



CITY OF BLOOMINGTON
Fire Prevention Division

STATEMENT OF POLICY

Policy #: BFP-0014	Spray Booth Fire Protection Systems		
Reviewed and Approved By: Gene Dugal	Title: Fire Marshal	Effective Date: September 1, 2008	Revised Date:

PURPOSE:

The installation and maintenance of all spray finishing equipment and booths shall comply with the Minnesota State Fire Code (MSFC).

POLICY:

Prior to issuance of any permit, the applicant must provide three sets of plans that include the scale and size of spray booth(s) or spraying area, location within room area, or place of building. The submittal must include the manufacturer’s specifications and the responsible party for the installation or construction of the spray booth or area.

Plans and manufacturer’s specifications must be submitted for review and issuance of a mechanical permit and electrical permit. Extinguishing system plans and hydraulic calculations must be submitted for review and issuance of a fire extinguishing system permit.

Size and Location:

- The aggregate area of spray booths shall not exceed 10% of the floor area or basic allowable area allowed for group H-2 occupancy without area increases. Individual booths shall not exceed the lesser of the aggregate size or 1500 square feet

Exception: One individual booth not exceeding 500 square feet.

- Booths shall be constructed of noncombustible materials. Aluminum shall not be used. The interior surfaces of spray booths shall be smooth and shall be constructed so as to permit the free passage of exhaust air from all parts of the interior and to facilitate washing and cleaning, and shall be designed to confine residues within the booth.
- A three-foot clear space is required around all spray booths unless booth can be adequately maintained and it is located against non-combustible exterior wall or 1 hour partition.

Ventilation/Mechanical

- Air velocity at open face of booth or booth cross section shall not be less than 100 lineal feet/minute and shall comply with MSFC 1504.7.3

- Termination point of exhaust ducts must comply with MSFC 1504.7.6.
- Exhaust ventilation systems shall be interconnected to the spraying equipment such that spraying cannot take place unless the ventilation system is operating.
- Make up air shall be provided and so located as to prevent re-circulating of exhaust air as required by the Fire Code and Mechanical Code.
- Exhaust system intake air ducts shall be provided within six inches of the floor in the spray booth to assist with the ventilation of flammable vapors.

Electrical

- Flammable and combustible liquid spraying areas are classified as Class I, Division 1 or Class II, Division 1 hazardous locations by the electrical code. All wiring and equipment must be of an explosion proof type and be approved for hazardous locations.
- Electrical wiring and equipment outside of but within 10 feet of the floor and 20 feet horizontally of the limited spraying space shall be designed for Class I, Division 2 or Class II, Division 2, whichever is applicable.
- Metal parts of spray booth, exhaust ducts and piping systems shall be electrically grounded in accordance with the National Electrical Code.
- Fixed lighting in compliance with MSFC Section 1504.6.2 must be used for illuminating the booth.

Automatic Fire Extinguishing System

- Automatic fire extinguishing system sprinklers or nozzles are required in the spray area, immediately behind the filters, and throughout the duct(s) so as to provide 100 percent coverage. The sprinkler contractor must submit plans and hydraulic calculations for review and issuance of a fire permit.
- A separate indicating type control valve shall be provided isolating the spray booth sprinkler system from the rest of building's sprinkler system. The valve shall be equipped with a tamper switch and wired to the supervisory alarm side of the fire alarm system.
- Sprinkler heads shall be protected from spray residue by a lightweight plastic (.003 inch) or paper bag.
- Activation of a sprinkler head within the spray booth shall activate an interior audible/visual fire alarm device. The Fire Inspector must approve device location.

Portable Fire Extinguisher

- One 4A-40BC rated fire extinguisher must be located within 30 feet of each spray booth.

Elimination of Ignition Devices and Accumulation of Combustibles

- Open flame or spark producing devices shall not be located within 20' of a booth opening.
- NO SMOKING and NO WELDING signs must be conspicuously posted in the area where spray booths are located.
- Excessive residue accumulations on booth, ducts, and exhaust fan blades must be promptly removed.
- Listed disposal cans with lids must be provided for disposal of soiled shop rags.

Flammable and Combustible Liquids

- Flammable and combustible liquid container storage exceeding ten gallons must be located within a U.L. listed flammable liquids cabinet.
- Material safety data sheets (MSDS) and a Hazardous materials inventory statement (HMIS) for all flammable and combustible liquids must be kept on site.