GLOSSARY OF TERMS, ABBREVIATIONS AND REFERENCES

|                            |  |
|----------------------------|--|
| Capital Investment Project | Design and construction of sewerage infrastructure managed directly by Coliban Water.          |
| Developer Installed Works  | Design and construction of sewerage infrastructure managed by a developer.                     |
| Case Manager               | Coliban Water appointed person assisting developers with the design and construction of works. |

Add the following to the definition for *Concept Plan*.

Please note that the plans submitted by consultants to Coliban Water at the first step in the developer installed works process are often referred to as concept plans. In accordance with the terminology of WSA 03-2002, these plans should be referred to as Preliminary Design Plans.

## PART 1: PLANNING AND DESIGN

### 2.4.3.3 Minimum allowable service pressure

Replace the entire clause with the following:

Coliban Water's minimum service levels are defined by the Customer Charter. Where there is contradiction between the WSA code and the Customer Charter, the Customer Charter shall prevail. The service pressure limits defined by the table below shall be used as a guide in planning major augmentation works.

| SP Limit          | Application |                       |
|-------------------|-------------|-----------------------|
|                   | Domestic    | Industrial/Commercial |
| Maximum           | 80m         | 80m                   |
| Desirable Maximum | 65m         | 65m                   |
| Minimum           | 15m         | 15m                   |
| Desirable Minimum | 20m         | 25m                   |

Coliban Water may elect to provide a supply by agreement to new customers proposing to connect where the minimum service pressures at the meter will be less than 15m.

### 3.2.2 Minimum pipe sizes

Delete (c).

### 3.2.3 Empirical sizing of reticulation mains

Add the following note to TABLE 3.1

6. DN 63 or DN 50 pipe may be further extended with DN 40 pipe in accordance with Figure MRWA 3.4 to supply up to 5+5=10 lots.

### 3.7.2 Minimum pressure class

Replace the entire clause with the following:

The minimum class for all pipework and fittings within the Coliban Water system is PN 12 except where PE pipes are installed within court bowls and dead end streets. In these cases the PE pipe class shall be PN 12.5 for design heads up to 120 metres.

### 4.1.5 Impact of consequential damage

Add to the start of this clause:

A risk analysis and assessment shall only be conducted where required by Coliban Water.

### 4.2 WATER MAIN ACCESS

Replace the entire clause with the following:

Access into critical water mains shall be designed with the size and spacing of openings to suit the proposed inspection technique and equipment.

### 4.7 CONNECTION OF NEW MAINS TO EXISTING MAINS

Replace the second sentence with:

Under pressure cut-in connection (tapping under pressure) shall be used for all connections to exiting mains that are in service and have customers connected.

#### 4.8.2 Permanent ends of water mains

Add to the end of the first paragraph:

Designers please note that this differs from Coliban Water's previous practice.

#### 4.8.3 Temporary ends of water mains

Replace the third paragraph with the following:

In order to eliminate shut-offs, temporary ends of water mains shall terminate with a gate valve followed by a hydrant followed by a cap. This configuration shall be suitably anchored so that the cap can be safely removed during the future extension works without the need to disrupt services to existing customers.

#### 4.9 PROPERTY SERVICES

Replace the third last paragraph with the following:

Water service connections for corner properties should preferably front the shorter road frontage of the property.

#### 5.4.2 Pipe cover

Add the following:

Coliban Water's minimum pipe cover requirements are specified in Table B below.

Table B

| Location     | Nominal Pipe Diameter |        |         |
|--------------|-----------------------|--------|---------|
|              | ≤ 100                 | 150    | 225-750 |
| Minor Road   | 900mm                 | 900mm  | 900mm   |
| Major Road   | 1200mm                | 1200mm | 1200mm  |
| Nature Strip | 600mm                 | 600mm  | 750mm   |

#### 6.2.3 Stop valves for reticulation mains

Add to the fourth paragraph:

The number of property service connections in a 'shut-off' area shall be no more than 25 for a DN 150 or smaller water main.

## 6.8.9 Hydrants for reticulation system operational requirements

Replace Table 6.4 with:

Hydrants are required at a spacing no greater than:

- At termination points of the system on 100mm or greater pipes.
- Every 200 metres in residential areas.
- Every 500 metres in rural areas.
- Every 120 metres in industrial/commercial areas. (including CBD)

## MRWA 6.9 DISINFECTION

Replace the entire clause with the following:

As part of the commissioning procedure, the new assets shall be disinfected prior to the transfer of services and linking up to the water main. Firstly, any foreign material that may have entered the pipes during construction shall be removed by flushing or other means.

