

**NFPA 33 (1989)  
STANDARD FOR  
SPRAY APPLICATION USING FLAMMABLE  
AND COMBUSTIBLE MATERIALS**

**OSHA 1910.107**

**Other References**

NFPA 30, Flammable and Combustible Liquids Code

NFPA 68, Guide for Explosion Venting

NFPA 69, Standard on Explosion Prevention Systems

NFPA 70, National Electrical Code

NFPA 77, Recommended Practice on Static Electricity

NFPA 86, Standard on Ovens and Furnaces

NFPA 91, Standard for the Installation of Blower and Exhaust Systems for Dust,  
Stock, and Vapor Removal or Conveying

Developed by:

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# CHAPTER 1

## SCOPE AND DEFINITIONS

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<b>1-1*</b>	<b>Scope</b>
1-1.1	<ul style="list-style-type: none"><li>• Covers application of flammable or combustible materials (including powders) by<ul style="list-style-type: none"><li>- spray (airless or compressed air)</li><li>- hydraulic atomization</li><li>- by steam</li><li>- electrostatic methods, or</li><li>- any other means</li></ul></li><li>• Intermittent or continuous</li></ul>
1-1.2	<ul style="list-style-type: none"><li>• Standard outlines practical requirements<ul style="list-style-type: none"><li>- where unusual processes are involved, AHJ may require additional safeguards when substantiated</li></ul></li></ul>
1-1.3*	<ul style="list-style-type: none"><li>• Standard does not cover:<ul style="list-style-type: none"><li>- outdoor spray application of buildings or tanks</li><li>- portable spraying apparatus not used continuously in same location</li></ul></li></ul>
1-1.4*	<ul style="list-style-type: none"><li>- spray application of noncombustible material</li></ul>

## Definitions

(Refer to Code)

- Aerated solid powders
- Approved
- Authority having jurisdiction (AHJ)
- Dry spray booth
- Electrostatic fluidized bed
- Fluidized bed
- Labeled
- Listed
- Liquids, flammable
- Liquids, combustible
- Noncombustible material
- Nonincendive
- Spray area
- Spray booth
- Spray room
- Waterwash spray booth

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**CHAPTER 2\***

**LOCATION OF SPRAY APPLICATION OPERATIONS**

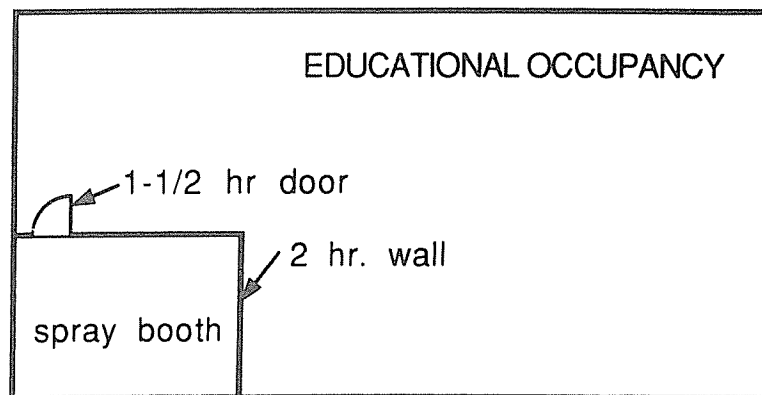
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**2-1** Spray operations shall be confined to properly designed and constructed:

- Spray booths
- Spray rooms, or
- Properly designated spray areas

**2-2** Spray application operations shall not be conducted in building classified as Assembly, Educational, Institutional or Residential except in room:

- Designed for purpose
- Protected with A.S.
- Separated with 2 hr. fire resistance



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## CHAPTER 3\*

### SPRAY AREA

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3-1

#### Walls and Ceilings

- Substantially constructed with:
  - non-combustible materials
  - rigidly supported materials
  - smooth finishes
- Floors noncombustible or covered with non-combustible material
- Steel not less than No. 18 MSG (1.3 mm) (3-1.1)
- Aluminum or other noncombustible material
  - may be used for intermittent or low volume spraying
  - subject to AHJ
- Spray rooms shall have minimum 1 hr. fire resistance

3-2

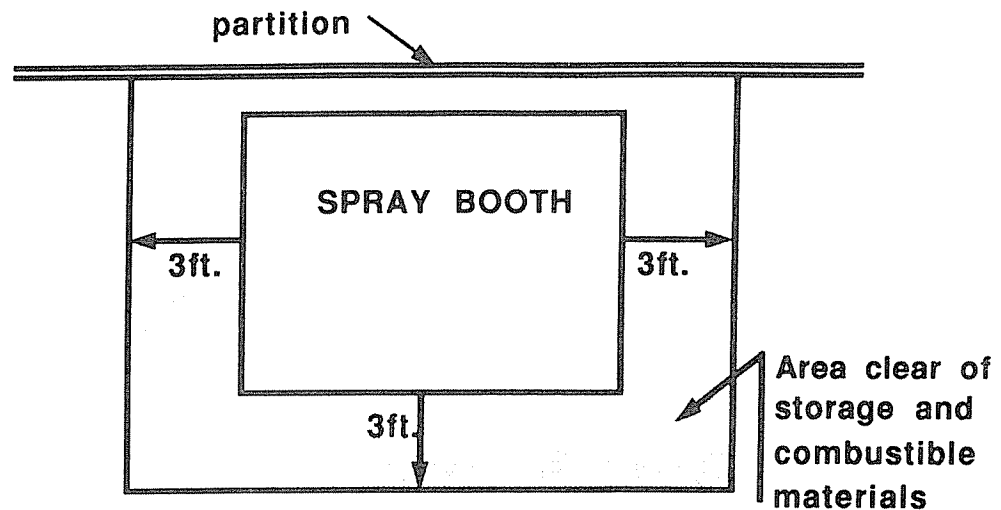
#### Conveyor Openings

- As small as possible

### 3-3

## Spray Booths

- Separated by 3 ft. from other operations including storage, or
- Separated by 1 hour wall [NEC 516-2 (d)]



### 3-4

## Automated Spray Operations

- Self-powered trolley or device capable of producing ignition not activated in spray area unless
  - spray operation stopped
  - ventilation system operating
  - area adequately ventilated

3-5

### Light Transparent Panels [NEC 516-3(c)]

- Noncombustible material & easily cleaned
- Effectively isolate spray area (Class I location)
- Panel is of material or so protected that breakage is unlikely
- Residues on surface not raised to dangerous temperatures
- Lighting unit fixed & approved for location

