City of Coquitlam | Planning and Development | Building Permits Division

GUIDE

SPRAY BOOTH INSTALLATIONS

GUIDE OVERVIEW

This guide is intended to assist the applicant with their requirements for a spray booth building permit application. This is only an example of the information required for a drawing set submission, and is not intended to be reproduced for a building permit application.

Spray coating operations involving the use of combustible dry powders, flammable liquids or combustible liquids are classified as a Hazardous Process in the BC Fire Code (BCFC). A building permit is required for the installation of spray booths or the use of spray equipment in a building.

GENERAL REQUIREMENTS

This is a general list consolidating common requirements compiled for information only and should not be considered a complete list.

- Applicant to engage a professional when preparing drawings for this application to show the construction, ventilation, electrical, and fire protection features associated with the spray coating operation.
- Substandard drawings will not be accepted.
- Permit drawings must provide sufficient information to describe the full scope of work.
- Submissions are required to comply with the latest version of the British Columbia Building Code and applicable City of Coquitlam bylaws and regulations.
- All drawings are to be neat, to scale and of draftsman quality.
- Metric or Imperial standard may be used, but not mixed.
- Agent Authorization Form (if applicable).

PERMIT SPECIFIC REQUIREMENTS

- Four (4) site/key plans showing area where spray booths are located.
- Four (4) floor plans showing size and location of spray booth in existing building.
- Four (4) sealed original sets of spray booth drawings with full details, including booth shop drawings.
- One (1) sealed original Schedule B1/B2 for the spray booth system (mechanical, sprinkler, interlocks). Ensure all the relevant items are included on each registered professional's schedule.

PERMIT SPECIFIC REQUIREMENTS CONTINUED

- The sealed drawing must include the applicable Code references, i.e., NFPA 33, BC Fire Code.
- Spray booth to be sprinklered or it could be considered an F1 occupancy.
- Fire Services approval is required. Development Planning and Plumbing approvals may be required.
- Non code compliant designs will require Alternative Solutions approval prior to issuance of building permit. Contact Building Permits staff for Alternative Solutions application requirements.

FEES

Based on the value of work proposed, fees outlined in the City of Coquitlam's Fees and Charges Bylaw will be collected as follows:

- 25% of the permit value when the application is made.
- Balance of the permit value when the permit is issued.

INSPECTIONS

Complete information on inspections can be found on our Inspections page and Fire Rescue's Inspection page.

- Buildings and/or structures requiring a building permit will also require inspections performed by City Building Officials.
- Plumbing permits for new plumbing systems and services will require inspections by City Plumbing Officials.
- Fire suppression systems (building sprinklers) will require inspections by City Plumbing Officials.

SEE THE FOLLOWING PAGES FOR CITY OF COQUITLAM BUILDING AND FIRE PREVENTION BYLAW, BC FIRE CODE AND FIRE SERVICES ACT REQUIREMENTS

This information is provided for convenience only and is not in substitution of applicable City Bylaws, Provincial or Federal laws and regulations. Always refer to official documents. The City is not responsible for errors found in copies or alterations of this document.

City of Coquitlam Fire/Rescue
Operational Guidelines

SPRAY BOOTH INSTALLATIONS

FP 9

Revised: Feb. 15, 2017

This bulletin defines the permit requirements to comply with the City of Coquitlam Building and Fire Prevention Bylaws and the BC Building Code/BC Fire Code Regulations.

1.0 DRAWING REQUIREMENTS

1.1 Four (4) sets of plans are required for permit application – submitted to the Building Division as noted above.

1.2 Plans shall include the following details:

a) The design and operation requirements relating to spray coating operations shall conform to NFPA 33, “Standard for Spray Application Using Flammable or Combustible Materials,” in accordance with Part 5 of the BC Fire Code.

b) Ventilation and exhaust systems shall be designed and installed in accordance with the applicable requirements of NFPA 91, "Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Non-combustible Particulate Solids".

c) Spray booths or rooms used for drying at elevated temperatures shall be designed and installed in accordance with the applicable requirements of Chapter 13 of NFPA 33 and the requirements of NFPA 86, “Standard for Ovens and Furnaces”.

d) Sealed by a professional engineer and include Letters of Assurance (Schedule B) for both mechanical and fire suppression system disciplines.

e) Details of duct, booth and hood construction, sizes and clearances.

f) Location of booth, duct and exhaust outlet, including adjacent buildings and property lines.

g) Exhaust make-up air, booth size and equipment specifications.

h) Details of methods used to maintain fire separations where required.

i) Details of the means of egress from the booth enclosure;

j) Locations of hazardous electrical areas.

k) Exhaust and make-up air supply flow rates.

l) Fire suppression system details.

m) Details of all electrical interlocks required for the safe use of the spray booth.

