WORKSAFE NEW ZEALAND | MAHI HAUMARU AOTEAROA

HSWA · HEALTH & SAFETY AT WORK ACT ·

HAZARD ALERT

22 December 2016

SCUBA CYLINDERS MANUFACTURED FROM ALUMINIUM ALLOY 6351

AT RISK CYLINDERS

Catastrophic failures involving at-risk aluminium alloy cylinders have been recorded worldwide. This has prompted WorkSafe New Zealand to issue this hazard alert to warn people testing and filling these cylinders to the potential risk of severe injuries and death.

Cylinder failure is caused by sustained load cracking in the neck and shoulder area of the cylinder.

This problem affects cylinders made from 6351 aluminium alloy. It is not limited to any one design or cylinder, or to those from any one manufacturer.

At-risk SCUBA cylinders are cylinders manufactured from aluminium alloy 6351 and aluminium alloy cylinders 15 years or older.

Aluminium alloy 6351 is known to be used in cylinders manufactured between 1972 and 1988 with the following specifications (but not limited to): DOT SP6498, DOT E6498, DOT E7042, DOT E8107, DOT, E8364 and DOT E8422.

The most recent incident, in August 2016, Sydney, NSW, was a Luxfer SCUBA cylinder that ruptured during filling (see picture). The rupture caused serious harm including partial amputation of a leg. The incident is currently under investigation by SafeWork NSW.

PREVENTING A FAILURE

The Health and Safety at Work Act 2015 requires a PCBU to ensure, so far as is reasonably practicable, the provision and maintenance of a work environment that is without risks to health and safety.

All Periodic Testers and Approved Fillers must be vigilant in making sure at-risk cylinders are up-to-date with annual visual examinations before filling. As always, check for surface gouging, cuts,

dents or damaged fittings, and if in doubt, do not fill the cylinder.

If early signs of sustained load cracking or a neck crack are identified, the cylinder must be condemned to prevent it reaching a critical state.

If you suspect a cylinder is leaking whilst filling – STOP FILLING IMMEDIATELY. Evacuate the area and wait for the cylinder to discharge before investigating the cause of the leak.

GOOD PRACTICE PREVENTS FAILURES

The following recommendations should be part of every-day good practice:

> Do not fill, or use, a damaged cylinder.

> Do not fill a cylinder that is out of test.

> 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.

> Do not tamper with the valve unit, safety valve, fitting or rupture disc.

> Maintain all equipment to prevent water being pumped into the cylinder during a fill.

Updated from 2009 ERMA safety alert.

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