

# Fleet Safety Manual

## 7.B.4 - HOTWORK

### 1 PURPOSE

- a) To reduce the possibility of injury or accident by ensuring that hotwork aboard the vessel is carried out in a controlled and safe manner.

#### 1.1 HOTWORK

- a) Hotwork is defined as work that creates a source of ignition or a temperature sufficiently high to ignite a flammable gas mixture or to cause combustion of the item(s) involved in the process. This includes any work requiring the use of welding, burning or soldering equipment, drilling, grinding, chipping or any other work where flame is used or sparks are produced. Normal maintenance work aboard the vessel that uses drilling or grinding, and where there is a possibility of sparking or heating, but there is no flammable gas mixture present nor is there a likely danger of combustion from heating, does not require the completion of a hotwork permit.

### 2 RESPONSIBILITIES

#### 2.1 CHIEF ENGINEER

- a) The Chief Engineer is responsible to ensure that this procedure is followed when hotwork is carried out onboard. The Chief Engineer, or their designate shall issue all Hotwork Authorization Permits
- b) Under circumstances where the vessel is in a non-operational period (refit, maintenance lay-up, etc.) and the Chief Engineer will not be available for a prolonged period of time, the onboard engineer-in-charge may issue Hotwork Authorization Permits to complete maintenance work.
- c) The Chief Engineer is responsible to identify any Hotwork Zone designated as authorized for hotwork and to ensure that it is properly equipped to safely carry out hotwork.

#### 2.2 IMMEDIATE SUPERVISOR

- a) The Immediate Supervisor of the personnel onboard is responsible to ensure that when performing hotwork, personnel are fully conversant with this procedure.

## **2.3 PERSONNEL PERFORMING HOTWORK**

- a) Personnel performing hotwork are to do so in accordance with this procedure and in accordance with the terms and conditions of the Hotwork Permit.

## **3 INSTRUCTION**

### **3.1 GENERAL**

- a) No hotwork shall be carried out aboard any Canadian Coast Guard (CCG) vessel where there is a possibility of ignition of a flammable gas mixture or there is a possibility of combustion caused by heating, unless there is in place a Valid Hotwork Authorization Permit or the work is being performed in an approved hotwork zone.
- b) A fitted hotwork zone area refers to an area designated and equipped as an authorised hotwork zone in which hotwork may be performed. In the majority of cases this shall be the engineer's workshop.
- c) No hotwork shall be carried out on any pipe, tank or in any area where there is a potential for the presence of an inflammable gas, vapour or dust, unless the area has been freed of gas, tested by a qualified person, and found to be safe.
- d) Welding on the sides of fuel tanks or lube oil tanks is strictly forbidden unless the tanks are gas free or inert.
- e) No hotwork of any sort is to take place while the vessel is involved in bunkering operations.
- f) All welding performed aboard CCG vessels that involves the hull, through hull fittings, lifting gear, secure points, anchor points shall be conducted by a qualified person and certified to the satisfaction of the Transport Canada Marine Safety Board (TCMSB) before the device or appliance is put into service. Emergency repairs shall be subjected to minimum loading until the repair has been tested and is certified as sound.
- g) Some ports have developed their own regulations regarding the conduct of hotwork. A check shall be made with the port authority by the officer-in-charge prior to approving any in-port hot work.

### **3.2 PRIOR TO PERFORMING HOTWORK**

- a) At anytime that hotwork is being performed outside the designated Hotwork Zone, a Hotwork Authorization Permit is to be completed and signed by the Chief Engineer or their designate, prior to hotwork being conducted.
- b) These permits are to be kept on file for a period of one year.
- c) When a permit has been issued the Engineer on Watch and Officer on Watch are to be advised prior to commencement of hotwork.

### 3.3 PERSONNEL SAFETY

- a) The person(s) who are to perform the hotwork must satisfy the Chief Engineer that they are competent in the use of the equipment.
- b) Suitable Personnel Protective Equipment (PPE) must be worn while performing hotwork. If the situation warrants the use of respirators shall also be worn.
- c) Personnel safety issues have to be taken into consideration:
  - burns,
  - noxious fumes and gases,
  - fire and explosions,
  - electric shock,
  - tripping and fatigue.

### 3.4 PERFORMING HOTWORK

- a) When hotwork is being performed, a fire watch must be maintained at all times. A minimum of one person with a fire extinguisher close at hand is required. The fire watch, depending upon the size, area and scope of the hotwork, may have to extend to adjacent compartments.
- b) The work area must be ventilated, if possible, to allow for air replenishment for the personnel in the area. This reduces the health hazard of breathing noxious fumes or being in a work environment that has a high concentration of noxious fumes.

### 3.5 POST HOTWORK

- a) Once the hotwork has been completed the equipment is to be secured.
- b) Hot surfaces must be duly marked to avoid accidental personal burns.
- c) Once the area is secured then the fire watch equipment may be returned to its normal position. The work area shall be revisited for a period of 30 minutes to ensure that no risk of fire exists.

## 4 DOCUMENTATION

- [Coast Guard Standard – Welding Health and Safety Technical Program \(DF0/5762\)](#)
- Hotwork Authorization Permits (Annex D – Forms)
- Equipment maintenance record
- Log Book Entries
- Training Records

