BUILDING DEPARTMENT

CITY OF ONTARIO

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SPRAY BOOTH CORRECTION LIST
(2022 California Codes with Supplement effective July 1, 2024)

Plan Check No:	**Review No:**	**Plan Check Expiration Date: 1 year from submittal**
Site Address:		Existing Building Area sqft:
Project Description:		Spray booth area sqft:
Type of Occupancy:		Wind Speed: V_{ult} = 110 mph , exposure C (per City Ordinance)
Type of Construction:		Fire Sprinklered: YES / NO

Applicant:	Ph: , email:
Owner:	Ph: , email:
Architect/Engineer/Contractor:	Ph: , email:

Reviewed by:	Date:	Ph: (909)395- , e-mail: @ontarioca.gov

INSTRUCTIONS:

⇒ **Numbers in brackets refer to code sections of 2022 California Building Code [CBC], 2022 California Fire Code [CFC], 2022 California Mechanical Code [CMC], 2022 California Plumbing Code [CPC], and 2022 California Electrical Code [CEC]. Supplement effective July 1, 2024 is identified in red fonts (if applicable).**

⇒ **Correct original drawings. Cloud any changes, revisions, or additions. Resubmit corrected plans/calculations/reports along with these correction sheets in digital format. See Attachment # 1 on the last page of correction list for link to "Digital Plan Check Requirements".**

⇒ **In the Respond column, please indicate the sheet number and detail or note number on the plan where the corrections are made or provide a separate response sheet.**

⇒ **Itemize any changes, revisions, or additions made to drawings that are not a direct answer to a correction on a separate sheet.**

⇒ **Plans will not be allowed to be resubmitted until all reviewing departments have completed their review.**

Item #	Sheet #	Correction Requested	Response
	A. APPROVALS:		
1		Obtain approval from the following departments: -Planning Department -Fire Department -SCAQMD	
2		Fill out & print on plan the attached forms: a) Hazardous Material Disclosure Form. (See Attachment # 2 on the last page of correction list for link to this form) b) SCAQMD's Air Quality Permit Check List. (See Attachment # 3 on the last page of correction list for link to this form)	
	B. SUBMITTAL REQUIREMENTS:		
3		Provide the following on the title page of drawings: a) Job site address. b) Owner name and address.	

		c) Designer name and address with signature. d) Building type of construction & occupancy classification. e) Indicate if building is fire sprinklered or not. f) Building area & tenant space area square footage.	
4		Provide a vicinity map.	
5		Provide site plan showing: a) Buildings & tenant space location, property lines, and building setbacks. b) Exhaust duct outlet distance to property lines & to adjacent buildings c) Use of all adjacent tenant suites or spaces.	
6		Provide overall building floor plan showing: a) The proposed & any existing spray booths location and sizes. b) Use of all rooms or areas. c) Fully dimensioned floor plan. d) Show all exit doors.	
7		All sheets of plans must be stamped & signed by a registered professional designer.	
8		Show the correct address of building on plans. [CBC105.3]	
9		Provide an index of drawings on the cover sheet of plans.	
10		Provide legends and abbreviations that are shown throughout the plans. [CBC 105.3]	
11		Void or delete all plans, details, and notes that do not pertain to this project.	
12		Indicate on plan the applicable current codes: - 2022 CBC / 2021 IBC - 2022 CFC / 2021 IFC - 2022 CMC / 2021 UMC - 2022 CPC / 2021 UPC - 2022 CEC / 2020 NEC	
13		If the spray booth is installed in a building that has not been approved for the proposed type of occupancy (change of occupancy), submit a complete plan prepared by a registered design professional for the proposed change of occupancy to include code analysis (such as allowable area analysis, type of construction, sprinkler requirements, number of plumbing fixtures, fire rating of walls, fire separation distance, occupancy separation, etc…)	
14		If the existing or proposed building occupancy is an auto repair garages: a) Specify on plan if there is any open flame or welding area. b) Repair garages with grease racks or grease pits shall be provided with an oil or flammable liquid interceptor that connected to all necessary floor drains per CPC 1017.1.	
	C. EXTERIOR SPRAY BOOTH BUILDING:		
15		Indicate on plan the following note: - Wind Speed: V_{ult} = 110 mph, exposure C (per City Ordinance)	
16		Submit structural plan & calculation (gravity & lateral analysis) for exterior spray booths prepared by a registered professional designer.	
17		For exterior spray booth show the general site drainage slope and direction.	
18		The ground immediately adjacent to the foundations shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal (5%-slope) for a minimum distance of 10’ measured perpendicular to the face of the wall. If physical obstructions or lot lines prohibit 10’ of horizontal distance, a 5% slope shall be provided to an approved alternative method of diverting water away from the foundation. Swales used for this purpose shall be sloped a minimum of 2% where located within 10’ of the building foundation. Impervious surfaces within 10’ of the building foundation shall be sloped a minimum of 2% away from the building. [CBC 1804.4]	
19		Demonstrate handicap compliance for exterior spray booth building construction (i.e., accessible route from public sidewalk to building entrances, accessible parking, accessible restrooms)	
	D. DESIGN AND CONSTRUCTION:		

