Chapter 296-835 WAC

DIPPING AND COATING OPERATIONS (DIP TANKS)

WAC 296-835-100 Scope.

IMPORTANT:

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

Exemption: Dip tanks that use a molten material (molten metal, alloy, salt, etc.) are not covered by this chapter. This chapter applies to:

- A dip tank that uses a liquid other than plain water, or the vapor of the liquid, to:
  - Clean an object
  - Coat an object
  - Alter the surface of an object

OR

- Change the character of an object.
- Drain or drying an object that has been dipped or coated.

Examples of covered dipping and coating operations include, but are not limited to:

- Paint dipping
- Electroplating
- Anodizing
- Pickling
- Quenching
- Tanning
- Degreasing
- Stripping
- Cleaning

CONVEYORS

296-835-12065 Make sure conveyor systems are safe.
296-835-130 Additional requirements for dip tanks used for specific processes.

HARDENING OR TEMPERING

296-835-13005 Meet specific requirements if you use a hardening or tempering tank.

ELECTROSTATIC EQUIPMENT

296-835-13010 Meet specific requirements if you use electrostatic equipment.

FLOW COATING

296-835-13015 Meet specific requirements if you use a flow coating process.

ROLL COATING

296-835-13020 Take additional precautions if your roll coating operation uses a liquid that has a flashpoint below 140°F (60°C).

VAPOR DEGREASING

296-835-13025 Provide additional safeguards for vapor degreasing tanks.

SPRAY CLEANING OR DEGREASING

296-835-13030 Control liquid spray over an open surface cleaning or degreasing tank.

296-835-140 Definitions.
296-835-110 Dipping and Coating Operations (Dip Tanks)

– Dyeing
– Flow coating
– Roll coating.

Reference: You have to do a hazard assessment to identify hazards or potential hazards in your workplace and determine if PPE is necessary to protect your employees. See personal protective equipment (PPE), WAC 296-800-160, in the core rules, chapter 296-800 WAC.

WAC 296-835-110 General requirements. Summary. Your responsibility:
Safeguard employees working with dip tanks.

You must:
CONSTRUCTION
Construct safe dip tanks
WAC 296-835-11005
VENTILATION
Provide proper ventilation for the vapor area
WAC 296-835-11010
Take additional precautions if you recirculate ventilation system exhaust air into the workplace
WAC 296-835-11015
Take additional precautions when using an exhaust hood
WAC 296-835-11020
INSPECTION
Periodically inspect your dip tanks and associated equipment and correct any deficiencies
WAC 296-835-11025
FIRST AID
Make sure employees working near dip tanks know appropriate first-aid procedures
WAC 296-835-11030
CLEANING
Prepare dip tanks before cleaning
WAC 296-835-11035
CYANIDE
Safeguard cyanide tanks
WAC 296-835-11040
WELDING
Protect employees during welding, burning or other work using open flames
WAC 296-835-11045
LIQUIDS HARMFUL TO SKIN
Provide additional protection for employees working near dip tanks that use liquid that may burn, irritate, or otherwise harm the skin
WAC 296-835-11050.

WAC 296-835-11005 Construct safe dip tanks.
You must:
• Make sure dip tanks, including any drain boards, are strong enough to support the expected load.

WAC 296-835-11010 Provide proper ventilation for the vapor area.
You must:
• Make sure mechanical ventilation meets the requirements of one or more of the following standards:
  – NFPA 34-1995, Standard for Dipping and Coating Processes Using Flammable or Combustible Liquids

Note: Some, or all, of the consensus standards (such as ANSI and NFPA) may have been revised. If you comply with a later version of a consensus standard, you will be considered to have complied with any previous version of the same consensus standard.

WAC 296-835-11015 Take additional precautions if you recirculate ventilation system exhaust air into the workplace.

IMPORTANT:
This section applies if exhaust air from dipping or coating operations that use flammable liquids, or liquids with flashpoints greater than 199.4°F (93°C) is recirculated back into the work environment.

