



Tasmania

# Plumbing Regulation *Advisory Notes*

## Building Standards and Regulation

Department of Infrastructure, Energy and Resources  
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Advisory notes are issued to assist in the interpretation of Tasmanian plumbing legislation and to keep all relevant stakeholders informed of developments within the plumbing industry.

### Amendment 6 - Tasmanian Plumbing

The Tasmanian Plumbing Code 1994 is updated as necessary to reflect changes in the plumbing industry.

Currently the Code is under review and it is expected that a new version will be published in mid to late 2003. The following is a brief summary of the most recent amendment to the Code.

Amendment 6 is issued to provide for:

1. Recognition of AS/NZS 3500.1.2:1998 *Water Supply - Acceptable solutions* as a verification method for the performance requirements of Part B1, Cold Water Supply;
2. Recognition of AS/NZS 1547:2000 *On-site domestic- wastewater management* as a verification method for the performance requirements of Part B2, Sanitary Plumbing and Drainage;
3. Recognition of AS/NZS 3500.5 Domestic installations;
4. The removal of references to superseded Australian Standards;
5. The inclusion of energy efficiency performance requirements for hot water storage heaters in line with the Building Code of Australia energy efficiency provisions;
6. Updates to definitions of words used in the Plumbing Code to ensure consistency of meaning;
7. The deletion of superseded clauses and to correct typographical errors;
8. Reference to *Tasmanian Fire Service Codes of Practice* in Table A1.3;
9. The change of a reference to the Agency administering the Code.

#### Implementation

This amendment took effect on 6th February 2003.

Even though the amendment commenced on 6 February 2003, the energy efficiency requirements for services called up under the Building Code of Australia applied as of 1 January 2003, under the *Building Regulations 1994* and the *Building Code of*



Illustration by Tom Priestley

*Australia, Volume 2, Housing Provisions.*

Copies of Amendment 6 are available to download from the Building Standards & Regulation Website:

[www.wst.tas.gov.au/building](http://www.wst.tas.gov.au/building)

The document is in Acrobat Reader format.

Printed copies are available on request. See last page of these Notes for contact details.

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To keep Local Government, Statutory Authorities, Engineers, Designers and the Plumbing Industry informed on developments, and to assist in the clarification and interpretation of parts of the Act, the Plumbing Regulations, and the Tasmanian Plumbing Code, this series of advisory notes will be issued as and when necessary.

## Private Drinking Water Supplies—Health Risks

Private drinking water supplies can be sourced from rainwater tanks collecting water from a roof, or a tank connected to a stream, bore, well or dam, or a small pipe system connecting a number of buildings subject to council approval. Water from tanks or deep bores is usually very palatable but contamination can occur from human or animal faeces, and runoff from farms, pastures and dams.

Contaminated water can contain harmful organisms such as viruses, bacteria (*Salmonella* or *Campylobacter*) and gastro intestinal parasites (*Giardia* or *Cryptosporidium*). These harmful pathogens are invisible to the naked eye and may be present even in clear water. Drinking water containing these pathogens can cause severe gastroenteritis, lasting weeks. Infants, elderly and people with suppressed immune systems are most at risk. However the risk of contracting these illnesses can be greatly reduced by obtaining drinking water from a clean, good quality source, such as rainwater, and regularly maintaining the system.

### CHEMICALS

Chemical contaminants are less common than microbiological contaminants, but can still be present in the rural environment. If dust is blown onto a roof and washed into the tank, chemical residues can build up. Air borne chemical pollutants can occur in urban or industrial areas. Other sources of contamination that may leach from roofs into tanks include:

- Lead based paints or lead flashing;
- Tar based roof coatings can bind with chemicals such as pesticides or fertilisers; and
- Smoky residues condensing on roofs near flues from:
  - \* wood heaters; and
  - \* incinerating toilets.

