MNSPECT LLC
HELPING YOU COMPLY WITH THE CODE

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PAINT SPRAY BOOTH REGULATIONS AND USE

- Fire permits are required for all paint spray booths. (Use a building permit application form.)
- Along with the completed application, submit:
  - A floor plan, including the paint spray booth, all ventilation equipment, electrical criteria (amps, watts, phase, hazard-classification)
  - A detail sheet that shows that the electrical equipment is interlocked with the ventilation system so that equipment cannot operate unless the ventilation system is in operation.
  - Exterior booths shall be provided with engineering for both structural and lateral loads as required by the Building Code.
- All materials and the installation of all materials must comply with the Minnesota State Building Code and the manufacturers' installation specifications for each product.

PERMIT CARD AND APPROVED PLANS (throughout the project) shall be:

POSTED prior to start of work - **VISIBLE** from street or driveway - **ACCESSIBLE** to the inspector

INSPECTION REQUIREMENTS:

- **MUST** schedule during office hours **AT LEAST** one business day prior to required inspection. If a specific date and/or time will be required, more notice may be needed – please plan ahead. A re-inspection fee may be charged for failure to cancel an inspection for which you are not ready, or for failure to pass an inspection.
- Office Hours: Monday - Friday • 8:00 a.m. - 4:30 p.m.
- Phone: (952) 442-7520 or (888) 446-1801

Inspections: See your permit card to determine which inspections are required for your project.

Warning: The inspector may issue an order to remove materials to verify compliance with the MN State Building Code and manufacturer's installation requirements.
If a re-inspection is required, a re-inspection fee will apply. The permit holder (the signing applicant) or the permit holder's representative must meet the inspector at the site to provide access. The re-inspection will not be conducted if the re-inspection fee is not paid.

Note: For specific code requirements, please contact the Building Inspection Department at 952-442-7520 or 888-446-1801 or e-mail: info@mnspect.com.

PROJECT CHECKLIST:

The following is a guideline to assist in compliance with the requirements of the MN State Building Code.

Paint Spray Booths shall comply with Chapter 24 of the 2015 Minnesota State Fire Code and NFPA Standards 13 and 33, as follows:

- ☐ Paint spray booths shall not exceed 1500 square feet nor 10% of the basic allowable area permitted for the major use of the building as allowed by the IBC.
- ☐ Paint spray booth's structure (walls, floors, ceiling) and exhaust duct work must be made of non-combustible material.
- ☐ Each booth must have an independent exhaust system discharging to the exterior.
- ☐ Interior surfaces must be smooth and easy to clean.

- ☐ Special "explosion proof" electrical wiring is required for all wiring within the paint spray booth. Metal parts of paint spray booths, exhaust ducts, and piping systems conveying flammable or combustible liquids or aerated solids must be properly grounded. No spark or flame producing equipment is to be located within 20 feet of a paint spray booth.
- ☐ Paint spray booths must be protected by approved automatic fire sprinklers to be located in the booth and the exhaust duct for spray operations which use flammable or combustible chemicals.
- ☐ Each paint spray booth must be separated and have a clear space of not less than three (3) feet from walls and other operations.
- ☐ Exhaust ventilation must be provided to draw vapors and overspray out of the paint spray booth. Room temperature air must be supplied to replace the volume of air which goes out the paint spray booth exhaust.
- ☐ The termination point for exhaust ducts discharging to the atmosphere shall not be less than the following:
  - A. Ducts conveying explosive or flammable vapors, fumes or dusts: 30 feet from property line; 10 feet from openings into the building; Six (6) feet from exterior walls or roofs; 30 feet from combustible walls or openings into the building which are in the direction of the exhaust discharge; 10 feet above adjoining ground level.
  - B. Other product-conveying outlets: 10 feet from property line; 3 feet from exterior wall or roof; 10 feet from openings into the building; 10 feet above adjoining ground level.
- ☐ Exhaust ducts must be of the following U.S. Standard Gage:

Diameter	Gage
8" or less	No. 24
8"+ to 18"	No. 22
18"+ to 30"	No. 20
Over 30"	No. 18

- ☐ Exhaust ducts must have eighteen (18") inches clearance to unprotected combustible construction. Unprotected combustible construction clearance may be reduced as follows:

Construction Type	Reduced Clearance
No. 28 gage metal on ¼" insulating millboard	12"
No. 28 gage metal on 18" insulating millboard Spaced out 1" on non-combustible spacers	9"
No. 22 gage metal on 1" rock-wool with batts Reinforced with wire-mesh	3"

- ☐ Exhaust ducts must not be installed at an angle exceeding forty-five (45) degrees.
- ☐ Exhaust ducts must be provided with a tight-fitting sliding or hinged door clean-out opening equal to or greater in thickness than the duct.
- ☐ Electrical motors for exhaust fans cannot be located inside the booths or ducts. All rotating elements must be non-ferrous or non-sparking.
- ☐ Paint spray booths must have mechanical ventilation adequate to accumulation of vapors, with a minimum of six (6) air changes per hour (AC/HR).
- ☐ The average air velocity through the booth from end to end must not be less than 100 feet per minute (fpm). There must also be enough air going through the spray booth to dilute solvent vapor to at least 25 percent of the lower explosive limit (the regulation contains information needed to calculate ventilation requirements).
- ☐ A pressure gauge must be installed to show the pressure drop across the booth filters. The pressure gauge should be marked to indicate normal air flow, and to indicate when the filters will need replacement.
- ☐ Electrical equipment is interlocked with the ventilation system so that equipment cannot operate unless the ventilation system is in operation.

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PLAN VIEW

ELEVATION

PLAN VIEW

Q = 100 cfm/sq ft of cross-sectional area *
(When W x H is greater than 150 sq ft, Q = 50 cfm/sq ft)
Entry loss = 0.50 VP plus resistance of each filter bank when dirty
Duct velocity = 1000 - 3000 fpm
Air filters to be sized for 275 cfm/sq ft of filter
Paint filters: combustibility Class 2 or better; consult mfr for size and number

ELEVATION
Typical filter installation

Requirements for operating paint spray booths:

1. A portable fire extinguisher is to be located near the spray area.

2. Chemicals such as paints, etc., kept near the paint spray booth must be limited to the amount needed for one shift.

3. Employees working at spray operations must stay upwind of the object being sprayed. If employees must be downwind of the object being sprayed, the employee must wear an appropriate respirator.

4. The employee must not be over exposed to chemicals/vapors from the spray operation. The material safety data sheet for the product being used should list chemicals to be concerned about and the exposure limits for each chemical.

5. Combustible residue must not be allowed to build up on the interior of the paint spray booth. Clean walls and floors regularly.

6. Rags and debris wet with flammable liquid must be disposed of in a covered metal trash container. The trash container must be emptied to an outdoor location once a day.

7. Transferring flammable or combustible liquid from one container to another requires providing an electrical bonding “strap” or wire between the two containers.

8. Spray equipment under air pressure must be provided with a visible pressure gauge and must have a relief valve.

9. A “NO SMOKING” sign is to be posted at all spraying areas and paint storage rooms.

10. A conspicuous welding warning sign is to be posted in the vicinity stating:

NO WELDING.
THE USE OF WELDING OR CUTTING
EQUIPMENT IN OR NEAR THIS AREA
IS DANGEROUS BECAUSE OF FIRE AND
EXPLOSION HAZARDS. WELDING AND
CUTTING SHALL BE DONE ONLY UNDER
THE SUPERVISION OF THE PERSON IN
CHARGE.

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