



SAFETY BULLETIN

Safe use of electric welders

BACKGROUND

A recent Industrial Relations Court of NSW hearing into the death of a person while using an electric welder, and continued occurrences of poor work practices and welding equipment found in poor condition at mine sites, have instigated this Safety Bulletin.

Testing as part of the investigation into the death identified “that the mere presence of dampness or perspiration on clothing resulted in the welding task falling into a high-risk category of welding”.

AS 1674.2: 2007 - Electrical 'Safety in Welding and Allied Processes' identifies that “in general, the wetter the person’s skin and the larger the surface area of body contact, the higher will be the current flowing through the body and, therefore, the greater will be the risk of electrocution ... where there is dampness or perspiration, 25 volt AC may be enough to give a fatal electric shock ...”.

If the welding equipment is in poor condition or the work practices are deficient, the risk of electrocution is also greatly increased.

RECOMMENDATIONS

All mines should review their welding equipment, processes and procedures and ensure the following elements are provided for:

- The use of DC welders in preference to AC welders
- The welding machines, welding cables and welding appliances are suitable for the environment in which they are used
- Voltage reduction devices (VRDs) or equivalent devices are provided, used and maintained
- The welding machines, welding cables and welding appliances are in good condition
- The welding machines, welding cables and welding appliances are regularly checked by a competent person and defective equipment is restored to a fit-for-purpose state before it is re-used
- Procedures and processes comply with *AS 1674.2 'Safety in welding and allied processes – Electrical'* as a minimum
- A risk assessment checklist and procedures for welding work, including the identification of different welding environments and the required risk controls for the type of environment
- Employees and contractors who carry out or supervise welding work are trained in the use of these checklists and procedures
- The use of welding mats and other insulated mediums

- Procedures for identifying when to change work clothing due to dampness / perspiration
- Dry clothing and welding PPE is always available.

Other useful references:

AS 1796:2001 'Certification of welders and welding supervisors'

AS/NZS 1995:2003 'Welding cables'

AS/NZS 3195:2002 'Approval and test specification - Portable machines for electric arc welding and allied processes'

AS 60974.1:2006 'Arc welding equipment - Welding power sources (IEC 60974-1:2000, MOD)'

AS 60974.6:2006 'Arc welding equipment - Limited duty portable arc welding and allied process power sources (IEC 60974-6:2003, MOD)'

AS 60974.11:2005 'Arc welding equipment - Electrode holders'

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



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MINE SAFETY OPERATIONS BRANCH
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