You must:
• Only recirculate air that contains no substance at a concentration that could pose a health or safety hazard to employees.
  • Make sure any exhaust system that recirculates air into the workplace:
    – Passes the air through a device that removes contaminants

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– Sounds an alarm and automatically shuts down the dip tank operation, if the vapor concentration of any substance in the exhaust air exceeds twenty-five percent of its LFL.
– Monitors the concentration of vapor from flammable liquids or liquids with flashpoints greater than 199.4°F (93°C) with approved equipment.

**Note:**
- The LFL concentration in the air must be determined after the air passes through the air-cleaning device and before the air re-enters the workspace.
- Most substances will pose a health hazard at a concentration far below twenty-five percent of its LFL.

**WAC 296-835-11020** Take additional precautions when using an exhaust hood.

You must:
- Make sure each room with an exhaust hood has a source of outside air that:
  – Enters the room in a way that will not interfere with the function of the hood
  – Replaces at least ninety percent of the air taken in through the hood.

**WAC 296-835-11025** Periodically inspect your dip tanks and associated equipment and correct any deficiencies.

You must:
- Inspect or test your dip tanks and associated equipment periodically, including:
  – Covers
  – Overflow pipes
  – Bottom drains and valves
  – Electrical wiring, equipment, and grounding connections
  – Ventilating systems
  – Fire extinguishing equipment
  – Inspect the hoods and ductwork of the ventilation system for corrosion and damage and make sure the airflow is adequate:
    – At least quarterly during operation
    – Prior to operation after a prolonged shutdown
  – Promptly fix any deficiencies found.

**Note:**
- To assist you in tracking your inspections and actions taken from those inspections, you may want to keep a written record.
- It is recommended that inspections be at least quarterly even if the system is not operating. Depending on the chemicals in use more frequent inspection may be required.

**WAC 296-835-11030** Make sure employees working near dip tanks know appropriate first-aid procedures.

You must:
- Make sure your employees know the appropriate first-aid procedures for the hazards of your dipping and coating operations.

**WAC 296-835-11035** Prepare dip tanks before cleaning.

You must:
1. Drain the contents of the tank and open any cleanout doors.
2. Ventilate the tank to clear any accumulated hazardous vapors.

**Reference:** There may be requirements that apply before an employee enters a dip tank. See chapter 296-809 WAC, Confined spaces.

**WAC 296-835-11040** Safeguard cyanide tanks.

You must:
- Provide a dike or other safeguard(s) to prevent cyanide from mixing with an acid if a dip tank fails.

**Note:** This would also apply to spills or other means by which cyanide could come in contact with an acid in sufficient quantity to produce a hazardous gas.

**WAC 296-835-11045** Protect employees during welding, burning, or other work using open flames.

You must:
- Make sure the dip tank and the area around it are thoroughly cleaned of solvents and vapors before performing work involving:
  – Welding
  – Burning

**FIRST AID**

**WAC 296-835-11030** Make sure employees working near dip tanks know appropriate first-aid procedures.

**You must:**
- Make sure your employees know the appropriate first-aid procedures for the hazards of your dipping and coating operations.

**Note:**
- First-aid procedures are contained in the Material Safety Data Sheet (MSDS) for the chemicals used in the dip tank.
- First-aid supplies appropriate for the hazards of the dipping or coating operation need to be located near the dip tank to be considered “readily available” as required by WAC 296-800-1502.

**Reference:** There are additional requirements that may include providing emergency washing facilities and employee training. See first aid, WAC 296-800-150, and employer chemical hazard communication, WAC 296-800-170, in the safety and health core rules, chapter 296-800 WAC.

**CLEANING**

**WAC 296-835-11035** Prepare dip tanks before cleaning.

**You must:**
1. Drain the contents of the tank and open any cleanout doors.
2. Ventilate the tank to clear any accumulated hazardous vapors.