2.0 PERMITS REQUIRED

2.1 Building & plumbing (booth, sprinklers, water wash requirements, etc.)

2.2 Electrical (interlocks, exhaust fan motor, lighting, etc.) Contact Technical Safety BC for further information.

2.3 Natural gas (booths with heated make-up air or drying cycles.) Contact Technical Safety BC for further information.

3.0 GENERAL

3.1 A fire safety plan shall be developed for the spray operations and storage of flammable and combustible liquids in accordance with Division B Parts 2 and 5 of the BC Fire Code.

3.2 Enclosed spray booths shall be provided with a means of egress in accordance with the BC Building Code.

3.3 Spray application operations shall not be conducted in any building classified as a Group A, B or C major occupancy unless they are located in a room that is separated from the remainder of the building by a 2 hour fire-separation and has also been permitted by the City Building Permits Department. In addition, the building shall be protected by an automatic sprinkler system.

3.4 Prior to recommending acceptance of the spray booth, a member of Coquitlam Fire/Rescue – Fire Prevention Division is to witness a practical test of the fire suppression system and mechanical interlocks in accordance with the approved drawings.

3.5 Portable fire extinguishers are required as per the BC Fire Code.

4.0 PAINT/SOLVENT STORAGE AND MIXING

4.1 When mixing of paints or solvents is performed in a separate room, the room must be constructed in accordance with Section 8.3 of NFPA 33.

4.2 Where a separate room is not provided mixing of paint shall be conducted within a spray room or booth.

4.3 Paints and solvents must be stored in an approved storage cabinet or in a separate well ventilated room. This room must be separated from the remainder of the building by a one hour fire separation and be designed in accordance with Division B Part 4 of the BC Fire Code. Cabinets and rooms are to be "labelled" as per the BC Fire Code.

4.4 The amount of flammable liquids stored in the spraying area and located outside of cabinets or specifically designed storage or paint mixing rooms is not to exceed the greater of one day's supply or:

a) 100 l of Class IA liquids in closed containers; plus

b) 500 l of Class IB, IC, II and IIIA liquids in closed containers in buildings of industrial occupancy.

