

## **MARINE DEPARTMENT NOTICE NO. 18 OF 2003**

(Miscellaneous Information)

### **Precautions Against Electric Shock from Electric Arc Welding**

A worker was electrocuted by electric arc welding equipment last year in a marine construction work site. The accident could have been avoided had basic safety precautions been observed.

2. Owners, Operators, Masters and Persons-in-charge of locally licensed vessels, Ship-repairers, and Principal Contractors and Sub-contractors of Marine Construction Works are reminded to pay particular attention to the following precautionary measures when using electric arc welding in order to avoid similar accidents.

#### 2.1 Electric Welding Equipment

- (i) Welding machines should be equipped with an electric shock protection device to reduce “no-load” voltage to a value not exceeding 25 volt rms.
- (ii) A ‘go and return’ system using two cables from the welding set should be adopted; the welding return cable should be firmly clamped to the workpiece. Use of a single cable with hull return should be avoided.
- (iii) Metal casings of welding transformers should be properly earthed.
- (iv) Welding machine, cables, electrode holders and other equipment should be regularly inspected for their fitness before use.

#### 2.2 Safe Working Practices

- (i) Do not weld when exposed to rain.
- (ii) Do not stand in a puddle of water whilst welding.
- (iii) Do not use damp or damaged electrodes.

- (iv) Avoid direct contact of the electrode or the exposed metal part of the electrode holder with bare hands or any part of the body when inserting the electrode into the holder.
- (v) Remove the electrode when the welding operation is completed or temporarily suspended for a period of time.
- (vi) Switch off the mains supply during tea, rest and meal breaks.
- (vii) When welding in a cramped space with a risk of body contact with metal structures, use a non-conducting board or rubber mat to insulate the welding operator from metal structure.
- (viii) Wear suitable, dry welding protective gear including non-conducting gloves, foot-wear and protective clothing.
- (ix) The welding operator should be properly trained, experienced and familiar with the equipment being used.

**S. Y. TSUI**  
**Director of Marine**

Marine Department  
Government of the HKSAR  
Date: 6 February 2003  
Action File Ref: SD/MISS/117/1( 2 )