20		a) The aggregate area of spray booths in a building shall not exceed the lesser of 10% of the area of any floor of the building or the basic area allowed for a Group H-2 occupancy without area increases. [CFC 2404.3.3.6] b) Exception: One individual booth not exceeding 500 sqft. [CFC 2404.3.3.6]	
21		When spray booth aggregate area exceeds 10%, the new room(s) must comply with H-2 occupancy requirements for deflagration hazards (i.e. fire separations, location, explosion venting, etc.). Additional corrections will be required.	
22		Spray booths shall be constructed of steel not less than 18 gage in thickness for single-skin assemblies or 20 gage in thickness of each sheet for double-skin assemblies. Aluminum shall not be used. [CFC 2404.3.3.1]	
23		All portions of spray booths shall be readily available for cleaning, and a clear space of not less than 3 feet around the booth shall be kept free of storage or combustible materials [CFC 2404.3.3.5]. **Exception:** a) Spray booth can be located closer than 3 feet to or directly against an interior partition, wall or floor/ceiling assembly that has a fire resistance rating of not less than 1 hour or noncombustible material and the spray booth can be adequately maintained and cleaned. b) Spray booth can be located closer than 3 feet to an exterior wall or a roof assembly, provided that the wall or roof is constructed of noncombustible material and the spray booth can be adequately maintained and cleaned.	
24		Exit doors from pre-manufactured paint spray booths shall not be less than 30" wide by 80" in height. [CFC 2404.3.3.4 exception]	
25		Indicate on plan that spray booths shall be protected by an approved automatic fire-extinguishing system. These systems shall be extended to protect exhaust plenums, exhaust ducts, and both sides of dry filters when such filters are used. [CFC 2404.4]	
26		The floor of the booth shall be noncombustible, nonsparking material. [CFC 2404.3.3.3]	
27		Indicate on floor plan the location of required portable fire extinguisher. [CFC 2404.4.1]	
	E. GENERAL NOTES:		
28		**<u>Print on plan</u> the following required general notes:** 1) Smoking shall be prohibited is flammable vapor areas and hazardous materials storage rooms associated with flammable finish processes. "NO SMOKING" signs shall be conspicuously posted in such areas. [CFC 2403.2.6] 2) Welding warning signs shall be posted in the vicinity of flammable vapor areas or dipping or coating operations and paint storage rooms with the following warning: "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". [CFC 2403.2.7] 3) Electrical wiring and equipment shall be in accordance with 2022 CFC Chapter 24 and the 2022 California Electrical Code. [CFC 2403.2.1] 4) Interior surfaces of spray booths shall be smooth; 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 residue within the booth. Aluminum shall not be used. [CFC 2404.3.3.2] 5) Floors shall be of noncombustible material or shall be covered with a noncombustible, nonsparking material to facilitate cleaning operation in spray booths. [CFC 2404.3.3.3] 6) When spray booths are illuminated, fixed lighting units that transmit light into the spray booth through heat-treated or hammered wire glass shall be used. Panels for luminaires shall be separated from the luminaire to prevent the surface temperature of the panel from	

