Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

Monthly Safety and Health Snapshot

for the Western Australian minerals sector

Welding hazards

Issued May 2018

Exposure to welding hazards can result in serious injuries, illness or fatalities. Some welding hazards include electric shock, radiation, burns, heat stress, fire, explosions, fumes and gas. Always make sure your location is safe, your tools and equipment are suitable, appropriate personal protective equipment is worn and correct materials and procedures are used.

This snapshot covers the period from 1 February 2017 to 31 January 2018 when there were 1,219 injuries and 2,494 notifiable incidents (specific reporting categories). Of these, 11 injuries and 57 notifiable incidents involved welding hazards.

For more information about occupational safety and health, visit our website **www.dmirs.wa.gov.au**

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Department of Mines, Industry Regulation and Safety

Injuries by employment type

4 Company

7 Contractor

Injuries by part of body

5 of the 11 injuries were to **hand**

2 of the 11 injuries were to **foot** (including ankle)

Injuries by severity

7 of the 11 injuries identified as welding hazard injuries were **classified as serious**

3 of the 11 injuries were **lost time injuries**

Injuries by type and nature

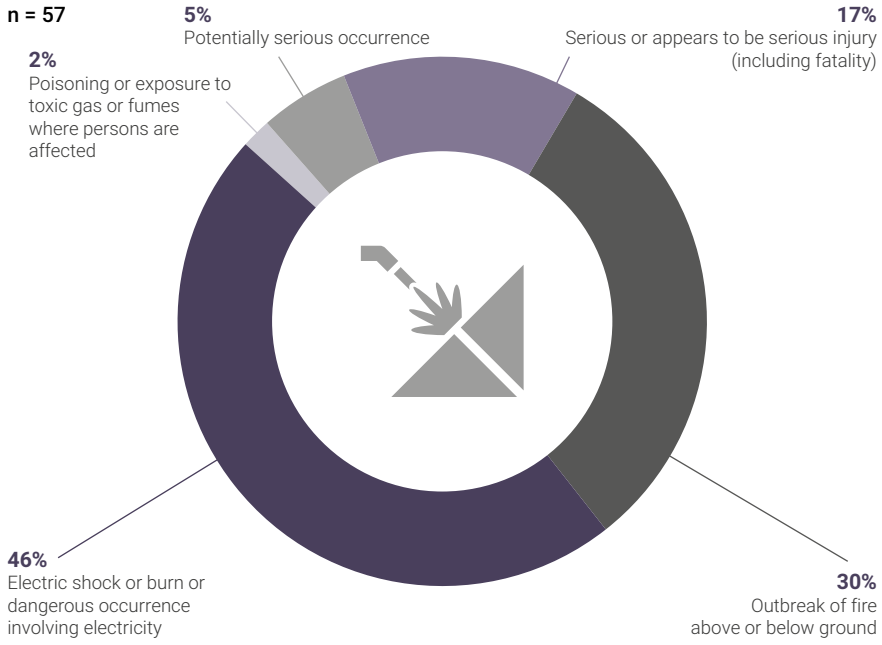
5 burns due to contact with hot substances and welding flash

2 fractures due to entering the line-of-fire

2 lacerations due to entering the line-of-fire

2 sprains and strains due to overexertion while moving an object

Notifiable incidents by reporting category



Note: Potentially serious and serious occurrences include incidents related to asbestos, burns, line-of-fire and sprains and strains.

Notifiable incidents by area

55 of the 57 notifiable incidents occurred during **surface operations**

2 of the 57 notifiable incidents occurred during **underground operations**

Note: The information in this snapshot has come from a keyword search of incident reports.