3-6

### Distribution or, Baffle Plates and Filters

- Distribution or Baffle Plates
  - noncombustible material
  - readily removable or accessible on both sides for cleaning
- Filters
  - not used when spray material is known to spontaneously heat easily (3-6.2)
  - filter supports noncombustible (3-6.3)
  - listed type (3-6.4)
  - not alternately used where materials may be reactive or spontaneously heat (3-6.5)



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## CHAPTER 4

### ELECTRICAL AND OTHER SOURCES OF IGNITION

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- |      |   |
|------|---|
| 4-1* | <b>Ignition Sources (electrical, open flames, etc.)</b> <ul style="list-style-type: none"><li>• conform to Chapter 4 and<ul style="list-style-type: none"><li>- electrostatic apparatus conform to chapters 9 &amp; 10</li><li>- drying, curing and fusion apparatus conform to Chapter 11</li><li>- automobile undercoating spray operations conform to Chapter 12</li><li>- powder coating operations conform to Chapter 13</li></ul></li></ul> |
| 4-2* | <ul style="list-style-type: none"><li>• <b>Ignition Sources Not located in</b><ul style="list-style-type: none"><li>- a spray area</li><li>- area adjacent to spray area defined as Division 2 location (also see 4-7)</li></ul></li></ul>  |
| 4-3  | <ul style="list-style-type: none"><li>• Space heater, steam pipes, or other hot surfaces not located in spray area where deposits may accumulate</li></ul>  |

4-4 **Electrical Wiring in Spray Area**

- Conform to NFPA 70 (NEC 516-2)

4-5\* • Only equipment specifically listed for locations where deposits may build in spray area except:

- wiring in rigid metal conduit
- type MI cable
- metal boxes or fittings not containing taps, splices or terminal connections

4-6\* • Electrical equipment within spray area not subject to deposit build-up shall be

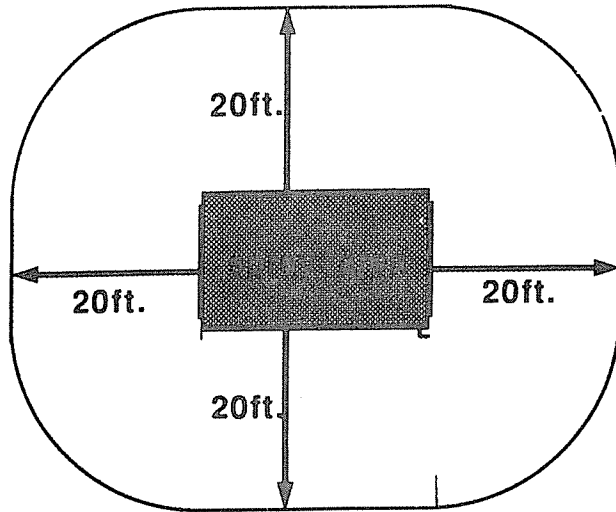
- explosion proof
- Class I and Class II
- Division 1 locations

4-7\* **Electrical Wiring Adjacent to Spray Area**



4-7.1 • Equipment outside of spray operation but within

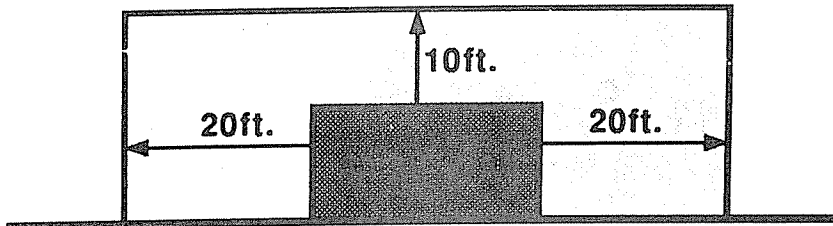
- 20 ft. horizontally
- 10 ft. vertically

And not separated by partition shall not produce sparks and shall be Class I or Class II, Division 2 [NEC 516-2 (b-1)]



PLAN VIEW

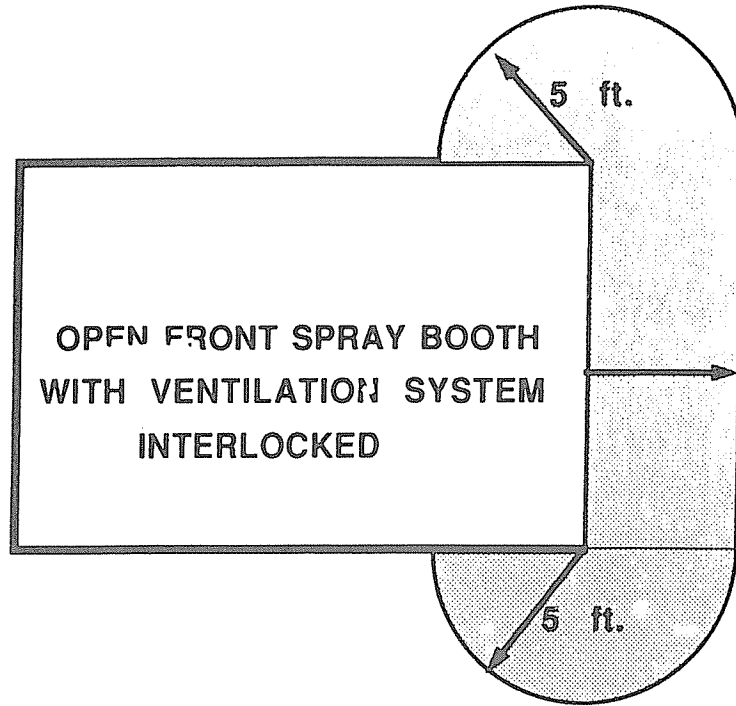
-  Class I or Class II, Division 1
-  Class I or Class II, Division 2



