

Purpose

This guideline has been developed to help improve consistency with the installation, education and enforcement surrounding the installation of a spray operation within a building.



Code Reference

National Fire Code – 2019 Alberta Edition Article 5.4.5.2. Design, Operation and Maintenance
National fire Code – 2019 Alberta Edition Table 4.2.9.1. Rooms for Container Storage and Dispensing
NFPA 33, “Spray Application Using Flammable or Combustible Materials”
NFPA 5000, “Building Construction and Safety Code”
National Building Code – 2019 Alberta Edition Table 3.1.3.1. Major Occupancy Fire Separations
National Building Code – 2019 Alberta Edition Article 3.1.3.2. Prohibition of Occupancy Combinations
National Building Code – 2019 Alberta Edition Article 3.2.2.6. Multiple Major Occupancies
National Building Code – 2019 Alberta Edition Article 3.2.2.8. Exceptions for Major Occupancies



Summary

The requirements of this Guideline are applicable to, and provide clarity towards the options available for ensuring compliance to the National Building Code – 2019 Alberta Edition (NBC-2019AE) when installing spray booths, spray rooms and mixing rooms associated with the use of a spray operation in a Part 3 building.



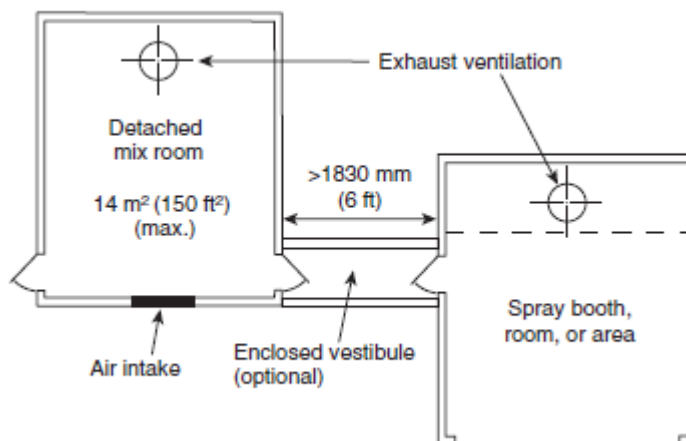
Interpretation

This Guideline provides clarity and direction from Rocky View County on their interpretation towards the installation of spray booths and spray rooms. Based on the information provided within this Guideline, spray operations should be installed in the following method(s).

- 1) Definitions – The definitions of spray booths, spray rooms and spray areas as per the NFPA 33 standard are:

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- a) Spray Booth – A power-ventilated enclosure for a spray application operation or process that confines and limits the escape of the material being sprayed, including vapors, mists, dusts, and residues that are produced by the spraying operation and conducts or directs these materials to an exhaust system.
- b) Spray Room – A power-ventilated fully enclosed room used exclusively for open spraying of flammable or combustible materials.
- c) Spray Area – Any fully enclosed partly enclosed, or unenclosed area in which dangerous quantities of flammable or combustible vapours, mists, residues, dusts, or deposits are present due to the operation of spray processes, including 1) any area in the direct path of the spray application process, 2) the interior of a spray booth, spray room, or limited finishing workstation, etc.



2) Location Restrictions

- a) NFPA 33 – Spray application operations and processes shall be located in industrial occupancies as defined in NFPA 5000. Industrial occupancies are ones in which products are manufactured or in which processing, assembling, mixing, packaging, finishing, decorating, or repair operations are conducted. This does not include areas used primarily for the storage or sheltering of goods, merchandise, products or vehicles.
- b) National Building Code – 2019 Alberta Edition – A spray painting operation cannot be contained within Assembly occupancies (Group A1, A2, or A3), Care or Detention Occupancies (Group B1, B2 or B3), or Residential occupancies (Group C).

3) Clearances – As per the NFPA 33 standard.

- a) Spray Booths – When installed within a building, spray booths must provide a minimum clearance of 1 meter to any interior combustible wall or floor/ceiling assembly, or the assembly must be provided with a 1 hour fire resistance rating. Spray booths can be located

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within 1 meter to an exterior wall, if the exterior wall is constructed of non-combustible material.

- b) Spray Rooms – When installed in a building, spray rooms shall be constructed of and separated from surrounding areas of the building by assemblies that have a fire resistance rating of 1 hour.

4) Installation

- a) Where a spray application operation is located in a building classified as a mercantile, business, or storage occupancy, the spraying must be located in a room separated both horizontally and vertically from all surrounding areas by construction having a 2-hour fire-resistance rating. The room must also be protected by a designed and installed NFPA 13 approved sprinkler system.
- b) When a spray application operation is installed in an industrial occupancy, the operation must meet the following separation conditions:
 - i) Spray Booth / Spray Room - When a spray booth or spray room is installed, the booth/room must be located so that the clearances noted above in Item #3 have been met.
 - ii) Mixing Room / Paint Storage Area – Where a mixing room and/or storage room is not located within an enclosed spray booth or spray room meeting the requirements noted above, this room/area must be separated from the adjacent space within the bay by a fire resistance rating meeting the minimum provided in the National Fire Code – 2019 Alberta Edition Table 4.2.9.1. Maximums stated below can be doubled if the room is sprinklered in conformance with NFPA 30 “Flammable and Combustible Liquids Code”, or protected by an automatic fire suppression system.

Table 4.2.9.1.
Rooms for Container Storage and Dispensing
 Forming Part of Sentences 4.2.9.1.(1) and (2)

Maximum Quantity, L	Minimum Fire Separation Around Room, h	Maximum Density, L/m ²
10 000	2	200
1 500	1	100

5) Permit Application Requirements

- a) Pre-Manufactured Units – Spray operation units such as spray booths or spray rooms which have been pre-manufactured must be designed to meet the NFPA 33 “Spray Application Using Flammable or Combustible Materials” standard. These units must provide confirmation of certification through an accredited certifying organization such as CCMC, Intertek (ETL) or ULC.

- b) Site Constructed Units – Spray operation units such as spray booths and spray rooms which are constructed on site must be designed to meet the construction requirements set out in NFPA 33 “Spray Application Using Flammable or Combustible Materials” standard. The plans for these units must be stamped and signed by a registered engineering professional and include the appropriate A and B schedules.



Reference

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