**Reference:** There may be requirements that apply before an employee enters a dip tank. See chapter 296-809 WAC, Confined spaces.

**CYANIDE**

**WAC 296-835-11040** Safeguard cyanide tanks.

**You must:**
- Provide a dike or other safeguard(s) to prevent cyanide from mixing with an acid if a dip tank fails.

**Note:** This would also apply to spills or other means by which cyanide could come in contact with an acid in sufficient quantity to produce a hazardous gas.

**Reference:** There may be requirements that apply before an employee enters a dip tank. See chapter 296-809 WAC, Confined spaces.

**WELDING**

**WAC 296-835-11045** Protect employees during welding, burning, or other work using open flames.

**You must:**
- Make sure the dip tank and the area around it are thoroughly cleaned of solvents and vapors before performing work involving:
  – Welding
  – Burning
OR
– Open flames

Reference: There are additional requirements for this type of work. See Welding, cutting and brazing, chapter 296-24 WAC, Part I, and Respiratory protection, chapter 296-842 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 05-03-093, § 296-835-11045, filed 1/18/05, effective 3/1/05. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. WSR 02-15-102, § 296-835-11045, filed 7/17/02, effective 10/1/02.]

LIQUIDS HARMFUL TO SKIN

WAC 296-835-11050 Protect employees that use liquids that may burn, irritate, or otherwise harm the skin.

You must:
(1) Make sure washing facilities, including hot water, are available for every ten employees that work with dip tank liquids.

(2) Satisfy medical requirements:
• Make sure an employee with any small skin abrasion, cut, rash, or open sore receives treatment by a properly designated person.
• Make sure an employee with a sore, burn, or other skin lesion that needs medical treatment, has a physician's approval before they perform their regular work.
• Make sure employees who work with chromic acid receive periodic examinations of their exposed body parts, especially their nostrils.

Note:
• Periodic means on a yearly basis unless otherwise indicated.
• Any time chronic acid spills onto an employee's skin or their clothing is saturated, a physician should be responsible for evaluating and monitoring the area where chronic acid made contact with the skin.

You must:
(3) Provide lockers or other storage space to prevent contamination of street clothes.

Reference: You have to do a hazard assessment to identify hazards or potential hazards in your workplace and determine if PPE is necessary to protect your employees. See Personal protective equipment (PPE), WAC 296-800-160, in the safety and health core rules, chapter 296-800 WAC.

[Statutory Authority: RCW 49.17.010, 49.17.040, and 49.17.050. WSR 02-15-102, § 296-835-11050, filed 7/17/02, effective 10/1/02.]

WAC 296-835-1200 Additional requirements for dip tanks using flammable liquids or liquids with flashpoints greater than 199.4°F (93°C). Summary.

IMPORTANT:
This section applies to:
• Flammable liquids or liquids with flashpoints greater than 199.4°F (93.3°C) or higher if you:
  – Heat the liquid
  – Dip a heated object in the tank

Reference: Store flammable liquids or liquids with a flashpoint greater than 199.4°F (93°C) in accordance with WAC 296-24-330, in the general safety and health standards.

Your responsibility:
Safeguard employees working with dip tanks containing flammable liquids or liquids with a flashpoint greater than 199.4°F (93°C).

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You must:
CONSTRUCTION
Include additional safeguards when constructing dip tanks
WAC 296-835-12005
Provide overflow pipes
WAC 296-835-12010
Provide bottom drains
WAC 296-835-12015

FIRE PROTECTION
Provide fire protection in the vapor area
WAC 296-835-12020
Provide additional fire protection for large dip tanks
WAC 296-835-12025

ELECTRICAL WIRING AND EQUIPMENT AND SOURCES OF IGNITION
Prevent static electricity sparks or arcs when adding liquids to a dip tank
WAC 296-835-12035

Control ignition sources in the vapor area and adjacent area
WAC 296-835-12040

Provide safe wiring and electrical equipment where the liquid can drip or splash
WAC 296-835-12045

KEEPING THE AREA AROUND THE DIP TANKS CLEAN
Keep the area around dip tanks clear of combustible material and properly dispose of waste
WAC 296-835-12050

HEATING LIQUID
Make sure heating the liquid in your dip tanks does not cause a fire
WAC 296-835-12055

HEAT DRYING
Make sure a heating system used for drying objects does not cause a fire
WAC 296-835-12060

CONVEYORS
Make sure the conveyor system for dip tanks is safe
WAC 296-835-12065.


