



## How to assess your building HVAC health AS-3666.4 The Performance Based Approach



This information has been developed to assist building and HVAC maintenance staff understand how the risk of microbial contamination is rated within the context of AS-3666.4 Air handling and Water Systems of Buildings Microbial Control - Performance Based Maintenance of Air handling systems (ducting and components).

This Australian Standard released in 2011 recognizes, as it should that different buildings may have varying maintenance schedules to manage microbial growth and maintain at acceptable levels due to either, the geographical location or the facility type and operational use and sets in place a simple and effective risk rating tool to calculate and manage the risk that microbial contamination presents to the person conducting business who ultimately holds the risk.



### AS-3666.4 Performance-based maintenance of air-handling systems (ducts and components)

The qualitative levels of likelihood are as per the AS 4801 risk management processes most would be familiar with E.g. A- Almost certain, B-Likely etc.

AS 3666.4 prescribes the concepts of risk characterization as per the following criteria:

**Observation:** The site inspection, as an audit, is to reveal gross errors in air-handling system function, operation or maintenance that could have a microbial growth impact.

**Likelihood:** This grades the chances of an identified problem becoming worse before the next planned maintenance visit as:



#### Insignificant

Risk factors do not presently exist.



#### Minor

Evidence of risk factors, adverse events improbable.



#### Moderate

Adverse effects resulting from microbial risk factors possible: controls in place but may fail.



#### Major

Microbial growths evident but unlikely to lead to human illness due to fortuitous mitigating controls including scheduled maintenance; attention Imminent.



#### Catastrophic

Strong evidence of microbial growth related to air handling systems; immediate intervention measures needed as existing controls have failed.



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ISO 14001- 2015 Environmental Management  
ISO 9001 - 2015 Quality Management  
AS 4801 - 2001 Health and Safety Management





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The following 6 main risk categories which must be included in the risk assessment are;

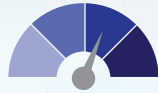
- Environment
- Site and System Characteristics
- Moisture
- Systems defects
- Air Filtration capability
- Air Quantities and overall risk.

Then using the qualitative risk level for consequence, Part 4 introduces the following out comes:



#### Extreme

Immediate remedial action is required including plant shutdown and cleaning.



#### High

Review maintenance program and expedite remedial actions including cleaning a appropriate.



#### Moderate

Review maintenance program and establish priority actions for actions deemed expedient.



#### Low

Manage by current maintenance procedures.

We are often called on as indoor air quality practitioners to remedy a situation with the indoor environment is such that there are obvious symptoms being reported by occupants and it will always come in with a catastrophic rating when we reach this point.

Most buildings tend to rate as moderate and some are high but still easily managed and remediated. If your building rates as low you either have a service regime that is very effective and you should recommend your maintenance provider to others. Or you're often not looking hard enough.

If you would like any further information on the application of this Australian Standard to your site-specific requirements please do not hesitate to contact me by email [david.jones@airconstruct.com.au](mailto:david.jones@airconstruct.com.au)

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