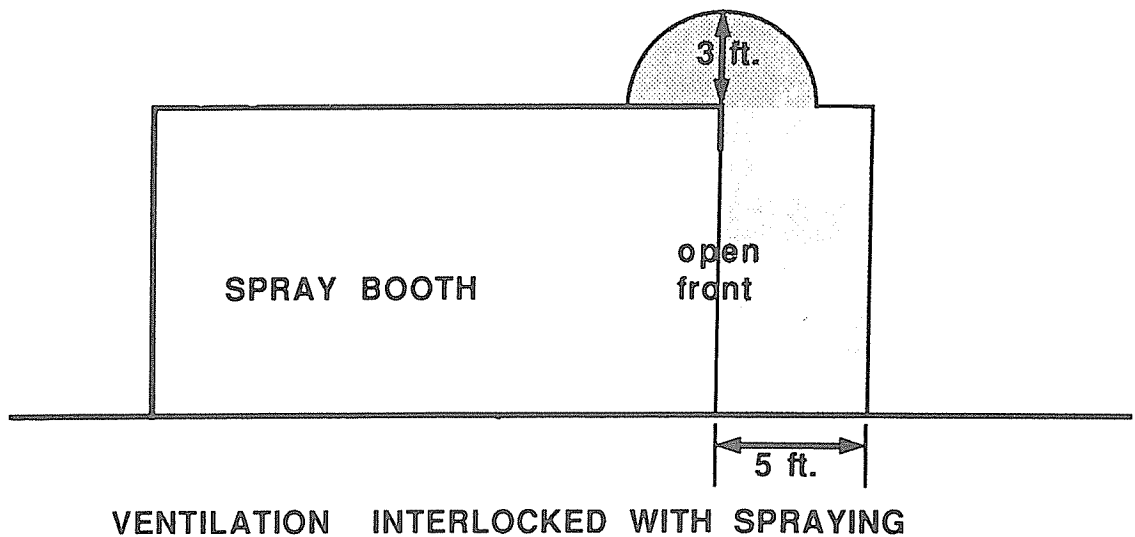
ELEVATION VIEW

4-7.2

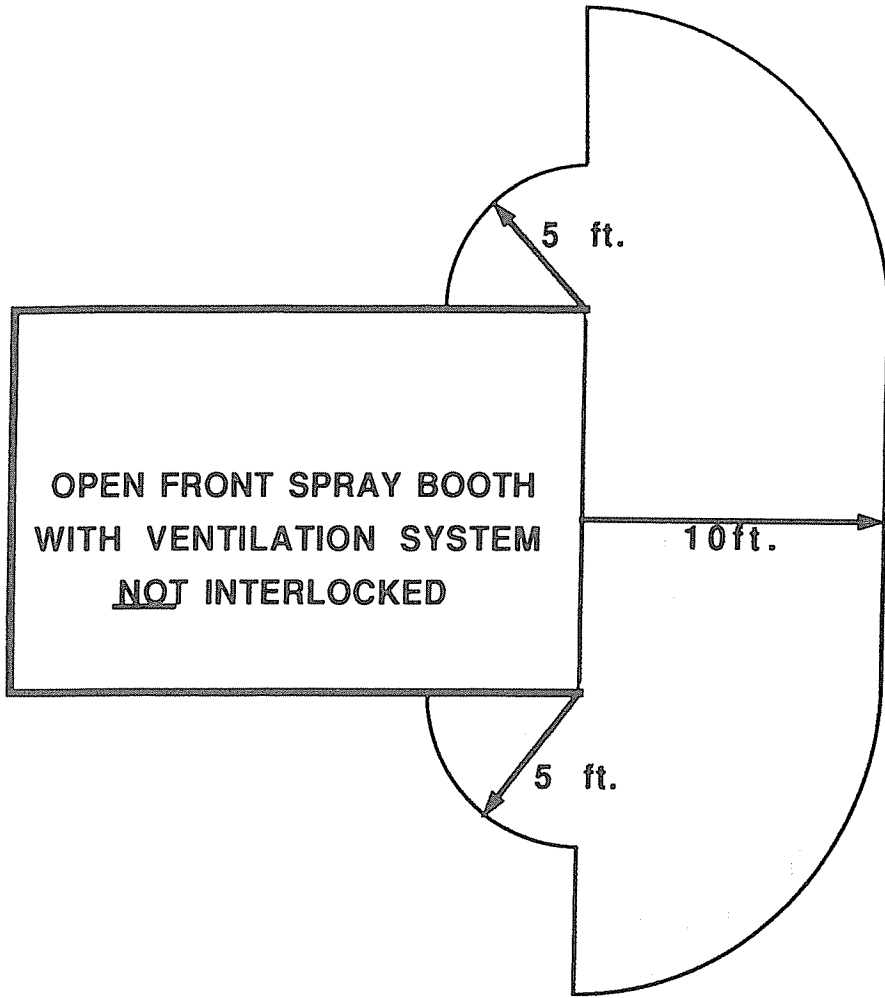
- Open face (open front) booths or rooms
  - ventilation system interlocked with spray equipment [NEC 516-2(b)(2)(a)]
  - area within 5 ft. of open front Class I or Class II, Division 2



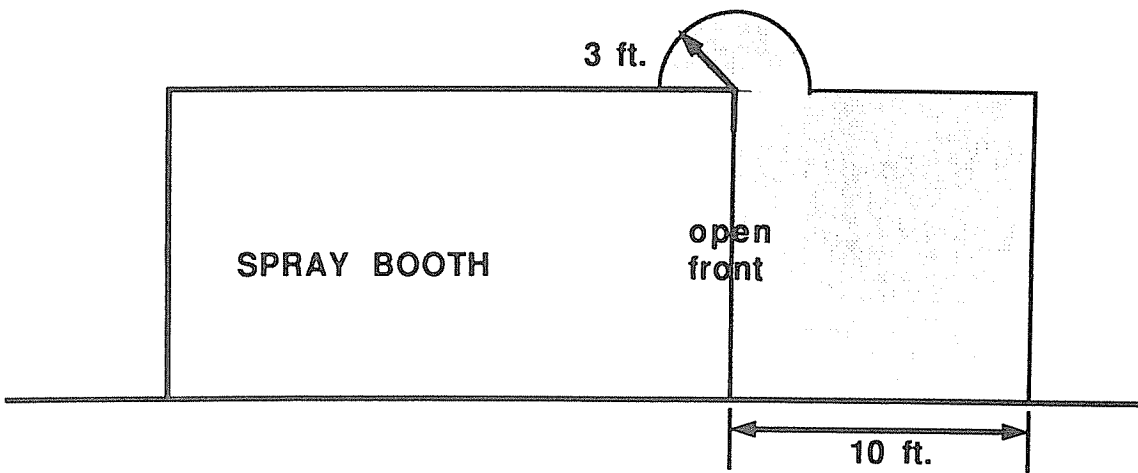
Class I or Class II, Division 2



- ventilation system not interlocked with spray equipment  
[NEC 516-2(b)(2)(b)]
- area within 10 ft. of open front Class I or Class II, Division 2