CONSTRUCTION

WAC 296-835-12005 Include additional safeguards when constructing dip tanks.

You must:
(1) Make sure the dip tank, drain boards (if provided), and supports, are made of noncombustible material.
(2) Make sure piping connections on drains and overflow pipes allow easy access to the inside of the pipe for inspection and cleaning.

[Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. WSR 02-15-102, § 296-835-12005, filed 7/17/02, effective 10/1/02.]

WAC 296-835-12010 Provide overflow pipes.

You must:
• Provide an overflow pipe on dip tanks that:
  – Hold more than one hundred fifty gallons of liquid
OR
– Have more than ten square feet of liquid surface area
• Make sure the overflow pipe is:
  – Properly trapped
  – Able to prevent the dip tank from overflowing
  – Three inches or more (7.6 cm) in diameter
  – Discharged to a safe location.

Note:
Discharged to a safe location could be a:
  – Safe location outside the building
  OR
  – Closed, properly vented salvage tank or tanks that can hold more than the dip tank.

You must:
• Make sure the bottom of the overflow pipe is at least six inches (15.2 cm) below the top of the tank.

Note:
The overflow pipe should be large enough to remove water applied to the liquid surface of the dip tank from automatic sprinklers or other sources in the event of fire. Smaller dip tanks should be equipped with overflow pipes, if practical.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050. WSR 02-15-102, § 296-835-12010, filed 7/17/02, effective 10/1/02.]

WAC 296-835-12015 Provide bottom drains.

Exemption: A bottom drain is not required if:
  – The viscosity of the liquid makes it impractical to empty the tank by gravity or pumping
  OR
  – The dip tank has an automatic closing cover that meets the requirements of WAC 296-835-12025.

You must:
• Provide a bottom drain on all dip tanks that hold more than five hundred gallons of liquid.
  • Make sure the bottom drain:
    – Is properly trapped
    – Will empty the dip tank during a fire
    – Has pipes large enough to empty the tank within five minutes
    – Uses automatic pumps if gravity draining is not practical
    – Is capable of both manual and automatic operation
    – Discharges to a safe location.

Note:
Discharged to a safe location could be a:
  – Safe location outside the building
  OR
  – Closed, properly vented salvage tank or tanks that can hold more than the dip tank.

You must:
• Make sure manual operation of the bottom drain is performed from a safe and easily accessible location.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 07-03-163, § 296-835-12015, filed 1/24/07, effective 4/1/07. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. WSR 02-15-102, § 296-835-12010, filed 7/17/02, effective 10/1/02.]

FIRE PROTECTION

WAC 296-835-12020 Provide fire protection in the vapor area.

You must:

(3/18/14)
WAC 296-835-12035 Prevent static electricity sparks or arcs when adding liquids to a dip tank.

You must:
- Make sure any portable container used to add liquid to the tank is:
  - Electrically bonded to the dip tank
  - Positively grounded.

WAC 296-835-12040 Control ignition sources.

You must:
1. Make sure the vapor areas and adjacent areas do not have any:
   - Open flames.
   - Spark producing devices.
   - Heated surfaces hot enough to ignite vapors.
2. Use explosion-proof wiring and equipment in the vapor area.

Reference: Electrical wiring and equipment has to meet the requirements of the applicable hazardous (classified) location. See Hazardous (classified) locations, WAC 296-24-95613. Electrostatic equipment has specific electrical requirements. See WAC 296-835-13010.

