

Static Electricity (effective September 25, 2008) The revised standard resulted from an employee who was using a high pressure water washing sprayer to clean flammable sludge from the interior of a tanker truck with a squeegee when an explosion occurred from within the tank blowing the employee off the top of the truck and killing him. The amendments clarify to employers consistent with the NFPA 77-2007, that 1) Section 5168 applies to water cleaning operations and grit blasting, 2) the components of various cleaning systems as specified are to be grounded as well as bonded and, 3) that prior to beginning cleaning operations on tanks and vessels, the requirements of Section 5420 are to be complied with. The amendments also update Section 5168 with respect to static electricity control for steam cleaning which can create very large charge densities according to the NFPA 77 standard and increase the potential for static electricity. <http://www.dir.ca.gov/oshsb/staticelectricityapprvdtxt.pdf>

**STANDARDS PRESENTATION  
TO  
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD**

Attachment No. 1  
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Amend Section 5168 to read as follows:

§ 5168. Static Electricity.

(a) Processes or operations involving the use of oxidizing agents such as chlorates, perchlorates or peroxides, shall be effectively grounded.

(b) The nozzle of air, high pressure water cleaning systems, grit cleaning systems, inert gas, and steam lines or hoses, when used in the cleaning or ventilation of tanks and vessels that may contain hazardous concentrations of flammable gases or vapors, shall be grounded and bonded to the tank or vessel shell. Bonding devices shall not be attached nor detached in hazardous concentrations of flammable gases or vapors. Before starting work, precautions shall be taken to prevent ignition of flammable atmospheres in tanks and vessels in accordance with the requirements of Section 5420 of these Orders.

EXCEPTION: High pressure water cleaning system nozzles used to clean tanks or vessels 100 cubic meters or less in size need not be bonded to the tank or vessel shell, provided all conductive components are grounded and it is not possible for steam to enter the tank or vessel.

(c) Bonding and grounding devices which are temporarily clamped or clipped to movable equipment shall have a conductor of ample length to assure the effective attachment of the device.

(d) When attaching bonding and grounding clamps or clips, a secure and positive metal to metal contact shall be made. Such attachments shall be made before closures are opened and substance movements are started and shall not be broken until after substance movements are stopped and closures are made.

(e) Steam Cleaning. Steam cleaning components shall be conductive and grounded. The conductive components of the tank or vessel shall be grounded and bonded.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

Amend Section 6775 to read:

§ 6775. Static Electricity.

(a) Where not effectively grounded and/or bonded by contact or connection, provision shall be made to prevent the accumulation of static electrical charges which may create a source of ignition in the presence of flammable vapors or gases. This order applies specifically, but is not necessarily limited to, the following operations:

- (1) Blowing or agitating with air.
- (2) Loading and unloading tank cars and tank trucks.
- (3) Filling metal drums or containers.
- (4) Abrasive Blasting.
- (5) Hydroblasting.

EXCEPTION: Bonding is not required where vehicles are loaded or unloaded exclusively with products not having a static accumulating tendency.

(b) Stationary tanks containing flammable liquids and Class II combustible liquids, not inherently grounded by contact or by connection to a grounded pipe line, shall be grounded.

(c) The nozzle of air, high pressure water cleaning systems, grit cleaning systems, inert gas and steam lines or hoses when used in the cleaning or ventilation of tanks and vessels that contain hazardous concentrations of flammable gases or vapors, shall be grounded and bonded to the tank or vessel shell. Bonding devices shall not be attached nor detached in hazardous concentrations of flammable gases or vapors. Before starting work, precautions shall be taken to prevent ignition of flammable atmospheres in tanks and vessels in accordance with the requirements of Sections 5168 and 5420 of the General Industry Safety Orders.

EXCEPTION: High pressure water cleaning system nozzles used to clean tanks or vessels 100 cubic meters or less in size need not be bonded to the tank or vessel shell, provided all conductive components are grounded and it is not possible for steam to enter the tank or vessel.

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