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Coquitlam Fire/Rescue

Paint Spray Booth Checklist – NFPA 33

Building Address: _____

Contact Name: _____ **Contact Phone:** _____

Date: _____ **Inspector:** _____ **Officer Signature:** _____

	Yes	No	N/A	**Documentation Supplied**
1	☐	☐	☐	Mechanical and Fire Suppression system Schedule 'C's submitted to Building Inspector
2	☐	☐	☐	Electrical and Gas approvals from Technical Safety BC submitted to Building Inspector
3	☐	☐	☐	Installer certificate submitted for dry chem. ext. systems / sprinkler permit complete for wet system
4	☐	☐	☐	Updated or new fire safety plan submitted
5	☐	☐	☐	All components located same as approved permit drawings
				Spray Booth Components
6	☐	☐	☐	All construction is of non-combustible components
7	☐	☐	☐	Walls and ceilings are 18 gauge sheet metal
8	☐	☐	☐	Floor surface is non-combustible
9	☐	☐	☐	Air intake/overspray filters UL 900 Class 1 or 2 listed
10	☐	☐	☐	915mm (36") clearance to walls for cleaning and maintenance purposes
11	☐	☐	☐	Vision panels for observation and lighting fixtures are heat-treated or wired glass and are sealed
12	☐	☐	☐	High limit switch provided to shut-down bake cycle equipped booths at 93ºC
				Ventilation Equipment
13	☐	☐	☐	Make up air supply present
14	☐	☐	☐	Exhaust duct minimum 1.8m (6') above roof surface
15	☐	☐	☐	Exhaust duct minimum 7.6m (25') away from adjacent construction and unprotected openings
16	☐	☐	☐	Exhaust ducts are steel construction
17	☐	☐	☐	Exhaust ducts have substantial support to prevent collapse in the event of a fire
18	☐	☐	☐	Access panels provided for inspection and cleaning in exhaust duct
19	☐	☐	☐	Min. 450mm (18") clearance provided between exhaust duct and comb. construction within building
20	☐	☐	☐	Fan motor mounted outside of exhaust duct
21	☐	☐	☐	Fan belts located outside of exhaust duct or are completely enclosed
22	☐	☐	☐	Rotating element of the fan is non-ferrous (material to contain little or no iron)
				Fire Suppression System
23	☐	☐	☐	Water based system installed in accordance with NFPA 13
24	☐	☐	☐	Dry chemical system installed in accordance with NFPA 17
25	☐	☐	☐	Sprinklers protected with paper or polyethylene bags
26	☐	☐	☐	Sprinklers provided inside the booth, plenum and exhaust duct
27	☐	☐	☐	For dry chemical systems fusible links provided inside booth, plenum and exhaust duct
28	☐	☐	☐	Means to manually activate dry chemical suppression systems
29	☐	☐	☐	10lb. ABC type fire extinguisher located within 9m (30') of spray area

Ignition Sources & Electrical Equipment

30	☐	☐	☐	Electrical equipment rated for use in hazardous locations
31	☐	☐	☐	Grinding and hot works activities located outside of hazardous locations
32	☐	☐	☐	Unit heaters located outside of hazardous locations – 3 m (10') minimum
33	☐	☐	☐	Light fixtures are listed where installed in hazardous locations
34	☐	☐	☐	Electrically conductive parts of the booth and related systems are electrically bonded and grounded
35	☐	☐	☐	"NO SMOKING OR OPEN FLAMES" signage posted adjacent to spray areas

Flammable & Combustible Liquid Storage

36	☐	☐	☐	Maximum one day supply of flammable or combustible liquid, or maximum 100L of Class IA & maximum 500L of Class IB, IC, II or IIIA in closed containers stored in spray areas
37	☐	☐	☐	Greater quantities of liquids to be stored in cabinets (ULC-C1275), or in NFPA 33 paint mixing room
38	☐	☐	☐	Metal waste containers with self-closing lids provided within tenancy

Operational Tests

39	☐	☐	☐	Spray applicator terminates function upon shut-down of exhaust system
40	☐	☐	☐	Spray applicator terminates function upon opening door in a closed spray booth
41	☐	☐	☐	Spray applicator terminates function upon activation of spray booth bake cycle
42	☐	☐	☐	Spray applicator terminates function upon activation of dry chemical extinguishing system
43	☐	☐	☐	Ventilation system continues to run upon activation of fire suppression system (unless dry chemical)
44	☐	☐	☐	Air test performed for dry chemical extinguishing systems & pressure gauges in operational range
45	☐	☐	☐	Manual pull station or fusible link test activates dry chemical extinguishing system
46	☐	☐	☐	Natural gas and electric power for applicator/heat sources shuts off after fire suppression system activation for bake cycle equipped booths or door is opened to booth
47	☐	☐	☐	Building fire alarm or local gong initiates upon activation of extinguishing system

Any items with a checkmark "✓" in a "Yes" or "N/A" box indicates an acceptable condition. Any items with a checkmark "✓" in a "No" box requires attention and is considered a deficiency.

_____

_____

_____

Pass ☐ **Fail** ☐ **Re-Inspection required** ☐

Occupant/Owner: _____ Date: _____ Time: _____

NOTE: It is the responsibility of the registered owner(s) of the property to comply with all requirements of the BC Fire Code, the Fire Services Act and regulations, the City of Coquitlam Fire Prevention Bylaw 3712 and all other applicable federal, provincial and municipal statutes, regulations and bylaws. The deficiencies noted in this letter must be corrected within _____ hours/days. Failure to correct the deficiencies may result in the commencement of enforcement action without further notice to you.

Revised: November 16, 2017 **CFD-FP-33**