



# Construction/Operational Permit Application



## Hazardous Materials

[www.cityofvancouver.us/departments/fire-department](http://www.cityofvancouver.us/departments/fire-department)

International Fire Code as adopted by VMC 16.04 (Washington State Fire Code)

### Permitting Requirements

An **operational permit** is required to store, transport on site, dispense, use, or handle hazardous materials in excess of the amounts listed in WSFC Table 105.5.22. A **construction permit** is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a storage facility where the hazardous materials in use and/or storage exceed the amounts listed in Table 105.5.22 (See *Permitting Requirements* below for permit thresholds and exceptions).

### Project Information

Site Address			Business Name		
Other					
Contact Name					
Office Phone		Cellular		Email	

### Applicant Information

Company Name			Address		
Contact Name					
Office Phone		Cellular		Email	

### Contractor

Company Name			Address		
Contact Name					
Office Phone		Cellular		Email	
Related Permits:	RES _____	CMI _____	DEF _____	MPE _____	

## Building/Site Information

Occupancy Classification(s)		Fire Alarm	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Fire Sprinklers	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Hazmat storage and use	<input type="checkbox"/> Outdoor <input type="checkbox"/> Indoor	Emergency Alarms	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Control areas	<input type="checkbox"/> Yes	<input type="checkbox"/> No

## Description of Work

Installation by:  Contractor  Owner  Tenant

Application type:  Installation  Operational  Both Installation and Operational

## Permitting Requirements (continued)

An **operational permit** is required to store, transport on site, dispense, use, or handle hazardous materials in excess of the amounts listed in WSFC Table 105.5.22.

A **construction permit** is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a storage facility or other area regulated by Chapter 50 where the hazardous materials in use or storage exceed the amounts listed in WSFC Table 105.5.22.

- Exceptions:
1. Routine Maintenance
  2. For repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work

Refer to WSFC Chapter 2 for definitions of each type of hazardous material.

**TABLE 105.5.22  
PERMIT AMOUNTS FOR HAZARDOUS MATERIALS**

TYPE OF MATERIAL	AMOUNT
<b>Combustible liquids</b>	See Section 105.5.18
<b>Corrosive materials</b>	
Gases	See Section 105.5.9
Liquids	55 gallons
Solids	1,000 pounds
<b>Explosive materials</b>	See Section 105.5.16
<b>Flammable materials</b>	
Gases	See Section 105.5.9
Liquids	See Section 105.5.18
Solids	100 pounds
<b>Highly toxic materials</b>	
Gases	See Section 105.5.9
Liquids	Any Amount
Solids	Any Amount
<b>Organic peroxides</b>	
Liquids	
Class I	Any Amount
Class II	Any Amount
Class III	1 gallon
Class IV	2 gallons
Class V	No Permit Required
Solids	
Class I	Any Amount
Class II	Any Amount
Class III	10 pounds
Class IV	20 pounds
Class V	No Permit Required

TYPE OF MATERIAL	AMOUNT
<b>Oxidizing Gases</b>	See Section 105.5.9
<b>Oxidizing Liquids</b>	
Class 4	Any Amount
Class 3	1 gallon (a)
Class 2	10 gallons
Class 1	55 gallons
<b>Oxidizing Solids</b>	
Class 4	Any Amount
Class 3	10 pounds (b)
Class 2	100 pounds
Class 1	500 pounds
<b>Pyrophoric materials</b>	Any Amount
Gases	Any Amount
Liquids	Any Amount
Solids	Any Amount
<b>Toxic materials</b>	
Gases	See Section 105.5.9
Liquids	10 gallons
Solids	100 pounds
<b>Unstable (reactive) materials</b>	
Liquids	
Class 4	Any Amount
Class 3	Any Amount
Class 2	5 gallons
Class 1	10 gallons
Solids	
Class 4	Any Amount
Class 3	Any Amount
Class 2	50 pounds
Class 1	100 pounds
<b>Water-reactive materials</b>	
Liquids	
Class 3	Any Amount
Class 2	5 gallons
Class 1	55 gallons
Solids	
Class 3	Any Amount
Class 2	50 pounds
Class 1	500 pounds

## Electronic Plan Standards

### File Naming Standards:

Electronic plans and documents shall be named as specified in the City of Vancouver [ePLANS](https://www.cityofvancouver.us/business/permits-licenses-and-inspections/eplans/) system:  
<https://www.cityofvancouver.us/business/permits-licenses-and-inspections/eplans/>



### Acceptable File Types:

Plans, calculations, specifications and supporting documents shall be uploaded as a PDF file.