### PRECAUTIONS

- Ensure that surface runoff, irrigation and channel water, and sewerage leakage cannot enter the water supply;
- While most clean roof types are safe to collect water, avoid recently painted roofs, roofs coated with lead based paints or tar based coatings, or parts of roofs near flues;
- Ensure where pesticide treated wood is used that it does not come into contact with rainwater collected for drinking

water;

- Roofs and gutters require regular cleaning to remove leaves and debris;
- Install simple screening devices between the roof and water tank to remove debris from roof catchments as micro organisms live in soil and leaf litter accumulated in gutters particularly if kept damp for long periods due to poor drainage;



- Overhanging branches need to be trimmed to avoid build up of foliage in gutters;

- Tanks require sealing so that animals, insects and light cannot enter;

- Contaminants can be washed into the tank after the first rain after a dry spell. If a "first flush" or diversion system is installed it will avoid the likelihood of this water entering the tank;

- Micro-organisms can live in tanks so regular cleaning to remove bottom sludge is necessary;

### DISINFECTION

Adding small amounts of chlorine is the least expensive and most effective way to disinfect water.

Sufficient chlorine is to be added to provide a free chlorine residual of around 0.5 mg/L (parts per million) i.e. 5 milligrams per litre.

For every kilolitre (1000 litres) of water in a tank, either:

- 40 ml of liquid pool chlorine (12.5% sodium hypochlorite); or
- 125 ml of plain (unscented) household grade bleach (4% available chlorine); or
- Eight grams of granular pool chlorine (calcium hypochlorite—65% available chlorine)

will disinfect the water.

Safety and handling instructions for all chlorine and bleach products must be observed.

To allow the chlorine to disinfect the water adequately, allow at least 24 hours before using the tank water.

Further information can be obtained from the council Environmental Health Officer. Further information can also be obtained from the Department of Health and Human Services Web Page at: [www.dhhs.tas.gov.au/publichealth/environmentalhealth/waterquality/ruralwater.html](http://www.dhhs.tas.gov.au/publichealth/environmentalhealth/waterquality/ruralwater.html)

## Drinking water guidelines

The NHMRC/ARMCANZ *Australian Drinking Water Guidelines* (ADWG) provides the Australian community and the water supply industry with guidance on what constitutes good quality drinking water. Following its endorsement in 1996, the ADWG has been subjected to a rolling-revision process that ensures the Guidelines represent the latest scientific evidence in relation to good quality drinking water. From time-to-time, as sections of the Guidelines are reviewed, the NHMRC Web Site will be updated to provide the latest information.



The NHMRC proposes to issue new guidelines for drinking water as part of the rolling review. Draft Guidelines were released for public comment in October 2002, and closed in January 2003. Copies of the draft may still be viewed at [www.nhmrc.gov.au/publications/synopses/eh19syn.htm](http://www.nhmrc.gov.au/publications/synopses/eh19syn.htm).

When the new guidelines are endorsed the relevant sections of the 1996 Australian Drinking Water Guidelines will be rescinded. Check the Web site from time to time for updates.

## Inspection Openings—Discharge Pipes and Drains

### Are I.O.'s (Inspection Openings) required on all waste discharge pipes and drains?

#### Waste discharge pipes

All pipes conveying discharge from soil fixtures are to be provided with inspection openings and are to be located:

- wherever necessary for testing purposes;
- as close as practical to or at the first bend downstream from the outlet of every fixture trap;
- at minimum intervals of 30 m in any graded pipe;
- at the base of every stack; and
- at junction fittings that connect any graded pipe or branch to a stack, or at the upstream section of such graded pipe or branch.

#### Drains

Except where inspection chambers are provided, inspection openings for maintenance purposes (see Figure 4.4 of AS/NZS 3500.2.2) must be provided in the following locations:

- as close as practical outside the building on each branch connecting one or more water closets or slop hoppers but not greater than 2.5 m;
- at intervals of not more than 30 m, except where waste fixtures only are connected;
- at the connection to the authority's sewer, if not provided by the authority;



- on the downstream end where any drain passes under a building except where waste fixtures only are connected;
- where any new section of drain is connected to an existing drain; and
- immediately at or upstream of the upper bend of a jump-up.

