



HAZARD ALERT

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PRESSURE TESTING OF PIPE-WORK

Background:

There have been several incidents where fittings have failed on rolled groove pipe when placed under a pressure test.

A worker not involved in testing was hospitalised when a rolled groove fitting failed under test after being struck by high-pressure water.

A Plumber received severe facial injuries when he cut the capped end off a 50mm copper line under test.

A worker was killed, and his mate seriously injured when a metal cap exploded from a 300mm diameter pipe when it failed whilst under test.

Failures have occurred when testing with water or air.

Hazards:

- Failure of pipe and/or fittings under excessive pressure.
- Failure to identify if the installation is under a pressure test.

Risk:

Serious injury or death resulting from catastrophic failure when under pressure, or when pressure is released in an uncontrolled manner. For example, a blast of compressed air at 40 psi at 100mm has the potential to rupture an eardrum or cause brain damage.

Control Measures:

- When testing with compressed air, never exceed a maximum pressure above 50kPa. Any testing above this maximum must be under direction of a qualified engineer.
- Provision for a pressure gauge, stop valve and bleed valve is compulsory.
- Appropriate training and instruction in procedures for workers involved in the test.
- Designated test/exclusion zones. This may require testing conducted outside of normal working hours.
- Adequate pipe end support.
- Lock-out/tag system to prevent persons other than those involved in the test from accidentally releasing pressure.
- Consideration of the effects of hydro-static head pressure on the system in test.

For pipe-work left under pressure after the test;

- Adequate signage/information for persons other than those involved in the test.
- Protection of pipe-work and fittings with the potential to be damaged.

See also WSV publications; 'A Health and Safety Solution'-Preventing explosions when testing pipelines, www.worksafe.vic.gov.au and PPTEU Hazard Alert 'Hydrostatic testing of fire sprinkler suppression systems'

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