You must:
3. Prohibit smoking in any vapor area:
   - Post an easily seen "NO SMOKING" sign near each dip tank.

WAC 296-835-12045 Provide safe electrical wiring and equipment where the liquid can drip or splash.

You must:
- Make sure all electrical wiring and equipment in the vapor area is approved for areas that have:
  - Deposits of easily ignited residue
  - Explosive vapor

Exemption: This does not apply to wiring that is:
- In rigid conduit, threaded boxes or fittings
- Has no taps, splices, or terminal connections.

WAC 296-835-12050 Keep the area around dip tanks clear of combustible material and properly dispose of waste.

You must:
1. Make sure the area surrounding dip tanks is:
   - Completely free of combustible debris
   - As free of combustible stock as possible.
2. Provide approved metal waste cans that are:
   - Used for immediate disposal of rags and other material contaminated with liquids from dipping or coating operations
   - emptied and the contents properly disposed of at the end of each shift.

HEATING LIQUID

WAC 296-835-12055 Make sure heating the liquid in your dip tanks does not cause a fire.

You must:
- Keep the temperature of the liquid in the dip tank:
  - Below the liquid's boiling point
  - At least 100°F below the liquid's autoignition temperature.

HEAT DRYING

WAC 296-835-12060 Make sure a heating system used for drying objects does not cause a fire.

You must:
- Make sure the heating system used in a drying operation that could cause ignition:
  - Has adequate mechanical ventilation that operates before and during the drying operation
  - Shuts down automatically if a ventilating fan fails to maintain adequate ventilation
  - Is installed as required by NFPA 86-1999, Standard for Ovens and Furnaces.

Note: Some, or all, of the consensus standards (such as ANSI and NFPA) may have been revised. If you comply with a later version of a consensus standard, you will be considered to have complied with any previous version of the same consensus standard.

CONVEYORS

WAC 296-835-12065 Make sure conveyor systems are safe.

You must:
- Make sure the conveyor system shuts down automatically if:
  - The ventilation system fails to maintain adequate ventilation
  - There is a fire.

WAC 296-835-130 Additional requirements for dip tanks used for specific processes.

Your responsibility: Safeguard employees working with dip tanks used for specific processes.
You must:

**HARDENING OR TEMPERING**
Meet specific requirements if you use a hardening or tempering tank
WAC 296-835-13005

**ELECTROSTATIC EQUIPMENT**
Meet specific requirements if you use electrostatic equipment
WAC 296-835-13010

**FLOW COATING**
Meet specific requirements if you use flow coating
WAC 296-835-13015

**ROLL COATING**
Take additional precautions if your roll coating operation uses a liquid that has a flashpoint below 140°F (60°C)
WAC 296-835-13020

**VAPOR DEGREASING**
Provide additional safeguards for vapor degreasing tanks
WAC 296-835-13025

**SPRAY CLEANING OR DEGREASING**
Control liquid spray over an open surface cleaning or degreasing tank
WAC 296-835-13030.

**HARDENING OR TEMPERING**
WAC 296-835-13005  Meet specific requirements if you use a hardening or tempering tank.

You must:

1. Provide an automatic fire extinguishing system or automatic dip tank cover for any hardening and tempering tank that uses flammable liquids or liquids with flashpoints greater than 199.4°F (93°C) and:
   - Holds five hundred gallons (1893 L) or more of liquid
   - OR
   - Has twenty-five square feet (2.37 m²) or more of liquid surface area.
2. Prevent fires.
   - Make sure hardening and tempering tanks are:
     - Not located on or near combustible flooring.
     - Located as far away as practical from furnaces.
     - Equipped with noncombustible hoods and vents (or equally effective devices) for venting to the outside.
   - Treat vent ducts as flues and keep them away from combustible material, particularly roofs.
3. Make sure air under pressure is not used to:
   - Fill the tank
   - OR
   - Agitate the liquid in the tank.
4. Equip each tank with an alarm that will sound when the temperature is within 50°F (10°C) of the liquid's flashpoint (alarm set point).
5. Make sure a limit switch shuts down conveyors supplying work to the tank when the temperature reaches the alarm setpoint, if operationally practical.
6. Have a circulating cooling system if the temperature of the liquid can exceed the alarm set point.

