

Environmental Health Services

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 1992 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 3666:1989 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 3666:1989 so that public health is not jeopardised.

General Information

All maintenance shall be carried out by trained personnel and in accordance with AS 3666:1989. 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 annually and cleaned as necessary

Supply air filters

- Inspected to manufacturers specifications and cleaned as 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 annually 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

Ducts and components

The following components should be inspected and maintained as indicated:

- *Coils* – inspected annually and cleaned as necessary
- *Trays and sumps* – inspected annually and cleaned as necessary
- *Condensate drains, tundishes and traps* – checked annually and lines flushed
- *Ductwork* – inspected annually near moisture producing equipment and access points and cleaned as necessary; also, drain functioning checked annually
- *Terminal units* – components inspected annually and cleaned as necessary

Cooling Towers

- Systems should be inspected monthly and be cleaned when necessary (minimum six monthly). The cleaning process shall include physical cleaning, disinfection and draining of the entire cooling water system.
- Systems that have been shut down on a seasonal basis must be cleaned before start-up.

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.

AIR-HANDLING SYSTEM MAINTENANCE TABLE

Time Period	Component	Task
Monthly	Steam and spray humidifiers	Inspect and clean as needed
	Boiling and pan type humidifiers	Inspect and clean as needed
	Cooling tower	Inspect and clean as required
Half yearly	Cooling tower	Inspect, clean, drain and disinfect
Annually	Evaporative air coolers	
	- Sump	Inspect, drain and clean
	- Wetted pads	Cleaned and replaced as needed
	- Water strainer	Cleaned where necessary
	- Air filter	Replaced
	- Drainage system	Flushed with clean fresh water
	Ductwork	Inspect and clean as needed
	Air intakes and exhaust outlets	Inspect and clean as needed
Coils	Inspect and clean as needed	
Trays and sumps	Inspect and clean as needed	
Condensate drains, tundishes and traps	Inspect and flush drainage lines	
Terminal units	Inspect and clean as needed	

Disclaimer:

This document is only a summary of sections of AS 3666:1989 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 3666:1989.

For further information a copy of AS 3666:1989 can be purchased from Standards Australia – 1274 Hay Street, West Perth 6005.