#### Background

The former 1978 Plumbing Regulations required I.O.'s to be located in the following locations to facilitate the initial visual inspection and subsequent maintenance of plumbing installations:

- at intervals not exceeding 10 m;
- at first change of direction downstream of a fixture trap, but not more than 10m, then every second change thereafter;
- At stack junctions of all discharge pipes;
- At the base of a vertical section of terminal vent above any offset on grade;

These requirements were changed as a result of the introduction of the Tasmanian Plumbing Code 1994 of which in turn called up the Australian Standard AS 3500.2 as a deemed-to-satisfy provision of the Code.

The changes of the provisions for the location of I.O.'s came about due to new technology used in sanitary plumbing systems and sophisticated pipe clearing equipment and techniques for clearing of stoppages.

## Building Act 2000—Update

#### The *Building Act 2000*

The *Building Act* implementation process is well under way. The Act is expected to come into operation later this year.

#### Appointment of Authorised Bodies

The *Building Act 2000* provides for accreditation of Building Practitioners by an Authorised Body or Bodies. Applications are currently being assessed and analysed, in accordance with the Minister's Guidelines and other assessment criteria.

Once appointed the Authorised Body(s) will put their systems in place to accredit building practitioners. Industry should anticipate extensive communication and consultation with the Authorised Body(s) advising when accreditation is required and the process to follow.

*Note: Licensed Plumbers are not required to become Accredited Building Practitioners.*

#### Training and communications

The implementation process continues to enjoy the support of all sectors of the building design, assessment and construction industry.

To enhance this process BSR actively involved in providing advice, training and information to all sectors. Major initiatives include the following:

- A draft Training Communications Strategy has been completed after considerable effort by the Training Reference Group. This will form the basis for communication between government and industry participants during the Building Act implementation process.
- BSR is in the process of modifying and updating its Web Page to allow easier access to a greater range of information about current innovations in the building industry, including Q & A about the *Building Act*.
- The needs of Local Government for information regarding the administrative and operational impacts of the Building Act have also been recognised. They include registers of permits and certificates and the establishment of permit authorities.



## Legionella Bacteria in Cooling Towers

Legionella bacteria were discovered in September 2002 during routine testing of a cooling tower at the TEMCO smelter at Bell Bay. The bacteria can cause deadly Legionnaires disease. The tower was immediately treated in accordance with Tasmanian Public Health Department Guidelines, cleaned with chemicals and checked daily. Four other towers on the site were found to be safe. All 300 TEMCO employees were immediately told of the discovery and advised to report to the company doctor if they developed flu like symptoms within 14 days after the finding. Eight people working on the site were tested for exposure to the bacteria and given antibiotics as a precaution. Infection can occur through the inhalation of water droplets and people working in the vicinity of the towers were required to wear face masks so that the disease could not be transmitted.