### Plan Sheet Standards:

All plans shall be drawn to scale, as identified in the checklist, and each sheet shall state the scale and show a measurable scale on the page for measurement calibrations. One page per upload in plans.

### Document Orientation:

All plans must be uploaded in "Landscape" format in the horizontal position with a north indicator. All other documents can be in "Portrait" format. Multiple pages allowed per upload in documents.

### Stamped:

Where documentation contains a code analysis or engineering calculations, such documents shall be stamped by the design professional.

## Minimum Submittal Checklist for Upload to ePLANS

- Completed Fire Installation Permit Application – Hazardous Materials (this document) Check all *Permit Conditions* checkboxes that are applicable to your project
- Supporting documents listed below (HMIS, HMMP, SDS, etc.)
- Site plans and floor plans (see *Plan Details* below)

## Document Details

HMMP Guide: <https://www.cityofvancouver.us/wp-content/uploads/2023/10/Hazardous-Materials-Management-Plan.pdf>

See Vancouver Fire Department HMMP Guide Page 4 for further direction on completing required HMMP and/or supplemental forms

Does your business...	If YES, please complete these pages of the HMMP and supplemental (linked above)	
Have on site (for any purpose) at any one time, hazardous materials, including hazardous waste, at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs)?	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> All HMMP documents
Have on site (for any purpose) at any one time, hazardous materials, including hazardous waste, requiring a permit in accordance with Section 105.5 of the International Fire Code? (see <i>Permitting Requirements</i> above)	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> Facility Information Forms <input type="checkbox"/> HMIS <input type="checkbox"/> Site Map & Storage Plan
Own or operate permanent or portable aboveground storage tanks (AST) or underground storage tanks (UST) containing hazardous materials?	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> Facility Information Forms <input type="checkbox"/> HMIS <input type="checkbox"/> Tank Plan

Conduct spray-finishing or dipping operations?	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> All HMMP documents <input type="checkbox"/> <i>Spraying and Dipping</i> Permit Application (where required)
Operate a repair garage or motor vehicle fueling station?	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> Facility Information Forms <input type="checkbox"/> HMIS <input type="checkbox"/> Site Map & Storage Plan <input type="checkbox"/> <i>Motor Vehicle Repair</i> Permit Application (where required)
Wholesale or retail sales of flammable or combustible liquids?	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> Facility Information Forms <input type="checkbox"/> Flammable and Combustible Liquid Storage in Wholesale and Retail Sales: Owner's Statement of Intended Use
Finish floors with Class I or Class II liquids?	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> Facility Information Forms <input type="checkbox"/> HMIS <input type="checkbox"/> Site Map & Storage Plan
Share the building with any other business?	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> All HMMP documents

**An HMMP must contain the following minimum elements:**

- Facility Information Form: Business Activities Declaration page
- Facility Information Form: Business Owner/Operator Identification page
- Hazardous Materials Inventory Statement (HMIS)
- HMIS Hazard Class Summary Report
- Emergency Response/Contingency Plan
- Employee Training Plan
- Recordkeeping
- Facility Site Plan & Storage Map
- Required supplemental forms

**In addition to required HMMP documents, submit the following with the completed permit application:**

- A written emergency plan as required by WSFC 5001.3.3.15. This plan shall be developed to ensure that proper actions are taken in the event of an emergency, and the plan shall be followed if an emergency condition occurs. The process of developing and updating the plan shall involve the participation of affected employees. Include written documentation of operating procedures and procedures for emergency shutdown.

## Plan Details

The following is a list of information required on all plan submittals. The plan shall be drawn to 1/8"= 1'-0" minimum scale with a measurable scale graphic for review purposes. If scale drawings are not possible, all measurements shall be called out in the drawings.

The applicant is required to submit all this information so an accurate and timely review may be completed:

- Access to each storage and use area.
- Location of emergency equipment.
- Location where liaison will meet emergency responders (WSFC 5003.9.1.1).
- Facility evacuation meeting point locations.
- The general purpose of other areas within the building.