		exceeding 200°F. [CFC 2404.6.2.1] 7) Portable electric lamps shall not be used in flammable vapor areas during a spraying operation. Portable electric lamps used during cleaning or repairing operations shall be of a type approved for hazardous locations [CFC 2404.6.2.4] 8) Open flames and spark-producing devices shall not be located in flammable vapor areas and shall not be located within 20' of such areas unless separated by a permanent partition. [CFC 2403.2.2] 9) Metal parts of spray booths, exhaust ducts, and piping systems conveying Class I or Class II liquids shall be electrically grounded in accordance with the 2022 California Electrical Code. [CFC 2403.2.5] 10) Spraying areas shall be provided with mechanical ventilation adequate to prevent the dangerous accumulation of vapors. [CFC 2404.7] 11) Mechanical ventilation shall be kept in operation at all times while spraying operations are being conducted and for a sufficient time thereafter to allow vapors from drying coated articles and finishing material residue to be exhausted. [CFC 2404.7.1] 12) Spraying equipment shall be interlocked with the ventilation of the spraying area such that spraying operations cannot be conducted unless the ventilation system is in operation. [CFC 2404.7.1] 13) Recirculation ventilation systems shall have approved vapor detection systems. If the vapor concentration in the recirculated air stream exceeds 25 percent of the lower flammability limit, the system shall automatically shut down the spraying operation, switch the ventilation system to 100 percent outdoor exhaust and sound an alarm. [CFC 2404.7.2 exception 1] 14) Ventilation systems for open-face or enclosed spray booth shall be designed, installed and maintained such that the average air velocity into the spray booth through all openings is not less than 100 feet per minute except 50 feet per minute for fixed or automated electrostatic spray application equipment. [CFC 2404.7.3.1 & 2] 15) Portable fire extinguishers shall be provided for spraying areas in accordance with the requirements for an extra (high) hazard occupancy. [CFC 2404.4.1] 16) Spray booths and spraying rooms shall not be alternately used for the purpose of drying arrangements which would cause a material to increase the surface temperature of the spray booth or room except in accordance with Section CFC 2404.6.1.1 and 2404.6.1.2. [CFC 2404.6.1]	
	F. VENTILATION:		
29		Provide roof plan showing: a) Locations of spray booth exhaust outlet termination. b) Distance from exhaust outlet to property lines, to parapet wall, and height above ground.	
30		Openings shall not be through wall that is required to be protected due location on property. [CBC Table 705.5]	
31		Each spray booth and spray room shall have an independent exhaust system discharging to the outside. [CFC 2404.7.5]	
32		▪ Multiple spray booths having a combined frontal area of 18 sqft or less are allowed to have a common exhaust when identical spray finishing material is used in each booth. [CFC 2404.7.5 exceptions 1] ▪ If more than one fan serves one booth, fans shall be interconnected such that all fans will operate simultaneously. [CFC 2404.7.5 exceptions 1]	
33		Electric motors driving exhaust fans shall not be placed inside booths or ducts. Fan rotating elements shall be nonferrous or non-sparking or the casings shall consist of or be lined with such material. Belts shall not enter ducts or booths unless belts and pulleys within a duct or booth are tightly enclosed. [CFC 2404.7.7]	
34		Exhaust ducts shall be constructed of steel having a thickness in accordance with California Mechanical Code (CMC) Table 506.2(1) or Table 506.2(2).	

