



Three things to watch out for when welding - wetness, improper earthing and inappropriate PPE

Welders onboard face an array of hazards, with electric shock being the most serious. The human body is a good conductor of electricity and even low currents can lead to paralysis, burns or even death.

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The [Canadian Centre for Occupational Health and Safety](#) states that contact with just 20 milliamps of current can be fatal. As a comparison, a common household circuit breaker may be rated at 15, 20, or 30 amps. The electric shock can also cause the seafarer to fall from height due to his reaction to the electric shock. This can be fatal or lead to serious injury. So how can welders minimize the risk of personal harm? The key is proper insulation through dry surroundings, effective grounding and proper clothing.

Electrical resistance is lowered in the presence of water or moisture. Therefore welders have to take extra precautions when working in damp conditions, including their own perspiration. When welding on deck, wet conditions can be a result of sea sprays or waves rushing up the deck. As an example, see the Hong Kong [Flag State report on electrocution of fitter](#).

The work piece that is being welded should be connected to an electrical ground and the connection should be separate from the welding circuit. In other words, it should be correctly earthed or grounded. A two cable go and return system should be used with the return cable of the welding set and each workpiece separately earthed to the ship's structure ([Code of Safe Working Practices](#)). This is done to make sure that the work piece and the ground have the same potential and maximizes personal protection in the event of failure of the insulation. Vessels may also use alternative methods for protection against insulation failure, and some welding sets may not require earthing of the workpiece.

Lastly, the clothing and other PPE, such as non-conducting footwear and gloves should be dry so as to provide maximum insulation to the welder. Proper safety gear is perhaps the single most important safety component for welders.

Further material

Loss Prevention posters [Don't become part of the circuit](#)