Any remaining contamination shall be destroyed by chlorination after which the chlorinated water shall be flushed from the main. The procedure shall be as follows:

- The main shall be disinfected in sections between high points, draining to a single pump-out manhole;
- A high-rate mobile chlorinator, capable of dosing a super-chlorinated solution of Chlorine prepared between 50-100 mg free chlorine per litre of service water;
- The service water to the mobile chlorinator shall be obtained from either a hydrant, a ferrule or a suitable large diameter property service;
- The super chlorinated solution flow required is approximately 100 litres per minute, but the allowable range is 60 – 200 litres per minute;
- The solution shall be delivered through a second hydrant or ferrule;
- When the section of main is full, it shall be isolated and held for at least 24 hours;
- The section of the main shall be emptied of super-chlorinated solution and finally flushed with fresh potable water until the disinfectant concentration does not exceed the normal operating range for disinfectant level in the distribution system as set out in table 6.9;

Disposal of super-chlorinated solution and flushing water shall comply with any environmental requirements set by the EPA of Victoria and the Catchment Management Authority.

## 6.9.1 Bacteriological testing

After final flushing, bacteriological sampling and testing in accordance with this section shall be performed by a NATA-registered water testing laboratory.

The water quality parameters limits as listed in Table 1 below must be met as a minimum. If the initial results fail or are of lesser quality then the water upstream of the new main, the main shall be flushed again and re-sampled. If the follow up samples also fail, the main shall be re-disinfected.

Table 6.9: Water Quality Parameter Limits

| Water Quality Parameter              | Acceptable range      |
|--------------------------------------|-----------------------|
| pH                                   | 6.5–8.5               |
| Chlorine (free)                      | 0-1 mg/l              |
| Total Coliform count                 | 0 orgs / 100 ml (MPN) |
| Faecal Coliform count or eColi count | 0 orgs / 100 ml (MPN) |
| Heterotropic plate count             | 0 –100 CFU/ml         |
| Turbidity                            | < 5 NTU               |
| Colour                               | < 15 TCU              |

## PART 2: PRODUCTS AND MATERIALS

This section is to be read in conjunction with the Product Appraisals section on the Water Services Association of Australia website ([www.wsaa.asn.au](http://www.wsaa.asn.au)).

### Rotation of Valves

- All key operated (buried) valves shall be anti-clockwise closing;
- All valves in pits, buildings or above ground are clockwise closing. Closing direction shall be indicated on the valve.

## PART 3: CONSTRUCTION

### 12.1 Quality Assurance

Section 12.1 is not applicable for Capital Investment Projects. The provisions of Section 22 of the General Specifications apply.

For Developer Installed Works where the subdivision comprises of more than five lots, the following applies:

The Contractor shall establish and implement a management system to achieve compliance with the contract and to document such compliance. The Management

System will include OH&S, environment and quality. Accepted management systems or components thereof are:

- Civil Contractors Federation (CCF) Integrated Management System;
- AS 9001: Quality Management Systems;
- AS 14001: Environmental Management Systems;
- AS 4801: Occupational Health and Safety Management Systems;
- SafetyMap;
- Subby Pack OHS Contractor Management Tool
- Other equivalent systems.

### 12.1.3 Project Management Plan

For Developer Installed Works of more than five lots, a Project management Plan is submitted to the Case Manager.

## 13.4 CUSTOMER FOCUS

### 13.4.1 General

Coliban Water's "Requirements for customer service" are outlined in the *Urban Customer Charter* and *Rural Customer Charter*. These documents can be found on the Coliban Water website [www.coliban.com.au](http://www.coliban.com.au).

## 15.6 Property Services and Water Meters

Connectors and property services shall be installed by the property owner after completion of the works. Applications for a connection are managed by Coliban's registered Quick Connect agents. A register of these agents can be found on the Coliban Water website.

## 17.1 TRENCH FILL

### 17.1.2 Material Requirements

The trench fill material shall comply with the Specification and relevant Design Drawings.

Where the filled trench will be subjected to traffic loading, the fill material shall comply with the requirements of the road Owner. In the absence of a directive, use one of the following:

- (a) Compaction sand; or
- (b) Fine crushed rock; or

(c) 75 mm crushed rock.

### **17.1.3 Compaction of Trench Fill**

Replace first two paragraphs with:

The degree of trench fill compaction shall conform to Table 19.1.

The extent of trench fill compaction testing shall be as specified in Clause 19.3.4.

### **19.4.3 Maximum allowable loss**

Calculate the maximum allowable loss by:

$$(0.14 \times d_i \times LP \times H) / 1000 \text{ (L/h)}$$

where:  $d_i$  = internal pipe diameter, mm

LP = length of water main under test (km)

H = average value of test head (m)

## **PART 4: STANDARD DRAWINGS**

No addenda.

## **SUPPLEMENT: UNDER-PRESSURE CUT-IN CONNECTION TO PRESSURE PIPES $\geq$ DN80**

No addenda.