### Legionella infection is a notifiable disease

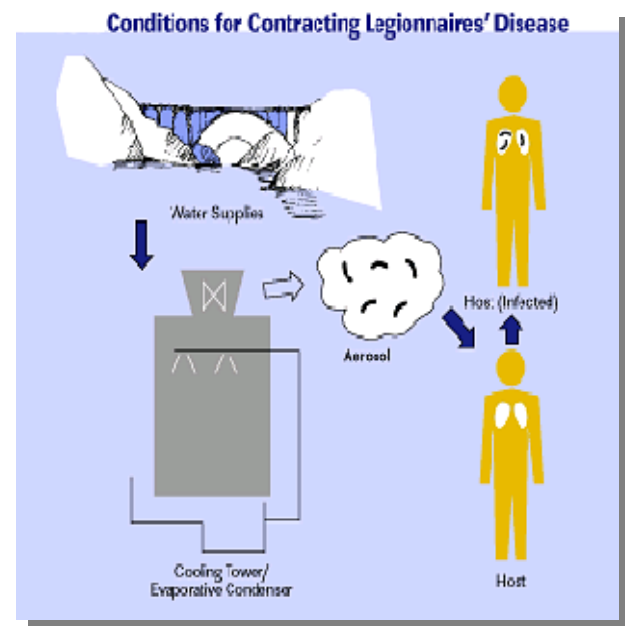
Legionellosis, the technical name for Legionnaires' Disease, is caused by a bacteria known as Legionella Pneumophila. To contract the disease, the bacteria must be inhaled deeply into a susceptible person's lungs, where infection can occur. The infection has essentially all of the symptoms of pneumonia. The bacteria most frequently is found in water. You cannot get the disease by drinking, swimming or washing with Legionella-contaminated water. The bacteria most frequently is spread by very fine water droplets. Any water, aerosol or misting such as the drift from a cooling tower, evaporative condenser or decorative fountain can carry the Legionella bacteria. Likewise, fine dust, soil and dirt also can carry the bacteria. Normal disinfection of drinking water by chlorine products does not kill Legionella bacteria. However, continuous maintenance of chlorine (or bromine if water pH is above 7.5) at 1.0 to 2.0 mg/l of "free" chlorine residual is accepted as an effective means of killing Legionella bacteria. Lower levels also may be adequate. It is important that the entire cooling water piping, chillers and cooling tower/s be contacted by this level of chlorine. Untreated piping dead legs, warmup loops and stagnant areas can quickly recontaminate the entire water circuit.

Note:

The above information and illustration was sourced from [www.puckorius.com](http://www.puckorius.com)

### Why are cooling towers a problem?

During the normal operation of a cooling tower, aerosols are formed which will be carried into the environment through the tower exhaust. If Legionella are present in the tower water, breathing the aerosols can result in infection. Poorly maintained cooling towers have been implicated in outbreaks of Legionnaires' disease overseas and Australia.



### Why is Registration of Cooling Towers now required?

The Director of Environmental and Public Health, through the provisions of the *Public Health Act*, requires that owners of cooling towers apply for registration with their local council. The main reason for this is to provide good records of cooling tower location and operation. This information greatly assists the Public and Environmental Health Service and local councils to urgently investigate and interrupt an outbreak of legionnaires disease. Registration may also reduce the occurrence of legionnaires disease by highlighting to all cooling tower owners the importance of good maintenance measures.

### What are my Responsibilities as a Cooling Tower Owner or Manager?

You must apply for registration of cooling towers with your local council. Household or domestic cooling towers do not need to be registered. Owners must comply with the Guidelines for Legionella issued by DHHS. Councils also may impose additional conditions on registration.

Further information and the Guidelines can be obtained from the Department of Health and Human Services website:

[www.dhhs.tas.gov.au/publichealth/environmentalhealth/coolingtowers.html](http://www.dhhs.tas.gov.au/publichealth/environmentalhealth/coolingtowers.html). Other useful information on Legionella in cooling towers can also be sourced from the AIRAH Website: [www.airah.org.au](http://www.airah.org.au)

## Standards Up-date

Building Standards and Regulation through its membership of the WS-014 and WS-020 Water Supply Committees (National Plumbing and Drainage Code) are currently working on a project to revise AS/NZS 3500 Parts 1.2, 2.2, 3.2 and 4.2.

The objective of the project is to update the suite of standards for the inclusion of the latest products, practices and installation procedures and to be brought into line with the proposed Plumbing Code of Australia.

The project has an accelerated priority. The basis for this priority is that the revision needs to coincide with the publication of the Plumbing Code of Australia requirements.

Part 0 *Glossary of terms* is to be revised also to be brought into line with the Plumbing Code of Australia i.e. to incorporate new terminology used in the industry.



