

Dip Tanks Containing Flammable or Combustible Liquids

Self-Inspection Checklist




Optional Information

Name of School:
Date of Inspection:
Career-Technical program/course/room:
Signature of inspector:

Guidelines:

This checklist covers regulations issued by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) under the general industry standard 29 CFR 1910.124, 1910.125 and 1910.132. Also included are regulations from the Building Officials and Code Administrators (BOCA) National Fire Prevention Association (NFPA) Code/1999, Section F-1305.0, dip tanks. The checklist applies to dip tanks in educational buildings. It also applies to any vapor area containing dangerous quantities of flammable vapors in the vicinity of dip tanks, their drain boards, or associated drying, conveying, or other equipment during operation or shutdown periods. The regulations cited apply only to private employers and their employees, unless adopted by a State agency and applied to other groups such as public employees. A yes answer to a question indicates that this portion of the inspection complies with the OSHA or EPA standard, or with a nonregulatory recommendation. Definitions of terms in bold type have been included at the end of the checklist. This checklist must be used in conjunction with the checklist Flammable and Combustible Liquids.

 Questions marked with this symbol may require the help of an outside expert.



This checklist does not address additional OSHA regulations covering hardening and tempering tanks; flow coating; roll coating, roll spreading, or roll impregnating; vapor- degreasing tanks; cyanide tanks; spray cleaning and spray degreasing tanks; and electrostatic paint detearing. Please consult 29 CFR 1910.126 and the BOCA National Fire Prevention Code/1999 for details.



U.S. Centers for Disease
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National Institute for
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Safety Checklist Program for Schools
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General Requirements



1		Does the ventilation provided to the vapor area in the vicinity of a dip tank keep the airborne concentration of any substance below 25% of its lower flammable limit? [29 CFR 1910.124(b)(1)]
2		Are exhaust ventilation systems well constructed and in good working order? [29 CFR 1910.124(b)(4) and F-1305.3] <i>Note: OSHA incorporates the following design standards by reference: (a) ANSI Z9.2-1979, Fundamentals governing the design and operation of local exhaust systems; (b) NFPA 34-1995, Standard for dip tanks containing flammable or combustible liquids; (c) ACGIH's Industrial Ventilation, A Manual of Recommended Practice (22nd ed., 1995, or (d) 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.</i>
3		Are dip tank operations controlled so exposures are maintained within required limits? [29 CFR 1910.124(b)(2)]
4		When two or more dip tank operations are ventilated by a common exhaust duct, is care taken to ensure that the mixture of contaminants generated does not present a fire, explosion, or chemical reaction hazard? [29 CFR 1910.124(b)(6)]
5		Are instructions given to all persons who work on or around dip tanks about hazards and applicable first aid procedures? [29 CFR 1910.124(f)]
6		Are protective equipment (including personal protective equipment for eyes, face, head, and extremities) protective clothing, and respiratory devices provided to all persons who use dip tanks? [29 CFR 1910.132(a)]
7		Are deluge showers and eye wash stations provided near dip tank operations? [29 CFR 1910.124(g)(2)]
8		Are washing facilities provided nearby for users of dip tanks? [29 CFR 1910.124(g)(3)]
9		Is locker space or an equivalent clothing storage facility available to prevent contamination of street clothing? [29 CFR 1910.124(g)(1)]
10		Are first aid supplies readily available and are they specific to the hazards associated with the dip tanks being used? [29 CFR 1910.124(h)(3)]

Construction

11		In educational buildings, are dip tanks used only in a room designed for the purpose, protected with an approved automatic fire-suppression system, and separated vertically and horizontally from other areas as required by the building code? [F-1305.2] and 1926.303(a)]
12		Are dip tanks, including any drainboards, constructed of noncombustible materials? [29 CFR 1910.125(a) and F-1305.4]
13		For dip tanks over 150 gallons in capacity or 10 square feet in liquid surface area, does a properly trapped overflow pipe lead to a safe location outside the building? [29 CFR 1910.125(b)(1) and F-1305.4.1]
14		Is the overflow pipe at least 3 inches in diameter? [29 CFR 1910.125(b)(2)(i)]
15		Are all piping connections on the dip tank easily accessible for inspection and cleaning? [29 CFR 1910.125(b)(2)(ii)]
16		Is the bottom of the overflow connection at least 6 inches below the top of the dip tank? [29 CFR 1910.125(b)(2)(iii) and F-1305.4.1]
17		If the dip tank is over 500 gallons in capacity, is it equipped with a bottom drain? [29 CFR 1910.125(c)(1) and F-1305.4.2] <i>Note: Bottom drains are not required if (a) the dip tank is equipped with an automatic closing cover, or (b) the viscosity of the liquid at normal atmospheric temperature does not allow the liquid to flow or be pumped easily.</i>
18		Will the required bottom drain operate during a fire? [29 CFR 1910.125(c)(2)(i)]