35		The termination point for exhaust ducts shall be not less than the following [CMC 502.2.2, CFC 2404.7.6]: 1) Ducts conveying explosive or flammable vapors, fumes, or dust: a) 30' from property line b) 10' from openings into the building c) 6' from exterior walls or roofs d) 30' from combustible walls or openings into the building that are in the direction of the exhaust discharge e) 10' above adjoining grade 2) Other product-conveying outlets: a) 10' from property line b) 10' from openings into the building c) 3' from exterior walls or roofs d) 10' above adjoining grade	
36		Provide detail of exhaust duct penetration at roof showing duct size, gage, clean outs, supports, clearances, flashing, bracings, etc.	
37		Exhaust ducts shall have a clearance from combustible construction or material of not less than 18 inches. [CMC 506.10.2]	
38		Specify type of protection used to reduce duct clearance per CMC Table 506.11.	
39		When combustible construction is provided with specified form protection applied to all surfaces within 18 inches of the exhaust duct, clearances shall not be less than those indicated on CMC Table 506.11 but not less than specified in Section 506.10 [CMC 506.10.4.2]. Provide detail to illustrate.	
40		When using clearance reduction system that include an air gap between the combustible surface and the selected means of protection, air circulation shall be provided by one of the following methods: a) Provide air circulation by leaving all edges of the wall protecting system open with at least 1" air gap. [CMC 506.11.6.1] b) If the means for protection is mounted on a single flat wall away from corners, provide air circulation by one of the following [CMC 506.11.6.1]: 1) Leaving only the top and bottom edges open to circulation by maintaining the 1" air gap. 2) Leaving the top and both side edges open to the circulation by maintaining the 1" air gap. Provide detail to illustrate.	
41		Duct support shall be of noncombustible materials. Duct support shall not exceed 12' spacing for 8" ducts and 20' for larger ducts [CMC 506.7]. Provide detail & specify type duct support.	
42		For fan motors and belts [CFC 2404.7.7]: a) Electric motors driving exhaust fans shall not be placed inside booths or ducts. b) Fan rotating elements shall be nonferrous or nonsparking material. c) Belts shall not enter the duct or booth unless the belt and pulley within the duct are tightly enclosed.	
43		Makeup air shall be provided to replenish air exhausted by the ventilation system. Makeup-air intakes shall be located so as to avoid recirculation of contaminated air. [CMC 505.10]	
44		Provide accessible cleanouts at 10' interval and at changes in direction. [CMC 506.5]	
45		Ducts conveying explosive or flammable vapors, fumes, or dusts shall extend directly to the exterior of the building without entering other spaces and shall not extend into or through ducts or plenums. [CMC 505.1]	
46		Branches shall connect to main duct at an angle not exceeding 45 degrees. [CMC 506.5]	
	G. FIRE PROTECTION:		
47		Spray booths and spray rooms shall be protected by approved automatic fire-extinguishing system. These systems shall be extended to protect exhaust plenums, exhaust ducts, and both sides of dry filters when such filters are used. [CFC 2404.4]	

	H. STRUCTURAL:		
48		Provide roof framing detail at roof penetration. Specify framing member sizes, hangers, etc. Framing at opening must be double headed and doubled joists.	
49		Exhaust vent at roof must be braced and guyed to prevent lateral and horizontal displacement.	
50		Provide structural plans, details, and calculation for any spray booth over 500 sqft in size.	
	I. ELECTRICAL:		
51		**Areas Subject to Overspray Deposits** – Electrical equipment in flammable vapor areas located such that deposits of combustible residues could readily accumulate shall be specifically approved for locations containing deposits of readily ignitable residue and explosive vapors in accordance with the California Electrical Code. [CFC 2403.2.1.4]	
52		**The following spaces shall be considered as Class I Division 1 (or Class I Zone 1), Class II Division 1 (or Zone 21) locations as per CEC 516.5(C):** 1) All interior locations of spray booths and rooms. 2) All interior of exhaust ducts. 3) All areas in the direct path of spray operations.	
53		**The following spaces shall be considered as Class I Division 2 (or Class I Zone 2), Class II Division 2 (or Zone 22) locations as per CEC 516.5(D):** 1) <u>For closed-top, open-face, or open-front spray booth and spray rooms [CEC 516.5(D)(2)]:</u> The space within 3 ft radius of any openings. 2) <u>For open-top spray booth</u> [CEC 516.5(D)(3)]: The space measuring 3 feet vertically above the spray booth and within 3 feet of other spray booth openings. 3) <u>For enclosed spray booth and spray rooms</u> [CEC 516.5(D)(4)]: The space within 3 feet in all directions from any openings and the interior of any recirculation path.	
54		<u>Print on plan</u> the following applicable CEC diagram to identify the electrical area classification: a) CEC Figure 516.5(D)(2): *for Closed-Top, Open-Face, and Open-Front Spray Booth.* b) CEC Figure 516.5(D)(4): *for Enclosed Spray Booth*.	
55		Submit electrical plan including single line diagram, panel load schedule calculation, conduit & conductor type and size, overcurrent protection, and disconnects. Show location of existing electrical main and panel.	
	J. ADDITIONAL CORRECTIONS:		

ATTACHMENTS		
1	**Digital Plan Check Requirements**	IB 109 (Digital Plan Check Requirements) - 07_03_2023.pdf (ontarioca.gov)
2	**Hazardous Material Disclosure Forms**	Microsoft Word - Hazardous Material Disclosure Form.doc (ontarioca.gov)
3	**SCAQMD Air Quality Permit Checklist Forms**	http://www.aqmd.gov/docs/default-source/aqmd-forms/air-quality-permit-checklist.pdf?sfvrsn=22