Some recent incidents

Outbreak of fire 22/11/17

A boilermaker was working underneath a haul truck in a heavy vehicle mechanical workshop, welding a bracket onto the truck's fuel tank. After changing welding rods to conduct a second welding pass, he noticed an oily rag on fire beside him, and called out. When he couldn't put out the fire by patting it with his welding gloves on, he moved the rag out from underneath the truck, where the supervisor had arrived and used a water hose to put out the fire. The job was stopped and the incident reported. It is suspected that, at the change-out of welding rods, the remainder of the used hot welding rod dropped onto the oily rag, causing it to ignite.

Electric shock 31/10/17

A boilermaker was welding inside the chute of a vessel at a processing plant. While changing out the electrodes, he received an electric shock. It was humid and wet inside the chute and the operator was sweating heavily, causing his gloves to become wet inside and out.

Assessing the risks

Before commencing work, assess the potential for exposure to welding hazards, such as:

- electrical shock from contact with live components
- radiation burns to the eyes or body due to the welding arc
- body burns from weld splatter or hot metal
- exposure to fire or explosions
- inhalation of fumes from the welding rod or surface being welded
- contact with noxious process materials in the work area.

Safe work practices

Examples include:

Keep the welding leads clear of your body and other people.

Do not weld while standing in water or out in the rain, and change any clothing that becomes wet.

Make work area safe by removing unnecessary equipment and any flammable material.

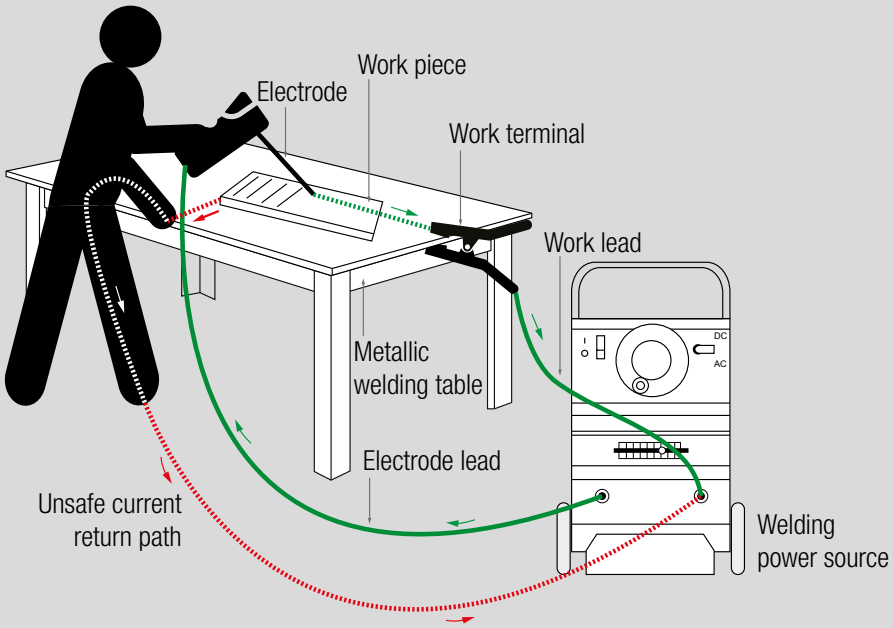
For more information see *Welding - mine safety matters pamphlet*

Spotlight on *Mines Safety Bulletin No. 117*

Preventing electric shocks during welding

22 December 2014

The welding electrical circuit comprises a power source, electrode lead, electrode, work piece, work terminal and work lead. An electric shock may result if a person becomes part of the welding electrical circuit during welding.



Example showing the safe current path (green) and unsafe current return path (red dots) if welder with inadequate PPE becomes part of the welding electrical circuit by touching the table

Contributory factors:

The most common ways that a person becomes part of the welding electrical circuit are by:

- inadvertently touching exposed metallic or conductive parts during welding
- welding in wet or humid conditions, which increases the risk of inadvertent contact through water or sweat, which are conductive
- not using fit-for-purpose personal protective equipment (PPE)
- using a welding electrical circuit that is faulty due to inadequate testing and maintenance.