



# SAFETY BULLETIN

## Portable power tools

### BACKGROUND

There have been a number of electric shock incidents involving Class II (Double insulated) 240 volt alternating current hand-held power tools. Contributing factors have included:

- the work environment not appropriate for the use of 240 volt alternating current power tools and associated leads, with a consequent ingress of water into the tool
- the work environment changing with a consequent ingress of water into the tool
- use of damaged tools
- not adhering to the tool manufacturer's safety instructions. Below is a quote from manufacturer's literature:

***Consider work area environment:***

*Don't expose power tools to rain*

*Don't use power tools in damp or wet locations ...*

***Guard against electric shock:***

*Prevent body contact with grounded surfaces. For example pipes, radiators, ranges, refrigerator enclosures.*

- tools poorly maintained
- associated flexible leads in poor condition
- associated power outlets not correctly IP rated
- Deficient contractor management practices.

Typical photographs of equipment involved in electric shock incidents or incidents which present an unacceptable risk of electric shock are attached.





### RECOMMENDATIONS

All mines should review the use of 240 volt alternating current hand-held power tools at their site. As part of that review, the mine should consider:

- assessment of all work environments where portable 240 volt alternating current power tools may be used to determine the suitability of the tool for the environment. Note: tools in good condition can still be a source of electric shock when used incorrectly or in the wrong environment.

- applying the hierarchy of risk controls and substituting 240 volt alternating current power tools with extra-low voltage battery-powered tools or other less-hazardous energy sources
- incorporating the manufacturer's instructions in safe work procedures
- implementing an inspection and testing regime for hand-held power tools, associated leads and power outlets that are consistent with relevant Australian Standards and other publications
- implementing a contractor management plan that includes appropriate equipment specifications, inspections and tests, and an appropriate level of supervision by mine management.

### Photographs

	
<p>Power outlet unsuitable for the environment</p>	<p>Socket outlet not rated for the location, poor wiring standards to the socket outlet and the inappropriate use of piggy-back plug / sockets</p>
	
<p>Impact wrench – brush holder damaged</p>	<p>Impact wrench – cracked casing</p>



Damaged impact wrench lead



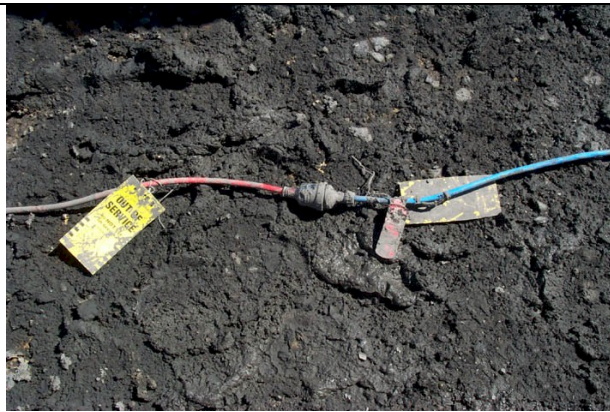
Defective cable connection to the plug



Plug inadequately IP-rated



Damaged extension lead due to poor installation practices.



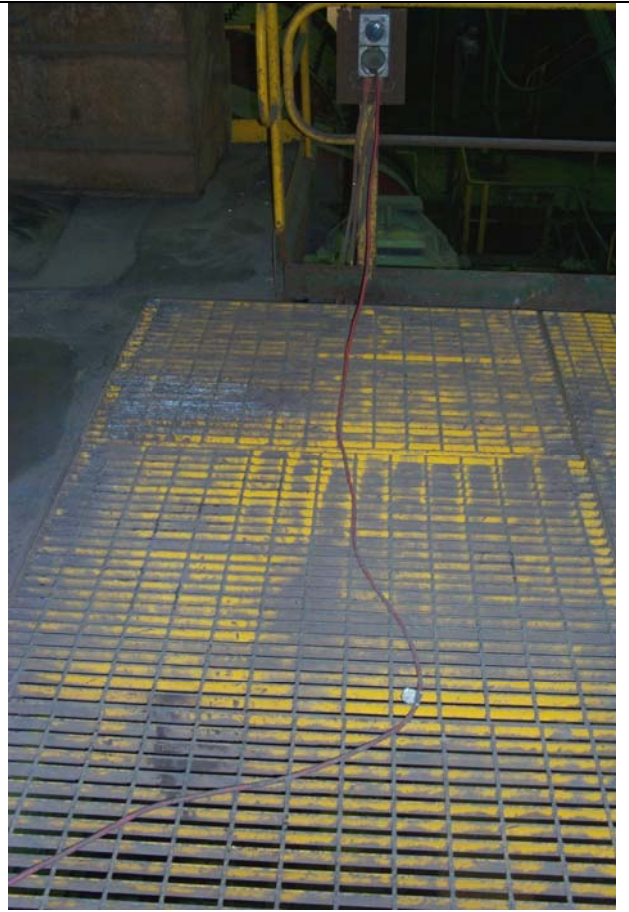
Leads not suitable for the environment and poorly installed



Plug not suitable for the environment, poorly installed and poorly maintained



Angle grinder not suitable for the wet and muddy environment



Extension lead poorly installed

## **GUIDANCE MATERIAL**

### **Australian Standards**

- AS/NZS 3760: In-service safety inspection and testing of electrical equipment
- AS/NZS 3012: Electrical installations - Construction and demolition sites

### **WorkCover NSW publications**

- Code of Practice: Electrical Practices for Construction work
- Contractor's Checklist - Electrical Practices for Construction work

**NOTE:** Please ensure all relevant people in your organisation receive a copy of this Safety Bulletin, and are informed of its content and recommendations. This Safety Bulletin should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's notice board.

**Signed**

A handwritten signature in black ink, appearing to read 'Rob Regan', written in a cursive style.

**Rob Regan**  
**DIRECTOR**  
**MINE SAFETY OPERATIONS BRANCH**  
**NSW DEPARTMENT OF PRIMARY INDUSTRIES**

View more safety alerts at [www.dpi.nsw.gov.au/minerals/safety/safety-alerts](http://www.dpi.nsw.gov.au/minerals/safety/safety-alerts). If you would like to receive safety alerts by email, send your contact details to [mine.safetyalert@dpi.nsw.gov.au](mailto:mine.safetyalert@dpi.nsw.gov.au)