- Location of all above-ground and underground tanks and their appurtenances including, but not limited to, sumps, vaults, below-grade treatment systems and piping.
- The hazard classes in each area.
- Locations of all control areas and Group H occupancies.
- Emergency exits.
- Locations of fire-resistance-rated construction.
- All tank locations, contents, and spill control / secondary containment methods
- Locations of tank vents, dispensing and filling
- Classified electrical areas
- Outdoor and indoor storage configurations and dimensions
- Location and content of required signage
- Details on fire suppression, smoke or fire detection, liquid detection, fire alarms, emergency alarms, thermal management, ventilation, exhaust, and deflagration venting systems, if provided
- Support arrangement associated with the installation, including any required seismic restraint.
- Locations, sizes, and types of portable fire extinguishers
- Existing fixed fire protection system features or proposed new installation (a separate construction permit is required for the installation of or modification to an automatic fire-extinguishing system)
- Vehicle protection if provided in accordance with WSFC 5703.6.3.4 to protect piping, valves, or fitting subject to vehicular damage.
- Existing fixed fire protection system features or proposed new installation (separate permit required for new installations)

## Permit Conditions

The following is a list of WSFC Chapter 28 requirements related to wood product storage. Use this form to confirm that all applicable requirements are met. Non-applicable requirements can be left blank.

### General:

- Classify all hazardous materials in accordance with WSFC 5001.2. Mixtures shall be classified in accordance with hazards of the mixture as a whole.
- Materials designated as hazardous in accordance with the WSFC shall comply with WSFC Chapter 50.

### Exceptions:

1. In retail or wholesale sales occupancies, medicines, foodstuff, cosmetics and commercial or institutional products containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).
2. Alcoholic beverages in retail or wholesale sales occupancies, provided that the liquids are packaged in individual containers not exceeding 1.3 gallons (5 L).
3. Application and release of pesticide and agricultural products and materials intended for use in weed abatement, erosion control, soil amendment or similar applications where applied in accordance with the manufacturer's instructions and label directions.
4. The off-site transportation of hazardous materials where in accordance with Department of Transportation (DOTn) regulations.
5. Building materials not otherwise regulated by this code.
6. Refrigeration systems (see Section 608).
7. Stationary storage battery systems regulated by Section 1207.
8. The display, storage, sale or use of fireworks and explosives in accordance with Chapter 56.

9. Corrosives utilized in personal and household products in the manufacturer's original consumer packaging in Group M occupancies.
  10. The storage of beer, distilled spirits and wines in barrels and casks.
  11. The use of wall-mounted dispensers containing alcohol-based hand rubs classified as Class I or II liquids where in accordance with Section 5705.5.
  12. Specific provisions for flammable liquids in motor fuel-dispensing facilities, repair garages, airports and marinas in Chapter 23.
  13. Storage and use of fuel oil in tanks and containers connected to oil-burning equipment. Such storage and use shall be in accordance with Section 605. For abandonment of fuel oil tanks, Chapter 57 applies.
  14. Storage and display of aerosol products complying with Chapter 51.
  15. Storage and use of flammable or combustible liquids that do not have a fire point when tested in accordance with ASTM D92, not otherwise regulated by this code.
  16. Flammable or combustible liquids with a flash point greater than 95°F (35°C) in a water-miscible solution or dispersion with a water and inert (noncombustible) solids content of more than 80 percent by weight, which do not sustain combustion, not otherwise regulated by this code.
  17. Commercial cooking oil storage tank systems located within a building and designed and installed in accordance with Section 607 and NFPA 30.
- Systems, equipment, and processes utilized for storage, dispensing, use or handling of hazardous materials shall be in accordance with WSFC 5003.2.1 through 5003.2.9, including but not limited to the following:
    - Containers, cylinders and tanks shall be designed and constructed in accordance with approved standards. Containers, cylinders, tanks and other means used for containment of hazardous materials shall be of an approved type. Pressure vessels not meeting DOTn requirements for transportation shall comply with the ASME Boiler and Pressure Vessel Code.
    - Piping, tubing, valves, and fittings conveying hazardous materials shall be designed and installed in accordance with ASME B31.1 or other approved standards, and shall be in accordance with Sections 5003.2.2.1 and 5003.2.2.2.
    - Supply piping and tubing for gases and liquids having a health-hazard ranking of 3 or 4 in accordance with NFPA 704 shall be in accordance with ASME B31.3 and WSFC 5003.2.2.2.
    - Equipment, machinery and required detection and alarm systems associated with the use, storage or handling of hazardous materials shall be listed or approved.
  - Safety Data Sheets (SDS) shall be readily available on the premises for hazardous materials regulated by this chapter. Where a hazardous substance is developed in a laboratory, available information shall be documented (UFC 5003.4)  
*Exception:* Designated hazardous waste.
  - Visible hazard identification signs as specified in NFPA 704 for the specific material contained shall be placed on stationary containers and above-ground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated by the fire code official (WSFC 5003.5). Individual containers, cartons, or packages shall be conspicuously marked or labeled. Rooms or cabinets containing compressed gases shall be conspicuously labeled: "COMPRESSED GAS."
  - Smoking shall be prohibited and "No Smoking" signs provided as follows (WSFC 5003.7.1):
    1. In rooms or areas where hazardous materials are stored or dispensed or used in open systems in amounts requiring a permit in accordance with Section 5001.5.
    2. Within 25 feet of outdoor storage, dispensing or open use areas.
    3. Facilities or areas within facilities that have been designated as totally "no smoking" shall have "No Smoking" signs placed at all entrances to the facility or area. Designated areas within such facilities where smoking is permitted either permanently or temporarily, shall be identified with signs designating that smoking is permitted in these areas only.

