

§ 1910.123

- (e) What ignition and fuel sources must be controlled?
- (f) What fire protection must I provide?
- (g) To what temperature may I heat a liquid in a dip tank?

§ 1910.126 *Additional requirements for special dipping and coating operations.*

- (a) What additional requirements apply to hardening or tempering tanks?
- (b) What additional requirements apply to flow coating?
- (c) What additional requirements apply to roll coating, roll spreading, or roll impregnating?
- (d) What additional requirements apply to vapor degreasing tanks?
- (e) What additional requirements apply to cyanide tanks?
- (f) What additional requirements apply to spray cleaning tanks and spray degreasing tanks?
- (g) What additional requirements apply to electrostatic paint detearing?

§ 1910.123 **Dipping and coating operations: Coverage and definitions.**

(a) Does this rule apply to me? (1) This rule (§§ 1910.123 through 1910.126) applies when you use a dip tank containing a liquid other than water. It applies when you use the liquid in the tank or its vapor to:

- (i) Clean an object;
- (ii) Coat an object;
- (iii) Alter the surface of an object; or
- (iv) Change the character of an object.

(2) This rule also applies to the draining or drying of an object you have dipped or coated.

(b) What operations are covered? Examples of covered operations are paint dipping, electroplating, pickling, quenching, tanning, degreasing, stripping, cleaning, roll coating, flow coating, and curtain coating.

(c) What operations are not covered? You are not covered by this rule if your dip-tank operation only uses a molten material (a molten metal, alloy, or salt, for example).

(d) How are terms used in §§ 1910.123 through 1910.126 defined?

Adjacent area means any area within 20 feet (6.1 m) of a vapor area that is not separated from the vapor area by tight partitions.

Approved means that the equipment so designated is listed or approved by a nationally recognized testing laboratory, as defined by § 1910.7.

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Autoignition temperature means the minimum temperature required to cause self-sustained combustion, independent of any other source of heat.

Combustible liquid means a liquid having a flash point of 100 °F (37.8 °C) or above.

Dip tank means a container holding a liquid other than water and that is used for dipping or coating. An object may be immersed (or partially immersed) in a dip tank or it may be suspended in a vapor coming from the tank.

Flammable liquid means a liquid having a flashpoint below 100 °F (37.8 °C).

Flashpoint means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite if tested in accordance with the definition of “flashpoint” in § 1910.1200(c).

Lower flammable limit (LFL) means the lowest concentration of a material that will propagate a flame. The LFL is usually expressed as a percent by volume of the material in air (or other oxidant).

Vapor area means any space containing a dip tank, including its drain boards, associated drying or conveying equipment, and any surrounding area where the vapor concentration exceeds 25% of the LFL of the liquid in the tank.

You means the employer, as defined by the Occupational Safety and Health Act of 1970 (29 U.S.C. 651 *et seq.*).

§ 1910.124 **General requirements for dipping and coating operations.**

(a) What construction requirements apply to dip tanks? Any container that you use as a dip tank must be strong enough to withstand any expected load.

(b) What ventilation requirements apply to vapor areas? (1) The ventilation that you provide to a vapor area must keep the airborne concentration of any substance below 25% of its LFL.

(2) When a liquid in a dip tank creates an exposure hazard covered by a standard listed in subpart Z of this part, you must control worker exposure as required by that standard.

(3) You may use a tank cover or material that floats on the surface of the liquid in a dip tank to replace or supplement ventilation. The method or

combination of methods you choose must maintain the airborne concentration of the hazardous material and the worker's exposure within the limits specified in paragraphs (b)(1) and (b)(2) of this section.

(4) When you use mechanical ventilation, it must conform to the following standards that are incorporated by reference as specified in §1910.6:

(i) ANSI Z9.2-1979, Fundamentals Governing the Design and Operation of Local Exhaust Systems;

(ii) NFPA 34-1995, Standard for Dip Tanks Containing Flammable or Combustible Liquids;

(iii) ACGIH's "Industrial Ventilation: A Manual of Recommended Practice" (22nd ed., 1995); or

(iv) ANSI Z9.1-1971, Practices for Ventilation and Operation of Open-Surface Tanks, and NFPA 34-1966, Standard for Dip Tanks Containing Flammable or Combustible Liquids.

(5) When you use mechanical ventilation, it must draw the flow of air into a hood or exhaust duct.

(6) When you use mechanical ventilation, each dip tank must have an independent exhaust system unless the combination of substances being removed will not cause a:

- (i) Fire;
- (ii) Explosion; or
- (iii) Chemical reaction.

(c) What requirements must I follow to recirculate exhaust air into the workplace? (1) You may not recirculate exhaust air when any substance in that air poses a health hazard to employees or exceeds 25% of its LFL.

(2) You must ensure that any exhaust air recirculated from a dipping or coating operation using flammable or combustible liquids is:

- (i) Free of any solid particulate that poses a health or safety hazard for employees; and
- (ii) Monitored by approved equipment.

