

# Independent Guide

## What are pipework deadlegs?



Independent workplace compliance

### Introduction

Pipework deadlegs (also known as dead ends or blind ends) are essentially lengths of pipework holding water that is not displaced daily during normal operation. This will lead to stagnation, which can provide an ideal environment for bacterial growth.

HSG274 Part 2 defines a pipework deadleg as "a length of water system pipework leading to a fitting through which water only passes infrequently when there is draw off from the fitting, providing the potential for stagnation". The definition of Dead Ends or Blind Ends is "a length of pipe closed at one end through which no water passes".

### Where can you find pipework deadlegs?

Deadlegs typically arise from pipework where something has been removed from a system e.g. a tank or sink outlet, and the associated piece of pipe was not removed and still contains water. They are also commonly found where additional supplies have been installed for upcoming expansion, which are not yet in use, e.g. future tenant drinking water supplies.

Supplies to other water systems that are required but which may get infrequent use are another common source of pipework deadlegs, e.g. closed system top up (pressurisation units) or seasonal humidification systems.

Isolating plant or outlets can also inadvertently create pipework deadlegs. This commonly occurs when an outlet is isolated locally, but there remains a length of pipework to the isolation point that still contains water. This is also common when twin compartment tanks are isolated on one side and the valve positioning often leaves a pipework deadleg on the inlet and/or the outlet.

### What are the risks and considerations for pipework deadlegs?

Stagnation allowing bacterial growth is the key issue and the risk is predominantly related to the length of pipework and volume of water it contains. However, there are several additional factors that need to be considered such as orientation and environmental conditions.

A small diameter up turned spur of pipework on a flowing cold main will provide a much lower risk than a horizontal T or a down turned spur, where gravity may assist debris collection.

The ambient temperature of the environment should also be considered. A smaller pipework deadleg on the cold system in a warm boiler room will likely pose a greater risk than a longer length of pipework in a cool car park.

### What are the control measures for pipework deadlegs?

A common question is 'What is an acceptable length of pipework for a pipework deadleg?' Unfortunately, advice seems to vary with WRAS guidance formerly suggesting no more than 2 pipe diameters as a rule of thumb and some authorities recommending a volume of less than 500ml. The HSE guidance does not specify a minimum length or minimum ratio of length to diameter.

Control measures should therefore be proportional to the risks, with removal (back to the primary supply pipe) being the ideal. Weekly flushing is an alternative option but the long-term time and cost factors of employing someone to complete this task should be considered.

Non return valves could also be installed on supplies to systems that do not get regular use to prevent any backflow related issues from occurring.

In terms of acceptable risk, once the above has been considered, if there are no alternative options available then the above suggestion of no more than 2 pipe diameters remains a useful rule of thumb but this option should be regarded as the last resort and not the default.

**This guide is of a general nature; specific advice can be obtained from Assurity Consulting.**

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