4. In rooms or areas where flammable or combustible hazardous materials are stored, dispensed or used.

- Hazardous materials located in Group M and Group S occupancies shall be in accordance with WSFC Sections 5003.8.3.5.1 through 5003.8.3.5.3.

**Safety Precautions:**

- Persons responsible for the operation of areas in which hazardous materials are stored, dispensed, handled, or used shall be familiar with the chemical nature of the materials and the appropriate mitigating actions necessary in the event of fire, leak or spill (WSFC 5003.9.1).
- Responsible persons shall be designated and trained to be liaison personnel to the fire department. These persons shall aid the fire department in preplanning emergency responses and identifying the locations where hazardous materials are located, and shall have access to Safety Data Sheets and be knowledgeable in the site's emergency response procedures (WSFC 5003.9.1.1).
- Storage, dispensing, use and handling areas shall be secured against unauthorized entry and safeguarded in a manner approved by the fire code official (WSFC 5003.9.2).
- Guard posts or other approved means shall be provided to protect storage tanks and connected piping, valves and fittings; dispensing areas; and use areas subject to vehicular damage in accordance with WSFC 312 (WSFC 5003.9.3).
- Where processes or conditions exist where a flammable mixture could be ignited by static electricity, means shall be provided to prevent the accumulation of a static charge (WSFC 5003.9.5).
- Materials that are shock sensitive shall be padded, suspended, or otherwise protected against accidental dislodgement and dislodgement during seismic activity (WSFC 5003.9.7)
- Incompatible materials in storage and storage of materials that are incompatible with materials in use shall be separated where the stored materials are in containers having a capacity of more than 5 pounds (2 kg), 0.5 gallon (2 L) or any amount of compressed gases. Materials that are incompatible shall not be stored within the same cabinet or exhausted enclosure.

Separation shall be accomplished by:

1. Segregating incompatible materials in storage by a distance of not less than 20 feet.
2. Isolating incompatible materials in storage by a noncombustible partition extending not less than 18 inches above and to the sides of the stored material.
3. Storing liquid and solid materials in hazardous material storage cabinets.
4. Storing compressed gases in gas cabinets or exhausted enclosures in accordance with Sections 5003.8.5 and 5003.8.6.

**Handling and Transportation:**

- In addition to the requirements of WSFC 5003.2, the handling and transportation of hazardous materials in corridors or enclosures for stairways and ramps shall be in accordance with WSFC 5003.10.1 through 5003.10.3.6.
  - Hazardous material gas containers, cylinders and tanks in transit shall have their protective caps in place. Containers, cylinders, and tanks of highly toxic or toxic compressed gases shall have their valve outlets capped or plugged with an approved closure device in accordance with Chapter 53 (WSFC 5003.10.1)
  - Liquids in containers exceeding 5 gallons (19 L) in a corridor or enclosure for a stairway or ramp shall be transported on a cart or truck. Containers of hazardous materials having a hazard ranking of 3 or 4 in accordance with NFPA 704 and transported within corridors or interior exit stairways and ramps, shall be on a cart or truck. Where carts and trucks are required for transporting hazardous materials, they shall be in accordance with Section 5003.10.3 (WSFC 5003.10.2).

