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must be from a safe and accessible location.

(4) You must ensure that automatic pumps are used when gravity flow from the bottom drain is impractical.

(d) When must my conveyor system shut down automatically? If your conveyor system is used with a dip tank, the system must shut down automatically:

(1) If there is a fire; or

(2) If the ventilation rate drops below what is required by paragraph (b) of § 1910.124.

(e) What ignition and fuel sources must be controlled? (1) In each vapor area and any adjacent area, you must ensure that:

(i) All electrical wiring and equipment conform to the applicable hazardous (classified)-area requirements of subpart S of this part (except as specifically permitted in paragraph (g) of § 1910.126); and

(ii) There are no flames, spark-producing devices, or other surfaces that are hot enough to ignite vapors.

(2) You must ensure that any portable container used to add liquid to the tank is electrically bonded to the dip tank and positively grounded to prevent static electrical sparks or arcs.

(3) You must ensure that a heating system that is used in a drying operation and could cause ignition:

(i) Is installed in accordance with NFPA 86A–1969, Standard for Ovens and Furnaces (which is incorporated by reference in § 1910.6 of this part);

(ii) Has adequate mechanical ventilation that operates before and during the drying operation; and

(iii) Shuts down automatically if any ventilating fan fails to maintain adequate ventilation.

(4) You also must ensure that:

(i) All vapor areas are free of combustible debris and as free as practicable of combustible stock;

(ii) Rags and other material contaminated with liquids from dipping or coating operations are placed in approved waste cans immediately after use; and

(iii) Waste can contents are properly disposed of at the end of each shift.

(5) You must prohibit smoking in a vapor area and must post a readily

visible “No Smoking” sign near each dip tank.

(f) What fire protection must I provide? (1) You must provide the fire protection required by this paragraph (f) for:

(i) Any dip tank having a capacity of at least 150 gallons (568 L) or a liquid surface area of at least 4 feet² (0.38 m²); and

(ii) Any hardening or tempering tank having a capacity of at least 500 gallons (1893 L) or a liquid surface area of at least 25 feet² (2.37 m²).

(2) For every vapor area, you must provide:

(i) Manual fire extinguishers that are suitable for flammable and combustible liquid fires and that conform to the requirements of § 1910.157; and

(ii) An automatic fire-extinguishing system that conforms to the requirements of subpart L of this part.

(3) You may substitute a cover that is closed by an approved automatic device for the automatic fire-extinguishing system if the cover:

(i) Can also be activated manually;

(ii) Is noncombustible or tin-clad, with the enclosing metal applied with locked joints; and

(iii) Is kept closed when the dip tank is not in use.

(g) To what temperature may I heat a liquid in a dip tank? You must maintain the temperature of the liquid in a dip tank:

(1) Below the liquid’s boiling point; and

(2) At least 100 °F (37.8 °C) below the liquid’s autoignition temperature.

§ 1910.126 Additional requirements for special dipping and coating operations.

In addition to the requirements in §§ 1910.123 through 1910.125, you must comply with any requirement in this section that applies to your operation.

(a) What additional requirements apply to hardening or tempering tanks?

(1) You must ensure that hardening or tempering tanks:

(i) Are located as far as practicable from furnaces;

(ii) Are on noncombustible flooring; and

(iii) Have noncombustible hoods and vents (or equivalent devices) for venting to the outside. For this purpose, vent ducts must be treated as flues and kept away from combustible materials, particularly roofs.

(2) You must equip each tank with an alarm that will sound if the temperature of the liquid comes within 50 °F (10 °C) of its flashpoint (the alarm set point).

(3) When practicable, you must also provide each tank with a limit switch to shut down the conveyor supplying work to the tank.

(4) If the temperature of the liquid can exceed the alarm set point, you must equip the tank with a circulating cooling system.

(5) If the tank has a bottom drain, the bottom drain may be combined with the oil-circulating system.

(6) You must not use air under pressure when you fill the dip tank or agitate the liquid in the dip tank.

(b) What additional requirements apply to flow coating? (1) You must use a direct low-pressure pumping system or a 10-gallon (38 L) or smaller gravity tank to supply the paint for flow coating. In case of fire, an approved heat-actuated device must shut down the pumping system.

(2) You must ensure that the piping is substantial and rigidly supported.

(c) What additional requirements apply to roll coating, roll spreading, or roll impregnating? When these operations use a flammable or combustible liquid that has a flashpoint below 140 °F (60 °C), you must prevent sparking of static electricity by:

(1) Bonding and grounding all metallic parts (including rotating parts) and installing static collectors; or

(2) Maintaining a conductive atmosphere (for example, one with a high relative humidity) in the vapor area.