**ELECTROSTATIC EQUIPMENT**
WAC 296-835-13010  Meet specific requirements if you use electrostatic equipment.

**ELECTRICAL**
You must:

1. Provide safe electrical equipment.
   - Make sure electrodes in your equipment are:
     - Substantial
     - Rigidly supported
     - Permanently located
     - Effectively insulated from ground by insulators
   - Make sure the insulators are:
     - Nonporous
     - Noncombustible
     - Kept clean and dry
   - Make sure high voltage leads to electrodes are effectively:
     - Supported on permanent, suitable insulators
     - Guarded against accidental contact or grounding.
2. Make sure transformers, powerpacks, control apparatus, and all other electrical parts of the equipment:
   - Are located outside the vapor area
   - OR
   - Meet the requirements of WAC 296-835-12040.

**PAINT DETEARING**
You must:

1. Safeguard paint detearing operations.
   - Use approved electrostatic equipment in paint detearing operations.
2. Make sure goods being paint deteared are:
   - Supported on conveyors
   - Not manually handled.
3. Keep a minimum safe distance (twice the sparking distance) between goods being paint deteared and the electrodes or conductors of the electrostatic equipment at all times by:
   - Arranging the conveyors to provide the necessary distance
   - Supporting the goods to prevent swinging or movement, if necessary
   - Post a sign that shows the minimum safe distance (twice the sparking distance) near the equipment, where it can be easily seen.
4. Keep paint detearing operations separate from storage areas and people by using fences, rails or guards that are:
   - Made of conducting material
   - Adequately grounded.
(7) Protect paint detearing operations from fire by installing:
   – Automatic sprinklers
   OR
   – An approved automatic fire extinguishing system.
(8) Collect and remove paint deposits by:
   – Providing removable drip plates and screens
   – Cleaning these plates and screens in a safe location.

AUTOMATIC DISCONNECT REQUIREMENT
You must:
(9) Make sure electrostatic equipment has automatic controls that immediately disconnect the power supply to the high-voltage transformer and signal the operator, if:
   • Ventilating fans or equipment stop or fail for any reason
   • Conveyors do not work properly
   • A ground (or imminent ground) occurs anywhere in the high-voltage system
   OR
   • Goods being paint deteared come within twice the sparking distance of the electrodes or conductors of the equipment.

FLOW COATING
WAC 296-835-13015 Meet specific requirements if you use a flow coating process.
You must:
(1) Make sure all piping is substantial and rigidly supported.
(2) Make sure the paint is supplied by a:
   • Gravity tank that does not hold more than ten gallons (38 L)
   OR
   • Direct low-pressure pumping system.
(3) Have an approved heat-actuated device that shuts down the pumping system if there is a fire.

Note: The area of the sump, and any areas on which paint flows, should be included in the area of dip tank.

ROLL COATING
WAC 296-835-13020 Take additional precautions if your roll coating operation uses a liquid that has a flashpoint below 140°F (60°C).

IMPORTANT:
This section applies to the processes of roll coating, roll spreading, or roll impregnating that use a liquid having a flashpoint below 140°F (60°C). Material may be passed directly through a tank or over the surface of a roller that revolves partially submerged in the liquid.
You must:
   • Prevent sparks from static electricity by:
     – Bonding and grounding all metallic parts (including rotating parts) and installing static collectors
     OR
     – Maintaining a conductive atmosphere (one with a high relative humidity, for example) in the vapor area.