Exceptions:

1. Two hazardous material liquid containers that are hand carried in acceptable safety carriers.
2. Not more than four drums not exceeding 55 gallons (208 L) each that are transported by suitable drum trucks.



3. Containers and cylinders of compressed gases that are transported by approved hand trucks, and containers and cylinders not exceeding 25 pounds (11 kg) that are hand carried.
  4. Solid hazardous materials not exceeding 100 pounds (45 kg) that are transported by approved hand trucks, and a single container not exceeding 50 pounds (23 kg) that is hand carried.
- Carts and trucks required by WSFC 5003.10.2 to be used to transport hazardous materials shall be in accordance with WSFC 5003.10.3.1 through 5003.10.3.6.

**Testing:**

- The following equipment, systems and devices shall be tested in accordance with WSFC 5003.2.9 and 5003.2.9.2.
1. Gas detection systems, alarms and automatic emergency shutoff valves required by Section 6004.2.2.10 for highly toxic and toxic gases.
  2. Limit control systems for liquid level, temperature and pressure required by Sections 5003.2.7, 5004.8 and 5005.1.4.
  3. Emergency alarm systems and supervision required by Sections 5004.9 and 5005.4.4.
  4. Monitoring and supervisory systems required by Sections 5004.10 and 5005.1.6.
  5. Manually activated shutdown controls required by Section 6403.1.1.1 for compressed gas systems conveying pyrophoric gases.
- The equipment, devices and systems listed above shall be tested at the time of installation and at one of the intervals listed in WSFC 5003.2.9.2. Records of the tests conducted or maintenance performed shall be maintained in accordance with the provisions of WSFC 109.3.

Exceptions:

1. Periodic testing shall not be required where approved written documentation is provided stating that testing will damage the equipment, device or system and the equipment, device or system is maintained as specified by the manufacturer.
2. Periodic testing shall not be required for equipment, devices and systems that fail in a fail-safe manner.
3. Periodic testing shall not be required for equipment, devices and systems that self-diagnose and report trouble. Records of the self-diagnosis and trouble reporting shall be made available to the fire code official.
4. Periodic testing shall not be required if system activation occurs during the required test cycle for the components activated during the test cycle.
5. Approved maintenance in accordance with Section 5003.2.6 that is performed not less than annually or in accordance with an approved schedule shall be allowed to meet the testing requirements set forth in Sections 5003.2.9.1 and 5003.2.9.2.

**Indoor Control Areas:**

- Control areas shall comply with WSFC Sections 5003.8.3.1 through 5003.8.3.5.3.
- The percentage of maximum allowable quantities of hazardous materials per control area allowed at each story within a building, the maximum number of control areas per floor, and the required fire-resistance rating of fire barriers separating control areas shall be in accordance with WSFC Table 5003.8.3.2.
- The floor assembly of the control area and the construction supporting the floor of the control area shall have a fire-resistance rating of not less than 2 hours (WSFC 5003.8.3.4).

Exception: The floor assembly of the control area and the construction supporting the floor of the control area is allowed to be 1-hour fire-resistance rated in buildings of Types IIA, IIIA, IV and VA construction, provided that both of the following conditions exist:

1. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. The building is three stories or less above grade plane.