(3) You must have a system that sounds an alarm and automatically shuts down the operation when the vapor concentration for any substance in the exhaust airstream exceeds 25% of its LFL.

(d) What must I do when I use an exhaust hood? You must:

(1) Provide each room having exhaust hoods with a volume of outside air that is at least 90 percent of the volume of the exhaust air; and

(2) Ensure that the outside air supply does not damage exhaust hoods.

(e) What requirements must I follow when an employee enters a dip tank? When an employee enters a dip tank, you must meet the entry requirements of §1910.146, OSHA's standard for Permit-Required Confined Spaces, as applicable.

(f) What first-aid procedures must my employees know? Your employees must know the first-aid procedures that are appropriate to the dipping or coating hazards to which they are exposed.

(g) What hygiene facilities must I provide? When your employees work with liquids that may burn, irritate, or otherwise harm their skin, you must provide:

(1) Locker space or other storage space to prevent contamination of the employee's street clothes;

(2) An emergency shower and eye-wash station close to the dipping or coating operation. In place of this equipment, you may use a water hose that is at least 4 feet (1.22 m) long and at least 3/4 of an inch (18 mm) thick with a quick-opening valve and carrying a pressure of 25 pounds per square inch (1.62 k/cm²) or less; and

(3) At least one basin with a hot-water faucet for every 10 employees who work with such liquids. (See paragraph (d) of §1910.141.)

(h) What treatment and first aid must I provide? When your employees work with liquids that may burn, irritate, or otherwise harm their skin, you must provide:

(1) A physician's approval before an employee with a sore, burn, or other skin lesion that requires medical treatment works in a vapor area;

(2) Treatment by a properly designated person of any small skin abrasion, cut, rash, or open sore;

(3) Appropriate first-aid supplies that are located near the dipping or coating operation; and

(4) For employees who work with chromic acid, periodic examinations of their exposed body parts, especially their nostrils.

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(i) What must I do before an employee cleans a dip tank? Before permitting an employee to clean the interior of a dip tank, you must:

(1) Drain the contents of the tank and open the cleanout doors; and

(2) Ventilate and clear any pockets where hazardous vapors may have accumulated.

(j) What must I do to inspect and maintain my dipping or coating operation? You must:

(1) Inspect the hoods and ductwork of the ventilation system for corrosion or damage:

(i) At least quarterly during operation; and

(ii) Prior to operation after a prolonged shutdown.

(2) Ensure that the airflow is adequate:

(i) At least quarterly during operation; and

(ii) Prior to operation after a prolonged shutdown.

(3) Periodically inspect all dipping and coating equipment, including cov-

ers, drains, overflow piping, and electrical and fire-extinguishing systems, and promptly correct any deficiencies;

(4) Provide mechanical ventilation or respirators (selected and used as specified in §1910.134, OSHA’s Respiratory Protection standard) to protect employees in the vapor area from exposure to toxic substances released during welding, burning, or open-flame work; and

(5) Have dip tanks thoroughly cleaned of solvents and vapors before permitting welding, burning, or open-flame work on them.

§ 1910.125 Additional requirements for dipping and coating operations that use flammable or combustible liquids.

If you use flammable or combustible liquids, you must comply with the requirements of this section as well as the requirements of sections 1910.123, 1910.124, and 1910.126, as applicable.

You must comply with this section if:	And:
•The flashpoint of the flammable or combustible liquid is 200 °F (93.3 °C) or above.	•The liquid is heated as part of the operation; or •A heated object is placed in the liquid.

(a) What type of construction material must be used in making my dip tank? Your dip tank must be made of noncombustible material.

(b) When must I provide overflow piping? (1) You must provide properly trapped overflow piping that discharges to a safe location for any dip tank having:

(i) A capacity greater than 150 gallons (568 L); or

(ii) A liquid surface area greater than 10 feet² (0.95 m²).

(2) You must also ensure that:

(i) Any overflow piping is at least 3 inches (7.6 cm) in diameter and has sufficient capacity to prevent the dip tank from overflowing;

(ii) Piping connections on drains and overflow pipes allow ready access to the interior of the pipe for inspection and cleaning; and

(iii) The bottom of the overflow connection is at least 6 inches (15.2 cm) below the top of the dip tank.

(c) When must I provide a bottom drain? (1) You must provide a bottom drain for dip tanks that contain more than 500 gallons (1893 L) of liquid, unless:

(i) The dip tank is equipped with an automatic closing cover meeting the requirements of paragraph (f)(3) of this section; or

(ii) The viscosity of the liquid at normal atmospheric temperature does not allow the liquid to flow or be pumped easily.

(2) You must ensure that the bottom drain required by this section:

(i) Will empty the dip tank during a fire;

(ii) Is properly trapped;

(iii) Has pipes that permit the dip tank’s contents to be removed within five minutes after a fire begins; and

(iv) Discharges to a safe location.

(3) Any bottom drain you provide must be capable of manual and automatic operation, and manual operation