



ADVISORY NOTICE BUILDING

11/00

Advisory Notices are issued to assist in the interpretation of the Development Act 1993

July 2000

Microbial (Legionella) Control in Buildings

It has come to the attention of the Building Standards & Policy Branch that some building owners and practitioners may not be aware that maintenance of air handling systems, warm water systems and cooling towers for microbial control of Legionella has been required in South Australia under the *Development Regulations 1993* since 4 May 1995.

The prescribed maintenance regime includes regular cleaning and suitable water treatment, considered by Australian Standards to be an effective measure for the control of the proliferation of *Legionella* in cooling water systems.

MAINTENANCE REQUIREMENTS

Regulation 76 calls up *Minister's Specification SA 76* as deemed-to-satisfy maintenance and testing requirements for essential safety provisions installed in buildings.

The June 1995 edition of *Minister's Specification SA 76* generally required monthly inspections of warm water installations, mechanical ventilation systems and cooling towers in accordance with Section 5 of AS 3666 for microbial control.

The current, January 2000 edition of *Minister's Specification SA 76* requires monthly inspections of warm water installations, mechanical ventilation systems and cooling towers in accordance with Section 2 of AS/NZS 3666.2 for microbial control.

Generally the equipment to be maintained must be shut down during maintenance or cleaning procedures, to prevent particulate matter from being passed through the system. Trained personnel wearing appropriate protective gear must carry out maintenance procedures.

Air Handling Systems

Maintenance for microbial control includes:

Air handling system components	Requirements from 13 March 2000 - in accordance with AS/NZS 3666.2 - 1995	Requirements from 4 May 1995 - in accordance with AS 3666 - 1989
Air intakes and exhaust outlets	Inspect and clean where necessary	Inspect and clean where necessary
Air filters	Inspect and clean or replace where necessary in accordance with the supplier's requirements	Inspect and clean or replace where necessary in accordance with the supplier's requirements
Humidifiers (steam and spray)	Inspect line strainers, valves, sparge pipes, spray nozzles and components discharging moisture into the airstream, and clean where necessary.	Inspect line strainers, valves, sparge pipes, spray nozzles and components discharging moisture into the airstream, and clean where necessary.
Humidifiers (boiling and pan-type)	Inspect tanks, trays and discharge devices, and clean where necessary.	Inspect tanks, trays and discharge devices, and clean where necessary.
Evaporative air coolers	Inspect at least every 3 months while the system is in use and maintain as follows- <ul style="list-style-type: none"> • Drain and clean sump; • Clean wetted pads, and replace where necessary; • Clean water strainer; • Replace air filter (where fitted); and • Flush drainage system with clean fresh water 	Inspect at least annually and- <ul style="list-style-type: none"> • Drain and clean sump; • Replace wetted pads where necessary; • Clean water strainer, where necessary; • Replace air filter (where fitted); and • Flush drainage system clean with water
	Drain evaporative air coolers not used for periods greater than one month.	

Air handling system components	Requirements from 13 March 2000 - in accordance with AS/NZS 3666.2 - 1995	Requirements from 4 May 1995 - in accordance with AS 3666 - 1989
Ducts and components	<p>Inspect coils, trays and sumps each month and clean when necessary.</p> <p>Check condensate drains, tundishes and traps monthly for effectiveness and that drainage lines are flushed clean.</p> <p>Inspect ductwork monthly in the vicinity of moisture-producing equipment and selected access points, and clean when necessary. Check ductwork drainage facilities annually and where necessary clean drains.</p> <p>Inspect fans and coil units annually for evidence of corrosion, wear on flexible connections and drive belts and for other deterioration, and clean or repair when necessary.</p> <p>Inspect components of terminal units annually and clean when necessary.</p>	<p>Inspect coils, trays and sumps annually, and clean when necessary.</p> <p>Check condensate drains, tundishes and traps annually for effectiveness, and that drainage lines are flushed clean.</p> <p>Inspect ductwork annually in the vicinity of moisture-producing equipment and selected access points, and clean when necessary. Check ductwork drainage facilities annually and where necessary clean drains.</p> <p>Inspect terminal units annually, and clean or repair when necessary.</p> <p>Inspect components of terminal units annually, and clean where necessary.</p>