### Outdoor Control Areas:

- Outdoor control areas are outdoor areas that contain hazardous materials in amounts not exceeding the maximum allowable quantities of Table 5003.1.1(3) or Table 5003.1.1(4). Outdoor control areas shall comply with the following:
  - Outdoor control areas shall be kept free from weeds, debris, and common combustibles not necessary to the storage. The area surrounding an outdoor control area shall be kept clear of such materials for not less than 15 feet (4572 mm).
  - Outdoor control areas shall be located not closer than 20 feet (6096 mm) from a public street, public alley, public way or lot line that can be built on.
    - Exceptions:
      1. For solid and liquid hazardous materials, a 2-hour fire-resistance-rated wall without openings extending not less than 30 inches above and to the sides of the storage area shall be allowed in lieu of such distance.
      2. For compressed gas hazardous materials, unless otherwise specified, the minimum required distances shall not apply where fire barriers without openings or penetrations having a minimum fire-resistance rating of 2 hours interrupt the line of sight between the storage and the exposure. The configuration of the fire barrier shall be designed to allow natural ventilation to prevent the accumulation of hazardous gas concentrations.
  - Where a property exceeds 10,000 square feet (929 m<sup>2</sup>), a group of two outdoor control areas is allowed where approved and where each control area is separated by a minimum distance of 50 feet.
  - Where a property exceeds 35,000 square feet (3252 m<sup>2</sup>), additional groups of outdoor control areas are allowed where approved and where each group is separated by a minimum distance of 300 feet.
- Outdoor storage areas exceeding the maximum allowable quantities of Table 5003.1.1(3) or Table 5003.1.1(4) shall comply with WSFC 5004 and WSFC 5005, which includes but is not limited to the following:
  - The storage of liquid or solid hazardous materials shall be provided with spill control and secondary containment in accordance with Sections 5004.2.1 through 5004.2.3.
    - Exception: Outdoor storage of containers on approved containment pallets in accordance with Section 5004.2.3.
- Where weather protection is provided for outdoor storage or use areas, it must meet the requirements of the Washington State International Building Code (WSBC) 414.6.1.
  - Walls shall not obstruct more than one side of the structure.
    - Exception: Walls shall be permitted to obstruct portions of multiple sides of the structure, provided that the obstructed area is not greater than 25 percent of the structure's perimeter.
  - The distance from the structure to buildings, lot lines, public ways or means of egress to a public way shall be not less than the distance required for an outside hazardous material storage or use area without weather protection.
  - The overhead structure shall be of approved noncombustible construction with a maximum area of 1,500 square feet.
    - Exception: The maximum area is permitted to be increased as provided by Section 506.
- Where outdoor storage areas exceed the maximum allowable quantity per control area set for in WSFC Section 5003.1, the area surrounding the outdoor storage area or tank shall be kept clear of combustible materials and vegetation for a minimum distance of 25 feet (WSFC 2004.11).

### General Storage Requirements:

- Storage of hazardous materials in amounts exceeding the maximum allowable quantity per control area as set forth in WSFC Section 5003.1 shall be in accordance with Sections 5001, 5003 and 5004 (WSFC 5004.1).
- Storage of hazardous materials in amounts not exceeding the maximum allowable quantity per control area as set forth in WSFC Section 5003.1 shall be in accordance with Sections 5001 and 5003 (WSFC 5004.1).

- Retail and wholesale storage and display of nonflammable solid and nonflammable and noncombustible liquid hazardous materials in Group M occupancies and Group S storage shall be in accordance with WSFC Section 5003.11 (WSFC 5004.1).

**Storage of Hazardous Materials in Amounts Exceeding the MAQ per Control Area:**

- Indoor storage areas and storage buildings shall be equipped throughout with an approved automatic sprinkler system in accordance with WSFC Section 903.3.1.1. The design of the sprinkler system shall be not less than that required for Ordinary Hazard Group 2 with a minimum design area of 3,000 square feet. Where the materials or storage arrangement are required by other regulations to be provided with a higher level of sprinkler system protection, the higher level of sprinkler system protection shall be provided (WSFC 5004.5).
- Indoor storage rooms, areas and buildings shall be provided with explosion control in accordance with Section 911 (WSFC 5004.6). Explosion control shall be provided in the following locations:
  1. Where a structure, room or space is occupied for purposes involving explosion hazards as identified in WSFC Table 911.1.
  2. Where quantities of hazardous materials specified in WSFC Table 911.1 exceed the maximum allowable quantities in WSFC Table 5003.1.1(1).
- Indoor storage areas and storage buildings shall be provided with mechanical exhaust ventilation or natural ventilation where natural ventilation can be shown to be acceptable for the materials as stored (WSFC 5004.3).

Exceptions: Storage areas for flammable solids complying with WSFC Chapter 59 and storage areas for medical gases complying with WSFC Chapter 53.