VAPOR DEGREASING
WAC 296-835-13025 Provide additional safeguards for vapor degreasing tanks.
You must:
(1) Make sure, if the tank has a condenser or a vapor-level thermostat, that it keeps the vapor level at least:
   • Thirty-six inches (91 cm) below the top of the tank if the width of the tank is seventy-two inches or more
   OR
   • One-half the tank width below the top of the tank if the tank is less than seventy-two inches wide.
(2) Make sure, if you use gas as a fuel to heat the tank liquid, that the combustion chamber is airtight (except for the flue opening) to prevent solvent vapors from entering the air-fuel mixture.
(3) Make sure the exhaust flue:
   • Is made of corrosion-resistant material
   • Extends to the outside
   • Has a draft diverter if mechanical exhaust is used.
(4) Take special precautions to keep solvent vapors from mixing with the combustion air of the heater if chlorinated or fluorinated hydrocarbon solvents (for example, trichloroethylene or freon) are used in the dip tank.
(5) Keep the temperature of the heating element low enough to keep a solvent or mixture from:
   • Decomposing
   OR
   • Generating excessive vapor.

SPRAY CLEANING OR DEGREASING
WAC 296-835-13030 Control liquid spray over an open surface cleaning or degreasing tank.
You must:
   • Control the spray to the greatest extent feasible by:
     – Enclosing the spraying operation as completely as possible
     – Using mechanical ventilation to provide enough inward air velocity to prevent the spray from leaving the vapor area.

Note: Mechanical baffles may be used to help prevent the discharge of spray.

Adjacent area: Any area within twenty feet (6.1 m) of a vapor area that is not separated from the vapor area by tight partitions.


Approved: Approved or listed by a nationally recognized testing laboratory. Refer to federal regulation 29 C.F.R. 1910.7, for definition of nationally recognized testing laboratory.

Autoignition temperature: The minimum temperature required to cause self-sustained combustion without any other source of heat.

Detearing: A process for removing excess wet coating material from the bottom edge of a dipped or coated object or material by passing it through an electrostatic field.

Dip tank: A container holding a liquid other than plain water 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: Any liquid having a flashpoint at or below 199.4°F (93°C). Flammable liquids are divided into four categories as follows:

(a) Category 1 shall include liquids having flashpoints below 73.4°F (23°C) and having a boiling point at or below 95°F (35°C).

(b) Category 2 shall include liquids having flashpoints below 73.4°F (23°C) and having a boiling point above 95°F (35°C).

(c) Category 3 shall include liquids having flashpoints at or above 73.4°F (23°C) and at or below 140°F (60°C). When a Category 3 liquid with a flashpoint at or above 100°F (37.8°C) is heated for use to within 30°F (16.7°C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint below 100°F (37.8°C).

(d) Category 4 shall include liquids having flashpoints above 140°F (60°C) and at or below 199.4°F (93°C). When a Category 4 flammable liquid is heated for use to within 30°F (16.7°C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint at or above 100°F (37.8°C).

(e) When liquid with a flashpoint greater than 199.4°F (93°C) is heated for use to within 30°F (16.7°C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 4 flammable liquid.

Flashpoint: Means the minimum temperature at which a liquid gives off a vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid, and shall be determined as follows:

(a) The flashpoint of liquids having a viscosity less than 45 Saybolt universal second(s) at 100°F (37.8°C) and a flashpoint below 175°F (79.4°C) shall be determined in accordance with the Standard Method of Test for Flashpoint by the Tag Closed Tester, ASTM D-56-69 (incorporated by reference; WAC 296-901-14024, Appendix B—Physical hazard criteria).

(b) The flashpoints of liquids having a viscosity of 45 Saybolt universal second(s) or more at 175°F (79.4°C) or higher shall be determined in accordance with the Standard Method of Test for Flashpoint by the Pensky Martens Closed Tester, ASTM D-93-69 (incorporated by reference; WAC 296-901-14024, Appendix B—Physical hazard criteria).