Heated Water Systems

Maintenance for microbial control includes:

Heated water systems	Requirements from 13 March 2000 - in accordance with AS/NZS 3666.2 - 1995	Requirements from 4 May 1995 - in accordance with AS 3666 - 1989
Water treatment units	Inspect monthly to ensure proper operation	Inspect monthly to ensure proper operation
Water storage tanks	Inspect and clean all water storage tanks and associated pipework, at least annually, in accordance with AS 3500.1	Inspect and clean at least annually, and in accordance with any requirements of the Regulatory Authority
Hot water systems	Maintain in accordance with AS 3500.4	
Warm water systems	Maintain in accordance with the requirements of the regulatory authority	If temperature of warm water installations is required to be below 55°C, maintain in accordance with the requirements of the regulatory authority
Heated spa pools	Spa pools constructed after 1 January 1993 must be maintained in accordance with Regulation 7 of the <i>Public and Environmental Health Regulations 1991</i>	<p>Spa pools constructed after 1 January 1993 must be maintained in accordance with Regulation 7 of the <i>Public and Environmental Health Regulations 1991</i>.</p> <p>Water quality of heated spa pools shall comply with the relevant requirements of AS 2610.1.</p>

Cooling Towers

Maintenance for microbial control includes:

Cooling towers	Requirements from 13 March 2000 - in accordance with AS/NZS 3666.2 - 1995	Requirements from 4 May 1995 - in accordance with AS 3666 - 1989
Cooling towers generally	Inspect all cooling towers in use at least monthly as part of the regular maintenance routine and clean when necessary. Cleaning shall include the physical cleaning of the cooling tower and disinfection and draining of the entire cooling water system. Clean all internal wetted surfaces of cooling towers, particularly their sumps, anti-splash mats and fill, in accordance with supplier's instructions. Unless approved otherwise by the regulatory authority, the cleaning interval shall not exceed six months. Systems shut down on a seasonal basis shall be cleaned before start-up.	Inspect all cooling towers in use at least monthly as part of the regular maintenance routine and clean when necessary. Clean all internal wetted surfaces of cooling towers, particularly their sumps and fill, by high-pressure water, steam, or other effective method. Unless approved otherwise, the cleaning interval shall not exceed six months. If cooling towers are only operated seasonally, they shall be flushed and cleaned before start-up.
Decontamination	Emergency decontamination shall be carried out when directed by the regulatory authority.	Carry out decontamination when directed by the regulatory authority.
Water treatment system	Inspect monthly and maintain in accordance with the supplier's instructions. Water quality in cooling water systems shall comply with all relevant requirements of the regulatory authority.	

Operating and Maintenance Manuals and Records

Both AS/NZS 3666.2 -1995 and AS 3666 -1989 require operating and maintenance manuals to be provided for all plant, equipment and systems listed in the above table and they must be made available at the site, together with up-to-date maintenance records (reports and log books), for inspection by any authorised person on request. Operating and maintenance manuals shall include:

- Physical details of the plant, equipment and systems;
- Recommendations on maintenance including water treatment maintenance and management;
- Recommended cleaning, disinfection and emergency decontamination procedures;
- Start-up, operating and shut-down procedures; and
- Particulars of the maintenance management program.

Maintenance records containing at least the following information shall be retained on site for a minimum period of two years:

- The date; the item of plant, equipment or system; and the nature of service performed.
- Details of any defects found, and rectification procedure undertaken.
- The name of the person or company performing the service.

Schedule 16, Form 3 Returns

Owners are reminded that under Regulation 76 (5) of the *Development Regulations 1993* they are required to provide annual proof to the council that maintenance and testing of all essential safety provisions (as listed in the schedule of essential safety provisions issued with the building rules consent, ie Form 1 in Schedule 16) has been carried out in accordance with Minister's Specification SA 76 as in force at the time of consent. Form 3 in Schedule 16 sets out an appropriate format for this purpose.

Further information

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