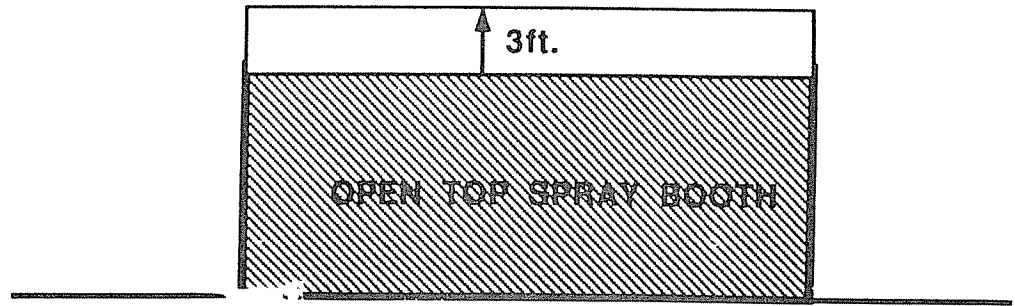
□ Class I or Class II, Division 2



VENTILATION NOT INTERLOCKED WITH SPRAYING

4-7.3

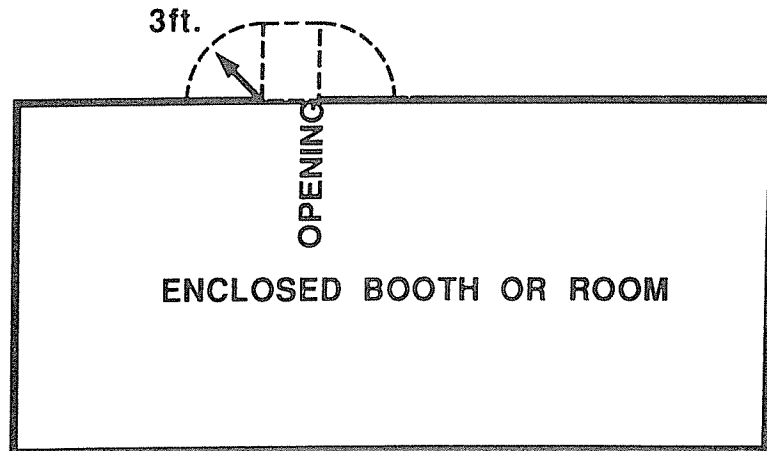
- Open top booth room
  - area within 3 ft. vertically shall be Class I or Class II, Division 2 [NEC 516-2 (b)(3)]



Class I or Class II, Division 2

4-7.4

- Enclosed booth or room
  - area adjacent to booth or room considered nonhazardous
  - except area within 3 ft. of any openings shall be Class I or Class II, Division 2 [NEC 516-2 (b)(2)]

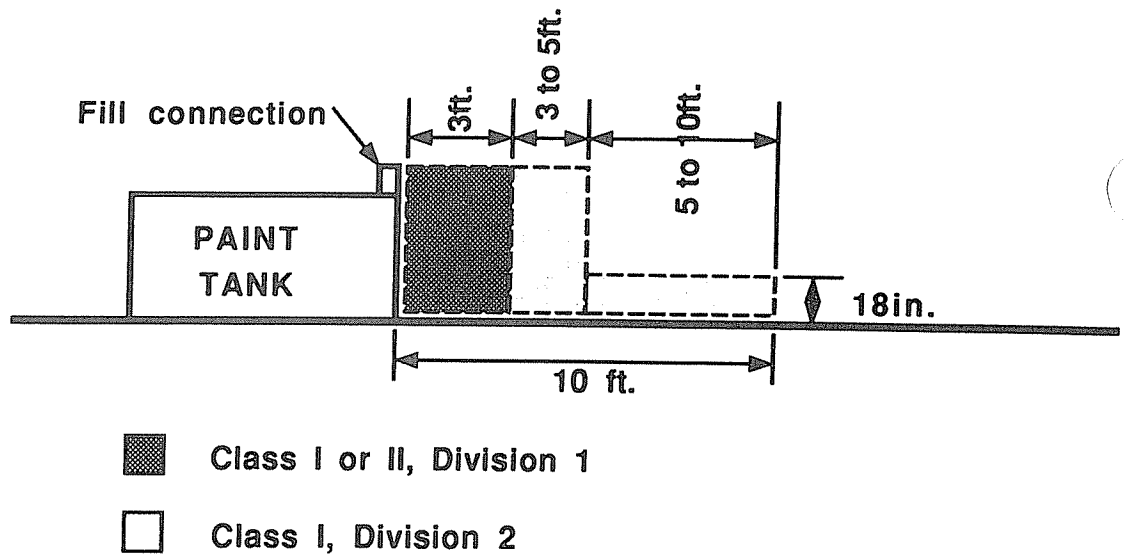


Class I or Class II, Division 2

4-7.5

Spray equipment outside of spray areas (adequately ventilated spaces)

- Fill openings, vents and system openings
  - within 3 ft. extending to floor:  
Class I or II, Division 1
  - between 3 ft. and 5 ft. extending to floor:  
Class I, Division 2
  - within 10 ft. and up to 18 in. above floor for liquids:  
Class I, Division 2

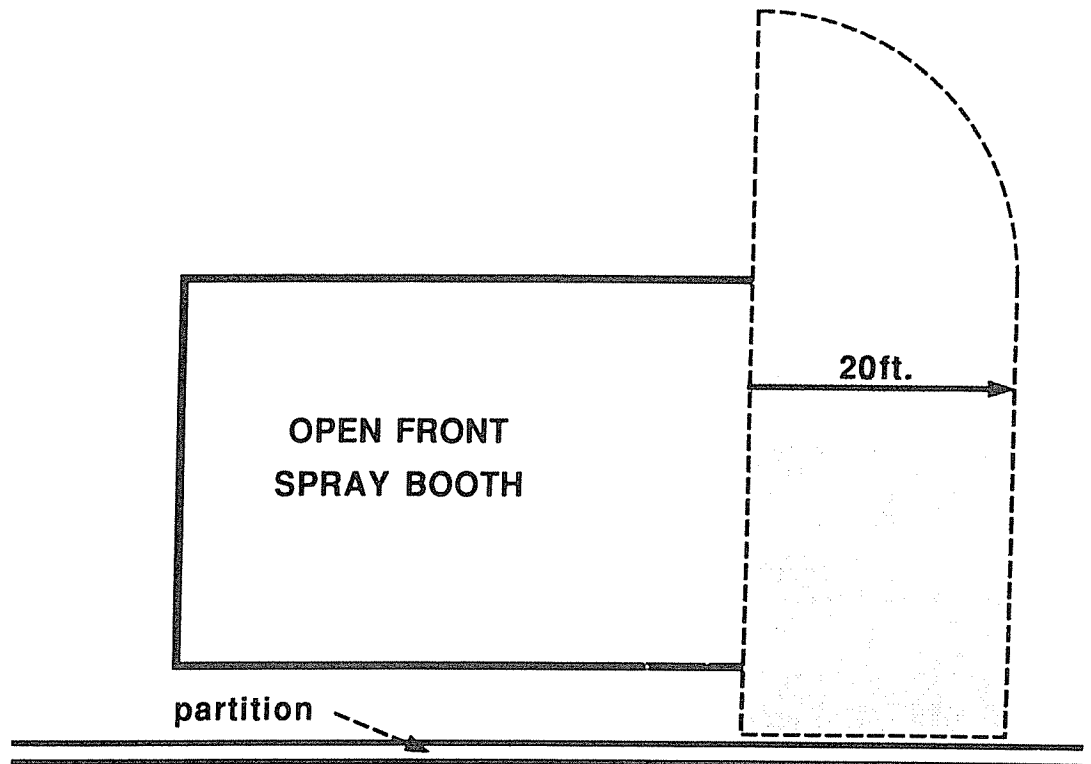





4-8\*

## Electric Lamps

- Outside of within 20 ft. of spray area and not separated by partition
  - totally enclosed
  - protected from mechanical damage by guards or location