- Continued -


Construction

19	Is the required bottom drain properly trapped and discharged to a safe location outside? [29 CFR1910.125(c)(ii), (iii), (iv) and F-1305.4.3]
20	Are required bottom drains automatically and manually arranged to drain quickly in the event of fire unless the viscosity of the liquid at normal atmospheric temperature makes this impractical? [F-1305.4.2]
21	Is manual operation of required bottom drains available at a safely accessible location? [29 CFR1910.125(c)(3) and F-1305.4.2]
22	If required bottom drains do not operate by gravity flow, is an automatic pump provided? [29 CFR1910.125(c)(4) and F-1305.4.2]
23	If the dip tank is artificially heated, is it equipped with an alarm that will sound if the temperature comes within 50°F of the flashpoint of the liquid? [29 CFR1910.126(a)(2)]
24	Are open flames, spark-production devices, or heated surfaces hot enough to ignite vapors absent from the vapor area? [29 CFR1910.125(e)(1)(ii) and F-1305.6]
25 	In each vapor area and any adjacent area, does all electrical wiring and equipment conform to applicable hazardous (classified) area requirements? [29 CFR1910.125(e)(1)(i) and F-1305.6.1]
26	Are any portable containers used to add liquid to the tank electrically bonded to the tank and positively grounded to prevent static electrical sparks or arcs? [29 CFR 1910.125(e)(2)]
27 	Are heating systems used in drying operations installed in accordance with NFPA 86A-1969 and provided with mechanical ventilation before and during operation? [29 CFR 1910.125(e)(3)(i) and (ii)]
28	Do these heating systems shut down automatically if any ventilating fan fails to maintain adequate ventilation? [29 CFR 1910.125(e)(3)(iii)]

Operations and Maintenance

29	Are all vapor areas free of combustible debris and as free as possible of combustible stock? [29 CFR1910.125(e)(4)(i) and F-1305.7]
30	Are rags and other material contaminated with liquids or coating operations placed in approved waste cans immediately after use? [29 CFR1910.125(e)(4)(ii) and F-1305.7.1] <i>Note: Metal waste cans must have self-closing lids.</i>
31	Are the contents of these waste cans properly disposed of at the end of each shift? [29 CFR1910.125(e)(4)(iii) and F-1305.7.1]
32	Are the dip tank facility and all its components inspected periodically? [29 CFR1910.124(j)(3)]
33	Are defects promptly corrected? [29 CFR1910.124(j)(3)]
34	Are "No Smoking" signs in large letters on a contrasting color background conspicuously posted in the vicinity of each dip tank? [29 CFR1910.125(e)(5)]

Fire Extinguishers

35 	Are suitable manual and automatic fire extinguishers available for areas in the vicinity of dip tanks? [29CFR1910.125(f)(2)(i) and F-1305.8] <i>Note: Consult you local fire official for assistance. The BOCA National Fire Prevention Code requires at least one portable fire extinguisher with a minimum 40-B:C rating located with 30 feet of travel distance from the dip tank.</i>
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Dip Tank Covers

36	If dip tank covers are arranged to close automatically in the event of a fire, are they actuated by approved automatic devices and arranged for manual actuation and operation? [F-1305.9]
37	Are dip tank covers constructed of substantial noncombustible material or of the tin-clad type with enclosing metal applied with locked joints? [F-1305.9.1]
38	Are covers kept closed when tanks are not used? [F-1305.9.3]

Definitions

Combustible liquid: any liquid with a flashpoint at or above 100°F (37.8°C), but below 200°F (93.3°C). Exception: any mixture having components with flashpoints of 200°F (93.3°C), or higher, the total volume of which makes up 99% or more of the total volume of the mixture.

Dip tank: a tank, vat, or container of flammable or combustible liquid in which articles or materials are immersed for the purpose of coating, finishing, treating, or similar processes.

Explosion-proof: enclosed in a case or pipe that (1) can withstand an explosion of a gas or vapor that may occur within it, (2) can prevent the ignition of a gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and (3) operates at such an external temperature that it will not ignite a surrounding flammable atmosphere.

Flammable liquid: any liquid having a flashpoint below 100°F (37.8°C), except any mixture having components with flashpoints of 100°F (37.8°C) or higher, the total of which makes up 99% or more of the total volume of the mixture.

Vapor area: any area containing dangerous quantities of flammable vapors in the vicinity of dip tanks, their drainboards or associated drying, conveying, or other equipment during operation or shutdown periods.