SAFETY ALERT

FILLING ALUMINIUM SCUBA CYLINDERS

September 2009

This safety alert is published following serious injuries to a person while filling an aluminium self-contained underwater breathing apparatus (SCUBA) cylinder in August 2009. The cylinder shattered into pieces (see photo).

This is the latest in a number of incidents involving the filling of aluminium SCUBA cylinders manufactured from 6351 alloy. The 6351 alloy was used in:

- aluminium alloy cylinders manufactured between 1972 and 1988 to specifications DOT SP6498, DOT E6498, DOT E7042, DOT E8107, DOT E8364, and DOT E8422
- Australian made aluminium alloy cylinders manufactured before 1991 to AS 1777.

OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

The *Occupational Health and Safety Act 2000* (OHS Act) requires employers to provide plant and systems of work that are safe and without risks to health, and to provide information, instruction, training and supervision to ensure workers' health and safety at work.

RISK CONTROLS

The aluminium SCUBA cylinders listed above should only be refilled in a manner that minimises the risk to people and property in the event of a failure – eg they should only be filled in a suitable enclosure.

The following control measures apply when filling cylinders, including aluminium SCUBA cylinders:

- inspect a cylinder before filling it
- do not fill, or use, a damaged cylinder – eg if there is evidence of surface gouging, cuts, dents or damaged fittings
- do not fill a cylinder that is without a valid test date stamped on it – SCUBA cylinder tests are only valid for 12 months
- do not fill a cylinder to a pressure that is greater than the working pressure stamped on it
- fill a cylinder slowly to prevent an excessive rise in temperature, or if filling it faster, remove the excessive heat during filling, by refrigerating the gas or immersing the cylinder in cold water
- do not tamper with the valve unit safety valve fitting or rupture disc
- do not approach the cylinder if you detect a leak – don't assume the leaking sound is due to a leaking connection of the filling apparatus. Evacuate the area and allow the cylinder to discharge, or discharge the cylinder once you consider it safe to do so. Only investigate the cause of the leak when the cylinder has discharged.
- flexible connections (eg hoses) should be suitably restrained before filling, otherwise they may whip if the hose bursts or disconnect when pressurised.

FURTHER INFORMATION

For further information about filling SCUBA cylinders, see AS 3848.2 – 1999 *Filling of portable gas cylinders – Part 2 Filling of portable cylinders for SCUBA and SCBA – Safe procedures.*

More information is also available at www.workcover.nsw.gov.au or from the WorkCover Assistance Service on 13 10 50.

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