 Electric lamps totally enclosed and protected from mechanical damage

4-9\*

**Portable Electric Lamps [NEC 516-3 (d)]**

- Not used in spray area during spraying operations

Exception: Where portable electric lamps are needed, they shall be approved for Class I or Class II, Division 1

4-9.1\*

- Metal parts of spray booths, exhaust ducts and piping conveying flammable or combustible liquids shall be electrically grounded

4-9.2\*

- Airless high fluid pressure spray guns and conductive objects being sprayed shall be electrically grounded
  - unless specifically intended to be operated at other than ground potential

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## CHAPTER 5

### VENTILATION

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- |     |  |
|-----|--|
| 5-1 | <b>Ventilation System</b> <ul style="list-style-type: none"><li>• Conform to NFPA 91<br/><i>Standard for the Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal or Conveying</i></li></ul>   |
| 5-2 | <ul style="list-style-type: none"><li>• Spray areas shall be provided with mechanical ventilation to:<ul style="list-style-type: none"><li>- confine and remove flammable or combustible vapors or mists to safe location</li><li>- maintain concentration of flammable or combustible vapors or mists in exhaust stream &lt; 25% of LFL</li><li>- confine and control combustible residues, dusts or deposits</li></ul><p style="margin-left: 40px;">Exception: Confined spaces not suitable for ventilation shall be inerted in accordance with <i>NFPA 69, Standard on Explosion Prevention Systems</i></p></li></ul> |
| 5-3 | <ul style="list-style-type: none"><li>• Spray equipment with overspray collection filters shall have<ul style="list-style-type: none"><li>- visible gages,</li><li>- audible alarms, or</li><li>- effective inspections</li></ul><p style="margin-left: 40px;">to assure required air velocity is maintained</p></li></ul>   |
| 5-4 | <ul style="list-style-type: none"><li>• Powder coating systems shall meet requirements of Section 13-5</li></ul>   |

5-5

### Mechanical Ventilation

- Kept in operation during spraying
- Kept in operation after spraying sufficient time to exhaust residue from drying
- Interlocked with automated spray operations

5-6\*

### Makeup Air

- Adequate to compensate for exhaust
- Introduced to provide efficient operation of exhaust fans without dead air pockets

5-8

### Exhaust Air

- Exhaust air shall not
  - contaminate air intakes
  - be used as make-up air
  - be directed so as to create nuisance

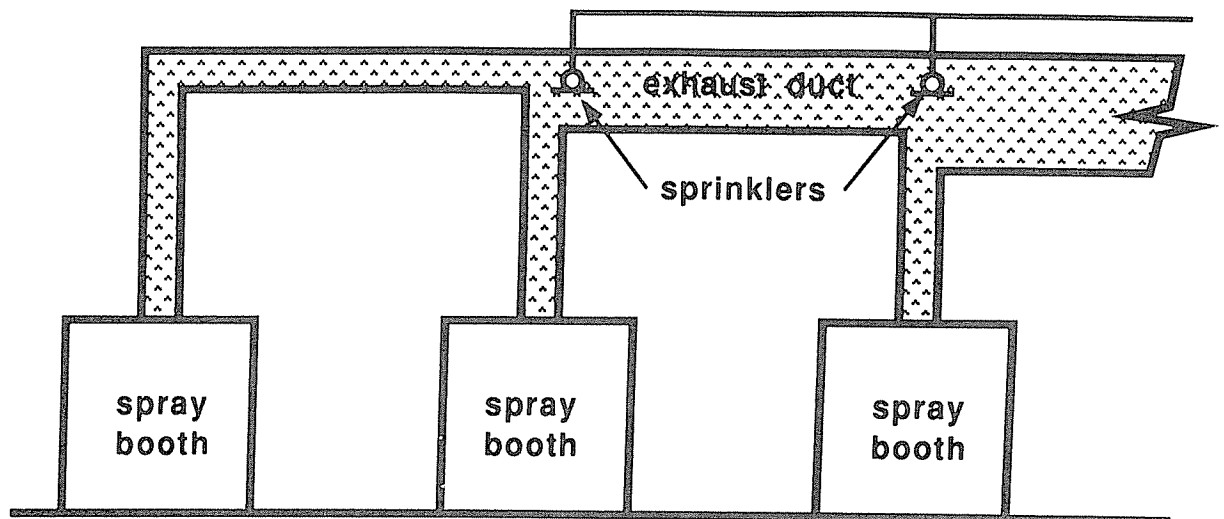
5-9

- Individual spray booths shall be separately ducted to exterior

Exception: Multiple cabinet spray booths with combined frontal areas 18 sq. ft. using non-reactive materials

5-10\*

- Exhaust may be manifolded if
  - necessary for air pollution treatment
  - no nitrocellulose based materials used
  - air cleaning system reduces quantity of overspray entering manifolded duct
  - A.S. provided at the junction of each duct (in addition to Chapter 7)
  - installation approved by AHJ



5-11

### Exhaust Ducts

- Constructed of steel
- Substantially supported

5-12

- Exhaust duct discharge shall be:
  - minimum of 6 ft. from combustible exterior wall or roof
  - not directed toward combustible construction
  - not directed toward unprotected opening in any noncombustible wall within 25 ft.

