



Safety alert 09/2013

Welding tanks containing flammable substances

Background

A worker used an electric arc welder to attach a bracket to a sealed metal tank. The tank had previously contained flammable liquids including methanol. When the worker commenced tack welding the bracket to the outside of the tank, the tank started to make rumbling noises and an explosion occurred. The explosion blew the lid off the tank (see Photograph 1) and pulled the tank supports out of the concrete floor. No-one was injured in this incident, but there was significant potential for serious injury or death.

Contributing factors

- The tank was drained before the welding commenced; however residual flammable liquid remained inside the tank.
- The tank was not cleaned or checked to ensure it was free of flammable substances before welding commenced.
- The hot work permit did not specify that the tank needed to be cleaned or tested before welding commenced.



Photograph 1: This tank lid was blown off in the incident.

Action required

1. Ensure a risk assessment is carried out before hot work is done to identify potential hazards and ways to control them.
2. Do not conduct welding or other hot work on tanks or other containers that contain flammable substances.
3. Ensure tanks or containers that have held flammable substances are drained and cleaned before hot work.
4. Monitor the atmosphere inside tanks or containers to ensure there are no flammable vapours or gases before hot work.
5. Ensure hot work permits are used, and that they are relevant to the hazards of the particular workplace.
6. Train staff about hot work hazards and how they are managed. Supervise staff (including contractors) to ensure safe work methods are followed.

Further information

- Australian New Zealand Standard 1674 – Safety in welding and allied processes
- WTIA Technical Note No. 7 – Health and Safety in Welding
- CSB Safety Bulletin: Seven Key Lessons to Prevent Worker Deaths During Hot Work In and Around Tanks, February 2010, available from www.csb.gov
- WorkSafe website, www.worksafe.wa.gov.au A13996378

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