

SAFETY ALERT



ELECTRIC SHOCK FROM AN ELECTRIC IMPACT WRENCH

INCIDENT

A maintenance worker received an electric shock while using portable 240V power tools in a wet area.

CIRCUMSTANCES

The contract fitter was trying to tighten a flange joint on a leaking pipe in a wet area of a coal washery. He was unable to seal the joint using hand spanners, so an electric impact wrench and an extension lead were used. While using this equipment, he received an electric shock.

This was a near miss situation, and typical of a number of other reported incidents.

INVESTIGATION

The leaking pipe was a return line from a de-watering sieve in the washing plant. The surrounding area was of steel construction, with a steel plate floor. The work area was very wet, with leakage from the flange joint contributing. There was pooled water on the floor. The fitter was also wet. The extension lead and impact wrench did not have any special measures to guard against ingress of water. The impact wrench was rated as "double insulated", also known as Class II apparatus.

Class II apparatus does not have an earth conductor, or any connection to the earth pin. If water is allowed to enter, the body of the apparatus will become live, and the power will not trip off until someone is touching it and receiving an electric shock.

RECOMMENDATIONS

The risk of injury from electric shock is significant. It must be managed by:

- Identification of hazardous situations when using portable electrical equipment,
- Evaluation of the the risk to people, livestock or property in each situation,
- Development and implementation of suitable control measures to control the risk.

Control measures should include:

- Avoid using portable electrical hand tools in wet areas.
- Any electrical equipment used in wet areas must have a moisture ingress rating of at least IPX5.
- Assessment of double insulated (Class II) apparatus for suitability in certain situations.

Additional guidance material is available in AS 3012 "Electrical Installations – Construction and Demolition Sites".

APPROVED

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