5-13

- Ducts provided with adequate access doors for cleaning

5-14

### Exhaust Fans

- Rotating element nonferrous or arranged so sparks cannot occur
- Ample clearance between rotating element and fan casing
- Bearings self-lubricating or lubricated from outside of duct

5-15

- Electrical motors shall not be placed inside spray area unless it conforms to 4-5

4-5 requires specific listing for use

5-16

- Belts not in spray area unless totally enclosed

5-17\*

### Article Drying

- Articles for drying shall be in adequately ventilated spaces (if adequate ventilation not provided area shall be considered spray area)

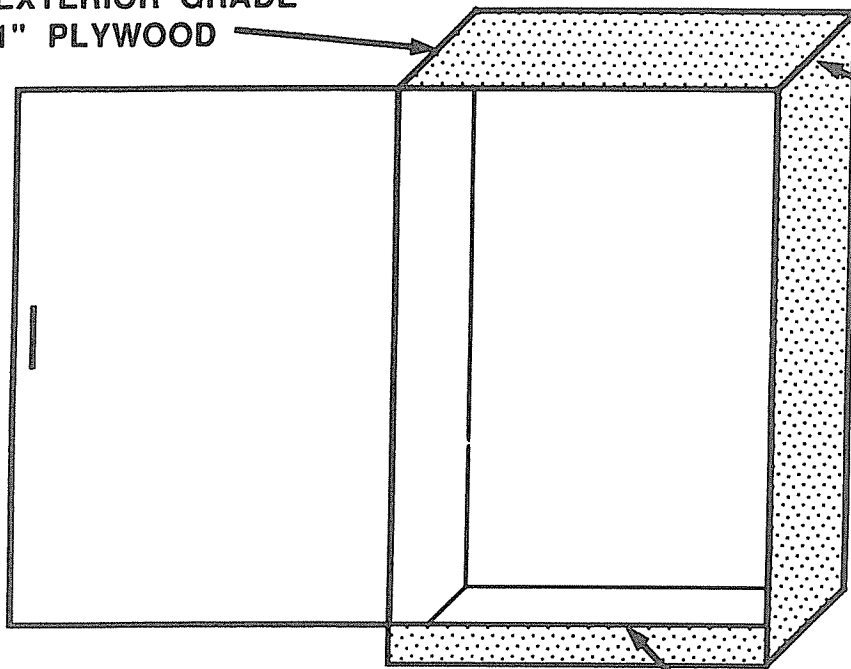
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**CHAPTER 6**  
**FLAMMABLE AND COMBUSTIBLE LIQUIDS STORAGE,  
HANDLING AND DISTRIBUTION**

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|------------|--|
| 6-1        | <ul style="list-style-type: none"><li>• Storage, handling and mixing in accordance with <i>NFPA 30</i> “<i>Flammable and Combustible Liquids Code</i>” and this section</li><br/><li>• Bulk storage of flammable and combustible liquids in separate:<ul style="list-style-type: none"><li>- properly constructed building, or</li><li>- 1 hour fire resistive cut-off room</li></ul></li></ul>  |
| <b>6-2</b> | <b>Storage</b>   |
| 6-2.1      | <ul style="list-style-type: none"><li>• Max. 3 storage cabinets in a process area without approval of AHJ<ul style="list-style-type: none"><li>- storage cabinets listed or designed per NFPA 30</li><br/><li>- any one cabinet limited to<br/>60 gals. of Class I and II liquids<br/>or<br/>120 gals. of Class III liquids</li></ul></li></ul>  |
| 6-2.2      | <p>Quantity of flammable and combustible liquids kept in vicinity of spraying operations (outside of storage room or cabinets) shall not exceed greater of:</p> <ul style="list-style-type: none"><li>- one day or shift supply, or</li><br/><li>- 25 gals of Class IA liquids and 120 gals. of Class IB, IC, II or III liquids in containers, or</li><br/><li>- one approved portable tank 660 gals. of Class IB, IC, II or III</li></ul> |

**EXTERIOR GRADE  
1" PLYWOOD**



**RABBETED JOINTS  
FASTENED IN TWO  
DIRECTIONS WITH  
WOOD SCREWS**

**2" RAISED SILL**



## 6-3

### Mixing

#### 6-3.1

- Withdrawal or filling of containers shall only be done in suitable mixing room or spray area
  - Quantity mixed in spray area shall be 60 gals.

#### 6-3.2

- Mixing rooms may be located adjacent to spraying area if:
  - quantities of flammable liquids 2 gal/ft<sup>2</sup>
  - total area 150 ft.<sup>2</sup>
  - mixing room 6 ft. from spray area
  - wall and ceiling construction shall be steel 18 MSG or concrete or masonry, or other noncombustible material
  - room designed to contain a spill
  - room ventilated at 1cfm/ft.<sup>2</sup>  
(minimum rate of 150 cfm)
  - approved automatic fire extinguishing system provided

#### 6-3.3

- Where quantities of liquids or floor area exceed those above (6-3.1 and 6-3.2) NFPA 30 shall apply

## 6-4 Distribution Systems - Piping

- 6-4.1
  - Piping systems shall be
    - steel or other material of similar resistance to heat and physical damage
    - properly grounded and bonded
- 6-4.2\*
  - Where tubing or hose is used a valve shall be provided at connection
- 6-4.3\*
  - Tubing or hose shall be periodically inspected and replaced as necessary
- 6-4.4
  - Piping designed to withstand maximum working pressure of pumps
- 6-4.5\*
  - Pumps remotely located shall be provided with automatic shut-off in event of fire
- 6-4.6
  - All pressure piping shall be inspected regularly and tested using the "in service maximum operating pressures"

## 6-5 Distribution systems - General

- 6-5.1 • Open containers shall not be used
- 6-5.2 • Containers shall be bonded for transfer (*NFPA 77, Recommended Practice on Static Electricity*)
- 6-5.3 • Transfer of liquids from containers > 60 gals. shall be by pumps  

Exception: Pressure vessels OK if limited capacity (< 1 day's operation) and designed per ASME with pressure gage and relief valve
- 6-5.4 • Containers supplying spray nozzles shall be of closed type
- 6-5.6 • Pressurized containers supplying spray nozzles shall conform to ASME Code for unfired pressure vessels
- 6-5.7 • Heaters shall not be located in spray booths or areas subject to accumulation of residue

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## CHAPTER 7\*

### PROTECTION

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7-1

#### Protection

- Spray areas shall have A.S.

7-4\*

- A.S. in each spray booth shall have separate OS & Y subcontrol valve

7-5

- Sprinklers in spray areas shall be protected against overspray residue
  - polyethylene or cellophane bags  
(0.003 in. - 0.076 mm or less)
  - thin paper bags
  - replaced frequently

7-6

#### Alternate Protection

- Dry chemical system (NFPA 17)
- Carbon dioxide system (NFPA 12)
- Halon systems (NFPA 12A and 12B)

7-7

## Fire Extinguishers

- Fire Extinguishers per *NFPA 10, Standard for Portable Fire Extinguishers*

NFPA 10 Section 3.3		
Type of Hazard	Basic Minimum Extinguisher Rating	Maximum Travel Distance to Extinguishers (ft.)
Light (low)	5-B	30
	10-B	50
Ordinary (moderate)	10-B	30
	20-B	50
Extra (high)	40-B	30
	80-B	50

7-8\*

## Fixed Powder Applications

- Protected by flame detection
  - react within 1/2 second
  - shut down all conveyors, ventilation, application, transfer and powder collection equipment
  - close segregation dampers
  - activate an alarm

