



MAINTENANCE OF AIR-HANDLING SYSTEMS: AS 3666:2002

Background

Air-handling systems such as evaporative air conditioners and cooling towers have the potential to harbour bacteria that can cause debilitating illness and even death. Legionnaires' disease is arguably the most publicised infection associated with these types of systems. It is a pneumonia-type infection that is acquired by inhaling air laden with *Legionella pneumophila* bacteria.

In 1994 the *Health (Air-handling and Water Systems) Regulations* were introduced to provide a legislative framework requiring systems to be adequately maintained to prevent cases of Legionnaires' disease. These Regulations call up Australian Standard 3666:2002 which stipulates specific maintenance tasks for systems. The ultimate goal of the standard is to maintain air-handling systems in a good state of repair and eliminate sites where *Legionella* may harbour, such as stagnant warm water and moist surfaces with a high build-up of dirt and grime.



It is important that owners of commercial buildings using air-handling systems maintain these systems in accordance with AS 3666:2002 so that public health is not jeopardised.

General Information

All maintenance shall be carried out by a competent person and in accordance with AS 3666:2002. Details of all maintenance performed and the name and signature of the person who has completed the work should be entered into a log book which must remain on the property at all times so it is readily accessible for verification.

Maintenance Notes

Air intakes and exhaust outlets

Inspected at least monthly and cleaned where necessary.

Supply air filters

Inspected monthly and cleaned or replaced where necessary.



Humidifiers

- Steam and Spray Humidifiers
Line strainers, valves, sparge pipes, spray nozzles and components discharging moisture into the airstream shall be inspected monthly and cleaned where necessary.
- Boiling and pan-type humidifiers
Tanks, trays and discharge devices shall be inspected monthly and maintained accordingly.

Evaporative air coolers

The following components should be inspected monthly and maintained as indicated:

- Sump – drained and cleaned.
- Wetted pads – cleaned and replaced when needed.
- Water strainer – cleaned where necessary.
- Air filter – replaced.
- Drainage system – flushed with clean fresh water.

Evaporative air conditioning equipment, when not in use for periods of more than 1 month must be drained.



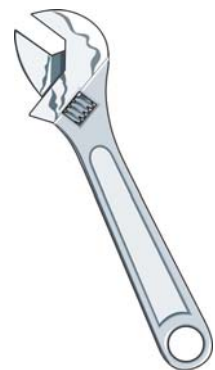
Ducts and components

The following components should be inspected and maintained as indicated:

- Coils – inspected monthly and cleaned as necessary.
- Trays and sumps – inspected monthly and cleaned as necessary.
- Condensate drains, tundishes and traps – checked monthly for effectiveness and drainage lines flushed clean.
- Ductwork – inspected annually near moisture producing equipment and access points and cleaned as necessary; also, drain functioning checked annually.
- Fans – inspected annually for evidence of corrosion, wear on flexible connections and drive belts and for other deterioration and cleaned or repaired when necessary.
- Terminal units – components inspected annually and cleaned as necessary.
- Air Outlets – components inspected annually and cleaned as necessary.
- Return and Exhaust Grilles – inspected annually and cleaned as necessary.

Cooling Towers

- Systems should be inspected monthly as part of a regular routine maintenance program, and be cleaned when necessary. The cleaning process shall include physical cleaning, disinfection and draining of the entire cooling water system at intervals not exceeding six months unless otherwise approved by the local authority.
- Each month the drainage systems should be operated and flushed.
- Systems must be maintained even when they are not in operation.
- Systems that have been shut down on a seasonal basis must be cleaned before start-up.



Operating and Maintenance Manuals

Operating and maintenance manuals must be provided for all plant, equipment, water treatment equipment.

The manuals must include the following:

- Physical details of the plant, equipment and systems and pre-treatment carried out.
- Recommendations on maintenance including water treatment maintenance and management.
- Recommended cleaning, disinfection and emergency decontamination procedures.
- Start Up, operating and shut down procedures.
- Particulars of the maintenance management program including plant servicing and cleaning schedules.

Maintenance Records

Up to date maintenance reports and log books must be provided for all plant, equipment and systems including:

- Date, item of plant, equipment or system and nature of service performed.
- Details of defects found and rectification procedure undertaken.
- Name of the person and company performing the service

All records must be available for inspection by a regulatory officer.

As you would already know, the health and safety of your staff and patrons is of great importance. Making sure air-handling systems are maintained correctly is another way of ensuring that they are not exposed to unnecessary hazards.



Disclaimer: This document is only a summary of sections of AS 3666:2002 pertaining to the maintenance of air-handling systems. Its purpose is to provide general information regarding the maintenance requirements of systems and is not in any way a verbatim account of AS 3666:2002. For further information a copy of AS 3666:2002 can be purchased from Standards Australia – 1274 Hay Street West Perth 6005.