## Protection of Drains, Mains and Service Easements

### PROTECTION OF EXISTING DRAINS

Building contractors have obligations when building over or near existing drains.

A person must not erect a building over an existing drain or within 600 millimetres from the edge of an existing drain measured horizontally, unless the owner of the building has obtained written permission from the Engineer to do so. If the Engineer considers that the erection of a building or extension to a building may impair the drainage of any land, the Engineer may impose any of the following conditions under the *Building Regulations 1994*:

- that the whole or a part of a drain within the owner's property be replaced by a drain constructed of a material specified by the engineer;
- that the whole or a part of a drain within the owner's property be relocated clear of a building;
- that the whole or a part of a drain within the owner's property be protected;
- that an alternative drain be provided;
- that an alternative connection to the council sewer be provided.

The council appointed Engineer may give unconditional permission for an erection or extension of a building if:

- the erection or extension may only impair the drainage of the property on which the building is, or is to be, located and no combined drain is involved; and

- the owner gives a written undertaking not to hold the council liable for damage or inconvenience arising from the work.

These requirements are to ensure that access to the service by excavation will be possible without undermining the ground support of adjacent building work (see regulation 44 )

### Protection of service easements

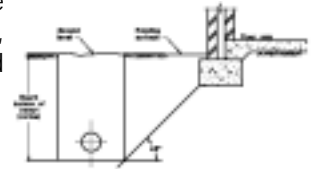
A person must not construct a part of a building over or within a service easement unless the person has obtained written permission from the appropriate authority to do so. (see *Building Regulations 1994*r. 45)

### Tasmanian Plumbing Code—Proximity to services

The Tasmanian Plumbing Code amends the AS/NZS 3500 by providing deemed-to-satisfy provisions for drains and water pipes in proximity to other services. The proximity to other services will vary, depending on the size and type of the services affected therefore you should always check with other service providers as the greater of the separations must be achieved.

### Location of Drains—protection of buildings and drains

Where drains are located in close proximity to, or under footings, care should be taken to ensure that damage is not caused to footings or structures. It is also important to ensure that the loads from footings, foundations, buildings or structures are not imposed onto a drain or main.

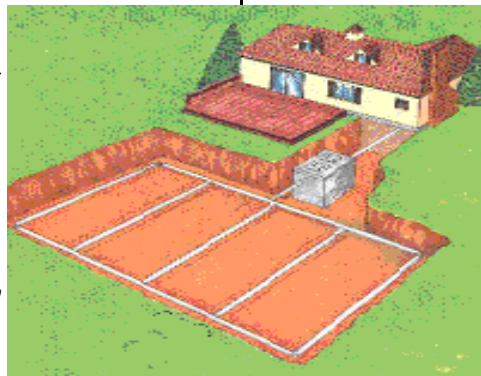


## On-site Disposal Systems

When plumbing work involves the installation of an on-site disposal system (ODS), an application is to be made for a Special Connection Permit (SCP) to the local council. It is no longer the role of Council's Environmental Health Officer (EHO) to design ODS as they did in the past. This practice ceased in November 1994 when the Plumbing Regulations were adopted.

The following should be considered before making an application:

- An application is to include two copies of all documents specified in Schedule 1, Part 3, of the *Plumbing Regulations 1994* and any additional documents required by the council Engineer and or (EHO);
- The documents must have sufficient detail and information to indicate that the work is likely to comply with the regulations and the *Tasmanian Plumbing Code 1994 (Code)*;
- In most cases a Site and Soil Evaluation (SSE) will be required. The SSE will need to be prepared by suitably qualified and experienced personnel. The object of an SSE is to identify potential land-application and reserve areas on a property and to gather sufficient information for the selection and design of a ODS. For comprehensive details in the preparation of an SSE refer to AS/NZS 1547: *On-site domestic-wastewater management*.
- Where a council has requested further information in relation to an application for a SCP, failure to supply the correct



documents within one month of that notification may result in an application lapsing or causing unnecessary delays.