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## CHAPTER 8\*

### OPERATIONS AND MAINTENANCE

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8-1\*

#### Operations

- Spraying shall not be done outside of predetermined spray areas

8-2

- High Pressure Hoses
  - inspected regularly
  - not located in areas with ignition sources

8-3\*

- Spray areas kept clean
  - no build up of combustible residues
  - combustible coverings (thin paper or plastic) or strippable coating may be used

**8-4**

## **Maintenance**

- Maintenance procedures shall be established for
  - inspecting overspray filters
  - replacing overspray filters
  - disposing of filters

**8-6\***

## **Wastes**

- Rags etc. kept in metal containers (8-6)
- Clothing kept in metal lockers (8-7)

**8-8**

## **Solvents For Cleaning**

- Flash points over 100°F
- Solvents for cleaning nozzles and auxiliary equipment may have flash point of coating material
- Used inside spray area with ventilating equipment operating

8-9\*

## Spontaneous Heating

- Spray booths shall not be used for different coating materials where combination may be conducive to spontaneous heating
- Examples include
  - lacquers containing nitrocellulose combined with finishes containing drying oils (varnish, oil-based stains, primers, etc.)
  - bleaching compounds based on hydrogen peroxide, hypochlorites, perchlorates, etc. combined with organic finishing materials

8-11

## No Smoking Signs

- Spraying areas
- Paint storage rooms



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## CHAPTER 9

### FIXED ELECTROSTATIC APPARATUS

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9-1

#### Scope

- Any equipment using electrostatically charged elements for atomization, charging, and, or precipitation of hazardous materials

9-3

#### Electric Equipment [NEC 516-4(a)]

- Equipment shall be located outside of spray area including
  - transformers
  - high voltage supplies
  - control apparatus

Except: 

- high voltage grids
- electrodes
- electrostatic atomizing heads

9-3.2

- Electrodes and electrostatic atomizing heads shall be adequately supported in permanent locations and insulated from ground

9-3.3

- High voltage leads shall be properly insulated, or protected against accidental contact or grounding

9-3.4

- Goods being coated shall be arranged to
  - assure goods being coated are electrically connected to ground ( 1 megohm resistance)
  - prevent parts from swinging

### 9-3.5

## Automatic Shut-down

- Apparatus equipped with automatic shutdown of electricity upon:
  - failure of ventilating fans
  - stoppage of conveyor (unless part of process)
  - occurrence of ground or current leakage
  - de-energizing of the primary

### 9-3.7

- All electrically conductive objects in spray area (except those at high voltage) shall be adequately grounded

### 9-3.8

## Signs [NEC 516-4]

- Signs shall be conspicuously posted to:
  - designate process zone as dangerous
  - identify grounding requirements
  - restrict access to qualified personnel

## **9-4**

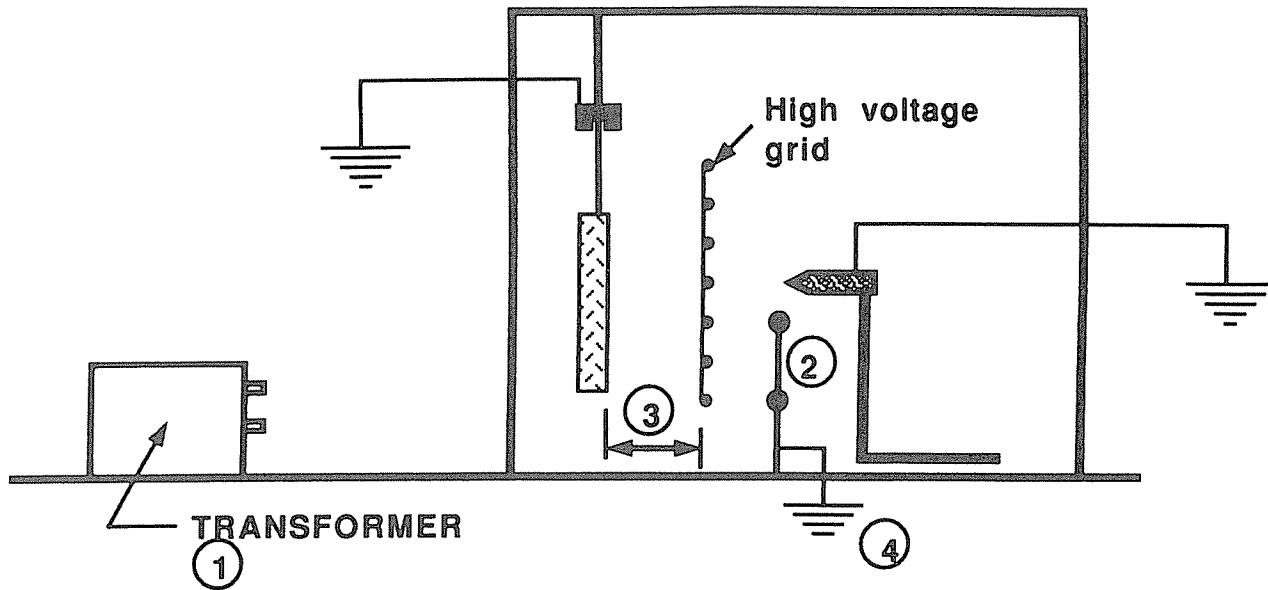
### **Incendive Equipment**

- Spray equipment classified as incendive shall:
  - be arranged to maintain safe distance ( twice sparking distance) between goods and electrodes
  - have signs specifying safe distance
  - have automatic shut-down if separation to energized equipment is below minimums

## **9-5**

### **Listing**

- All spray equipment shall be listed



- ① Transformers, power packs and electric control equipment located outside of spray area.
- ② Guards to prevent accidental contact with energized electrical equipment
- ③ High voltage grids separated from items to be sprayed by twice the sparking distance
- ④ All conductive equipment within influence of charging electrodes shall be grounded.

