

Take a proactive approach to loss prevention!

Spray Finishing Operations



If you work in auto body repair or cabinetmaking, or if your company makes plastic or metal products, you probably need to use a spray gun. It's important to know the risks of spray finishing operations.

Hazards of spray finishing

The main hazards in spray finishing operations include fire and explosion as a result of the materials used and the environment in which they are applied. The nature of the product, the presence of flammable solvents in the paint, or spraying in the wrong kind of space, can contribute to the hazards. It's important to take certain precautions to reduce the risk of fire and explosion.

Spray finishing locations (spray area)

By using a properly ventilated spray booth or spray room, the vapours and overspray can be confined, reducing the risks of fire and explosion. **Spray finishing should not be done in the open**, as it is very difficult to control overspray, ventilation and ignition sources.

Spray booths

- In general, spray booths are constructed of smooth sheet metal with non-combustible parts (masonry or concrete).
- Booths are typically prefabricated in accordance with specific design considerations specified in NFPA 33*.
- The floor should be made of non-combustible materials.

Spray rooms

Spray operations may also be conducted in a separate, enclosed, 1-hour rated room designed specifically for these operations and provided with mechanical ventilation.

Controls

Ignition Sources

A spark from operating equipment, contact with heated surfaces or other sources of ignition, can cause a fire in the spray finishing area and cause extensive damage.

- No smoking, open flames, spark producing equipment, or exposed surfaces (hot plates, motors, etc.) exceeding the ignition temperature of the material being sprayed are allowed within 6m (20') of any spray area.

Ventilation

- Sufficient movement of air through the spray finishing area is essential to direct overspray deposits and vapours to the outside of the building and to prevent the deposits and vapours from "backing up" or spreading outside of the spray booth or room
- Exhaust air from the booth or room should not be re-circulated inside the building.

Interlocks

Fans should be interlocked with the spray finishing equipment to ensure the spray operation can only be performed while the ventilation system is operating.

Overspray Removal

A system is required to collect overspray to prevent accumulations within the ductwork and on the fan impeller. This will greatly minimize the fire spread should a fire break out inside the spray booth. Three general overspray removal devices are dry baffles, dry filters and water wash systems.

Fire Protection

- NFPA 33* states that all spray painting operations using any combustible material, whether solvent or water-based, requires a fire suppression system.
- In automatic sprinkler protected buildings, automatic sprinklers are the easiest extinguishing devices to install in a spray booth. Alternatively, automatic sprinkler heads can be connected to a domestic line in a building that is not sprinkler protected. Sprinkler heads should be installed in the booth, behind baffles or filters, and there should be at least one located in the exhaust duct above the fan.

- Where Automatic Sprinkler protection is not provided or where another type of fire protection is better suited, spray areas should be protected by one of the following fixed suppression systems:
 - A dry chemical extinguishing system
 - A CO2 system
 - A gaseous agent extinguishing system
- A portable extinguisher rated for Class B fires should be installed in close proximity to the spray booth.

Housekeeping

- Cleaning rags should be stored in an approved metal containers.
- Sprinkler heads are to be protected by plastic or light paper bags.
- Location and quantities of flammable and combustible liquid storage should be in accordance with applicable fire codes.

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* National Fire Protection Association standard for spraying flammable or combustible materials
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