(d) What additional requirements apply to vapor degreasing tanks? (1) You must ensure that the condenser or vapor-level thermostat keeps the vapor level at least 36 inches (91 cm) or one-half the tank width, whichever is less, below the top of the vapor degreasing tank.

(2) When you use gas as a fuel to heat the tank liquid, you must prevent solvent vapors from entering the air-fuel

mixture. To do this, you must make the combustion chamber airtight (except for the flue opening).

(3) The flue must be made of corrosion-resistant material, and it must extend to the outside. You must install a draft diverter if mechanical exhaust is used on the flue.

(4) You must not allow the temperature of the heating element to cause a solvent or mixture to decompose or to generate an excessive amount of vapor.

(e) What additional requirements apply to cyanide tanks? You must ensure that cyanide tanks have a dike or other safeguard to prevent cyanide from mixing with an acid if a dip tank fails.

(f) What additional requirements apply to spray cleaning tanks and spray degreasing tanks? If you spray a liquid in the air over an open-surface cleaning or degreasing tank, you must control the spraying to the extent feasible by:

(1) Enclosing the spraying operation; and

(2) Using mechanical ventilation to provide enough inward air velocity to prevent the spray from leaving the vapor area.

(g) What additional requirements apply to electrostatic paint detearing? (1) You must use only approved electrostatic equipment in paint-detearing operations. Electrodes in such equipment must be substantial, rigidly supported, permanently located, and effectively insulated from ground by nonporous, noncombustible, clean, dry insulators.

(2) You must use conveyors to support any goods being paint deteared.

(3) You must ensure that goods being electrostatically deteared are not manually handled.

(4) Between goods being electrostatically deteared and the electrodes or conductors of the electrostatic equipment, you must maintain a minimum distance of twice the sparking distance. This minimum distance must be displayed conspicuously on a sign located near the equipment.

(5) You must ensure that the electrostatic equipment has automatic controls that immediately disconnect the power supply to the high-voltage transformer and signal the operator if:

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- (i) Ventilation or the conveyors fail to operate;
 - (ii) A ground (or imminent ground) occurs anywhere in the high-voltage system; or
 - (iii) Goods being electrostatically deteared come within twice the sparking distance of the electrodes or conductors of the equipment.
- (6) You must use fences, rails, or guards, made of conducting material and adequately grounded, to separate paint-detearing operations from storage areas and from personnel.
- (7) To protect paint-detearing operations from fire, you must have in place:
- (i) Automatic sprinklers; or
 - (ii) An automatic fire-extinguishing system conforming to the requirements of subpart L of this part.
- (8) To collect paint deposits, you must:
- (i) Provide drip plates and screens; and
 - (ii) Clean these plates and screens in a safe location.

Subpart I—Personal Protective Equipment

AUTHORITY: Sections 4, 6, and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, and 657); Secretary of Labor's Order No. 12-71 (36 FR 8754), 8-76 (41 FR 25059), 9-83 (48 FR 35736), 1-90 (55 FR 9033), 6-96 (62 FR 111), 3-2000 (65 FR 50017), 5-2002 (67 FR 65008), or 5-2007 (72 FR 31160), as applicable, and 29 CFR Part 1911.

§ 1910.132 General requirements.

- (a) *Application.* Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.
- (b) *Employee-owned equipment.* Where employees provide their own protective

equipment, the employer shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.

(c) *Design.* All personal protective equipment shall be of safe design and construction for the work to be performed.

(d) *Hazard assessment and equipment selection.* (1) The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the employer shall:

- (i) Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;
- (ii) Communicate selection decisions to each affected employee; and,
- (iii) Select PPE that properly fits each affected employee.

NOTE: Non-mandatory Appendix B contains an example of procedures that would comply with the requirement for a hazard assessment.

(2) The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.

(e) *Defective and damaged equipment.* Defective or damaged personal protective equipment shall not be used.

(f) *Training.* (1) The employer shall provide training to each employee who is required by this section to use PPE. Each such employee shall be trained to know at least the following:

- (i) When PPE is necessary;
- (ii) What PPE is necessary;
- (iii) How to properly don, doff, adjust, and wear PPE;
- (iv) The limitations of the PPE; and,
- (v) The proper care, maintenance, useful life and disposal of the PPE.

(2) Each affected employee shall demonstrate an understanding of the training specified in paragraph (f)(1) of this section, and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.