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## CHAPTER 10

# ELECTROSTATIC HAND SPRAYING EQUIPMENT

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### 10-3      **Electrostatic Equipment (NEC 516-4)**

- Listed

### 10-4      **Electric Equipment (NEC 516-5)**

- Equipment shall be located outside of spray area including:
  - transformers
  - high voltage supplies
  - control apparatus

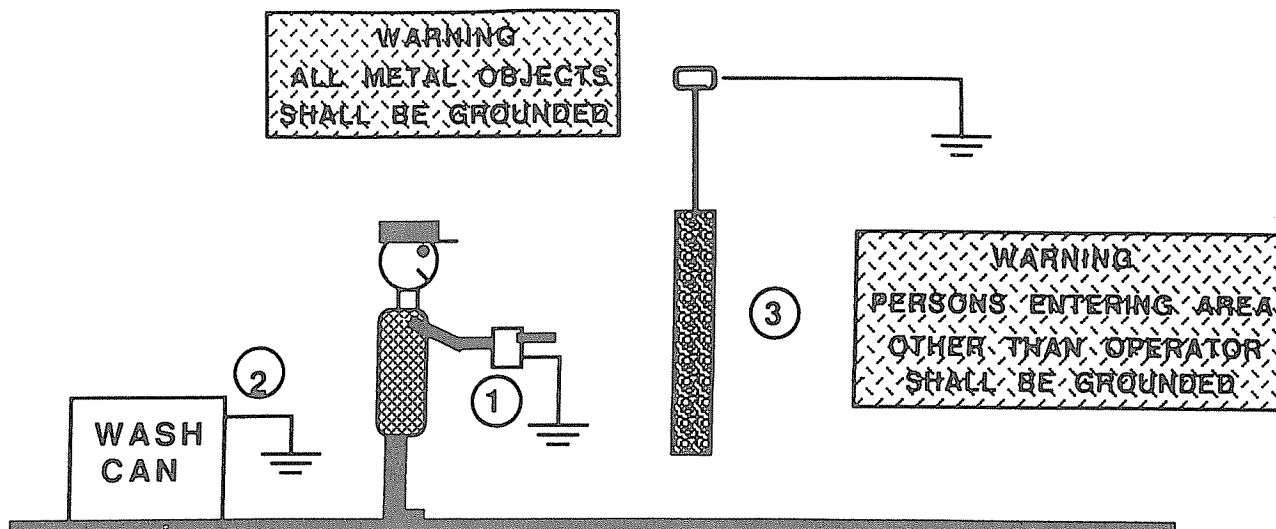
Except: hand held gun

### 10-5      • Spray gun

- handle grounded [NEC 516-5 (c)]
- signs indicating necessity for grounding of other persons entering spray area

### 10-6      **Grounding (NEC 516-5)**

- All electrically conductive objects in spray area shall be grounded
- Equipment shall have signs indicating need for grounding
- Conveyors or hangers arranged to assure goods are grounded



① Electrostatic hand-spraying equipment of approved type.

High voltage equipment designed so as not to:

- produce sparks of sufficient energy to ignite most hazardous vapors
- produce appreciable shock hazard

② All electrically conductive objects in spraying area shall be adequately grounded and signs posted.

③ Electric equipment interlocked with spraying area ventilation.

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## CHAPTER 11

### DRYING, CURING OR FUSION PROCESSES

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- |             |   |
|-------------|---|
| <b>11-1</b> | <b>Standard</b> <ul style="list-style-type: none"><li>• Conform to NFPA 86 , <i>Standard for Ovens and Furnaces</i></li></ul>   |
| <b>11-2</b> | <b>Drying</b> <ul style="list-style-type: none"><li>• Spray rooms or booths shall not be used for drying, curing or fusion</li></ul>  |
| <b>11-3</b> | <ul style="list-style-type: none"><li>• Spray booths or rooms also used for air drying, curing or fusion with temperatures ambient shall have ventilation to maintain exhaust stream &lt; 25% of LFL</li></ul>  |
| <b>11-4</b> | <b>Batch Type Operations</b> <ul style="list-style-type: none"><li>• Spray booths or rooms may alternately be used for drying, curing or fusion if:<ul style="list-style-type: none"><li>- all requirements of standard are met, plus</li><li>- interior surfaces kept free of residue</li><li>- automatic shut-down of drying apparatus if temperatures &gt; 200°F</li><li>- radiant drying apparatus listed for exposure to vapors, mists, dusts, residues or deposits</li><li>- spraying, drying and ventilation equipment interlocked so that:<ul style="list-style-type: none"><li>• spraying apparatus cannot be operated when drying apparatus is in operation</li><li>• interlocks per NFPA 86, <i>Standard for Ovens and Furnaces</i></li></ul></li><li>- fuel tanks other than gasoline or diesel shall be removed from vehicle</li></ul></li></ul> |

11-5

- Drying, curing or fusion apparatus shall have sign indicating
  - spraying shut down during drying
  - ventilation required during drying



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## CHAPTER 12

### AUTOMOBILE UNDERCOATING IN GARAGES

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12-1

#### Exemption

- Exempt from requirements if
  - adequate natural or mechanical ventilation
  - undercoating materials not more hazardous than kerosene
  - solvents have flash point over 100°F
  - no open flames within 20 ft.

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## CHAPTER 13\*

### POWDER COATING

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#### 13-1 Combustible Dry Powder

- Effectively confined by:
  - completely enclosed room with adequate ventilation
  - spray booths adequately ventilated

#### 13-4 Electrical and Other Sources of Ignition

- Electrical equipment in accordance with NFPA 70
- Preheated parts not within 50°F of autoignition temperature of powder
- All powder transport, application, and recovery equipment as well as work pieces shall be grounded

#### 13-5\* Ventilation

- Adequate to maintain exhaust duct powder concentration to 1/2 of minimum explosive concentration (MEC)
- If MEC not known for powder, powder concentration shall be less than 0.015 oz. per cu. ft.
- If, by design, exhaust concentration is above 50% MEC listed suppression equipment required (NFPA 69)
- Effectively tight enclosures shall have blowout openings

- Average air velocity
  - electrostatic booth openings: 60 fpm
  - non-electrostatic booth openings: 100 fpm

### **13-6      Drying, Curing or Fusion Equipment**

- Temperature of work piece not within 50°F of autoignition temperature of powder
- *NFPA 86, Standard for Ovens and Furnaces* apply

### **13-7      Operation and Maintenance**

- Maintained to prevent dust accumulation
- “No Smoking” signs required:
  - powder coating area
  - powder storage rooms

### **13-10     Electrostatic Fluidized Beds**

- Electrical equipment shall be outside of hazardous areas
  - transformers
  - power packs
  - control apparatus
- All electrically conductive objects adequately grounded (13-10.3)
- Objects being coated shall be bonded (13-10.4)
- Electrical equipment and compressed air supplies interlocked with ventilation

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**CHAPTER 14\***  
**ORGANIC PEROXIDES AND PLURAL COMPONENT**  
**COATINGS**

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14-1

**Protection**

- All spray operations shall be protected

14-2

- Protect organic peroxides from contamination

14-3

- Organic peroxides stored in cool area
  - “No Smoking” signs required
  - only designated personnel in area

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## CHAPTER 15\*

### TRAINING

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15-1

#### Training

- All personnel trained in:
  - safety
  - health hazards
  - maintenance
  - emergency procedures
  - handling of materials
- Personnel training shall be recorded