- Before consenting to a SCP for an ODS an Engineer (on the advice of the EHO) may require the documentation to be modified to comply with the *Code* and regulations. The EHO may consent to the issue of a SCP for an ODS after examination of the application and documentation, and if satisfied that the proposed system is likely to comply with the Regulations.

- An Authorised Officer of the Council will issue the SCP only after being satisfied that the:

- ◊ The engineer has consented to the issue of the SCP;
- ◊ The EHO has consented to the issue of SCP in relation to an ODS (one should not consent without the other);
- ◊ Council fees have been paid;
- ◊ If required, the applicant has supplied a certificate of insurance under the *Housing Indemnity Act 1992*;
- ◊ the on-site disposal system is one

which has been Accredited under the *Code*;

- ◊ the products to be used in the ODS have been Authorised under the *Code*; and
- ◊ in the opinion of the EHO, the land is suitable for the proposed ODS.
- The Authorised Officer may refuse to issue a special connection permit if the matters mentioned above have not been satisfied.

## Hazard Alerts

### ELECTRICAL CORDS – HOW LONG IS TOO LONG?

Plumbing and building contractors are reminded that requirements for the maximum length of flexible electrical cords used on construction sites are set down in Australian/New Zealand Standard AS/NZS 3012, Electrical Installations - Construction and Demolition sites.

The standard also sets out the requirements for distribution boards with socket outlets for flexible cords. When an electrical contractor is installing a temporary electrical installation for a plumber or builder – and if it's obvious long leads will be required – it is expected the contractor will comply with the requirements. Contractors should install the switchboard and/or necessary distribution switchboards with socket outlets to allow for compliant length cords to reach to the furthest part of the building or structure under construction.

It is important to ensure that all electrical extension leads are in good condition before they are used. In addition to periodic testing, users should before each use check to see that the lead has a current test tag, the plug and socket are properly secured to the cord and that there are no cuts or tears in the outer insulation. Significant amounts of heat can be generated by electrical leads that may lead to fires; especially if the current rating for the electrical lead is exceeded. The heating effect is exacerbated by coiling of leads therefore, when using extension leads ensure that they are fully extended.



*The information was partly sourced Electricity Industry Bulletin No: 49 Dec. 2002*

### CHROME PLATED FIRE HYDRANT VALVE FAILURE

A service technician was injured while applying hand pressure to close a fire hydrant valve to prevent it leaking. The injury occurred when the centre of the 64 mm chrome plated brass fire hydrant valve, weighing 2.8 kg, was forced from the valve body by the water pressure in the system. Pressure in the system estimated at 2200 kPa. The technician received a glancing blow to the face, was thrown several metres and was further injured when he struck a wall.

#### Contributing Factors

An investigation into this accident revealed that:

- washers in this and other fire hydrant valves were replaced two days earlier and were correctly re-assembled
- the failed valve body appeared to be soft and distorted easily
- the valve was approx 40 to 50 years old
- the technician was standing in front of the valve to close it.

#### Recommendations

Where chrome plated fire hydrant valves are installed it is strongly recommended that building owners have them inspected by a 'competent person' (licensed technician). They should be replaced where faulty. Persons should not stand in front of hydrant valves during servicing, adjustment or operation.



*The information was sourced from Workplace Issues magazine No. 24 Oct. 2002*

## Proposal for an Occupational Licensing Act

A Committee of the Department of Infrastructure, Energy and Resources recently developed and released a draft discussion paper as a result of consultation between government and industry. It identified benefits to consumers and business that would result from the development of an Occupational Licensing Act.

The Act would provide for the licensing of tradespersons and contractors in the electrical, plumbing and gas-fitting industries under a single, streamlined administrative system.

The draft discussion paper is available for downloading as a PDF document at: [www.wst.tas.gov.au/resource/occliacctcon.htm](http://www.wst.tas.gov.au/resource/occliacctcon.htm)



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