- Exhaust ventilation systems shall comply with all of the following:
  1. Installation shall be in accordance with the International Mechanical Code.
  2. Mechanical ventilation shall be at a rate of not less than 1 cubic foot per minute per square foot [ $0.00508 \text{ m}^3/(\text{s} \times \text{m}^2)$ ] of floor area over the storage area.
  3. Systems shall operate continuously unless alternative designs are approved.
  4. A manual shutoff control shall be provided outside of the room in a position adjacent to the access door to the room or in an approved location. The switch shall be a break-glass or other approved type and shall be labeled: "VENTILATION SYSTEM EMERGENCY SHUTOFF."
  5. Exhaust ventilation shall be designed to consider the density of the potential fumes or vapors released. For fumes or vapors that are heavier than air, exhaust shall be taken from a point within 12 inches of the floor. For fumes or vapors that are lighter than air, exhaust shall be taken from a point within 12 inches of the highest point of the room.
  6. The location of both the exhaust and inlet air openings shall be designed to provide air movement across all portions of the floor or room to prevent the accumulation of vapors.
  7. Exhaust air shall not be recirculated to occupied areas if the materials stored are capable of emitting hazardous vapors and contaminants have not been removed. Air contaminated with explosive or flammable vapors, fumes or dusts; flammable, highly toxic or toxic gases; or radioactive materials shall not be recirculated.
- Where mechanical ventilation, treatment systems, temperature control, alarm, detection or other electrically operated systems are required, such systems shall be provided with an emergency or standby power in accordance with WSFC 1203. For storage areas for highly toxic or toxic materials, see WSFC 6004.2.2.8 and 6004.3.4.2.

Exceptions: Standby or emergency power is not required for mechanical ventilation systems for any of the following:

1. Storage of Class IB and IC flammable liquids and Class II and III combustible liquids in closed containers not exceeding a capacity of 6.5 gallons (25 L).
2. Storage of Class 1 and 2 oxidizers.
3. Storage of Class II, III, IV and V organic peroxides.
4. Storage of asphyxiant, irritant and radioactive gases.

- Limit controls (temperature control and pressure control) shall be provided in accordance with WSFC 5004.8.1 and 5004.8.2.
- Emergency alarm, detection and automatic fire-extinguishing systems required by Section 5004 shall be electrically supervised and monitored by an approved supervising station or, where approved, shall initiate an audible and visual signal at a constantly attended on-site location (WSFC 5004.10).

**Spill Control and Secondary Containment:**

- Rooms, buildings or areas used for the storage of liquid or solid hazardous materials in amounts exceeding the MAQ shall be provided with spill control or secondary containment in accordance with Sections 5004.2.1 through 5004.2.3 (WSFC 5004.2).  
Exception: Outdoor storage of containers on approved containment pallets in accordance with WSFC 5004.2.3. Where containment pallets are used as an alternative to spill control and secondary containment for outdoor storage they shall comply with all of the following:
  - A liquid-tight sump with access for visual inspection shall be provided.
  - The sump shall be designed to contain not less than 66 gallons (250 L).
  - Exposed surfaces shall be compatible with material stored.
  - Containment pallets shall be protected to prevent collection of rainwater within the sump.
- Spill Control:** Rooms, buildings or areas used for the storage of hazardous material liquids in individual vessels having a capacity of more than 55 gallons, or in which the aggregate capacity of multiple vessels exceeds 1,000 gallons, shall be provided with spill control to prevent the flow of liquids to adjoining areas.
  - Floors in indoor locations and similar surfaces in outdoor locations shall be constructed to contain a spill from the largest single vessel by one of the following methods:
    1. Liquid-tight sloped or recessed floors in indoor locations or similar areas in outdoor locations.
    2. Liquid-tight floors in indoor locations or similar areas in outdoor locations provided with liquid-tight raised or recessed sills or dikes.
    3. Sumps and collection systems.
    4. Other approved engineered systems.
- Secondary Containment:** Where secondary containment is required by WSFC Table 5004.2.2, buildings, rooms or areas used for the storage of hazardous materials liquids or solids shall be provided with secondary containment in accordance with WSFC 5004.2.2 where the capacity of an individual vessel or the aggregate capacity of multiple vessels exceeds the following:  
Liquids: Capacity of an individual vessel exceeds 55 gallons, or the aggregate capacity of multiple vessels exceeds 1,000 gallons.  
Solids: Capacity of an individual vessel exceeds 550 pounds, or the aggregate capacity of multiple vessels exceeds 10,000 pounds.
  - Where secondary containment is required based on WSFC Section 5004.2.2 and WSFC Table 5004.2.2, the building, room or area shall contain or drain the hazardous materials and fire protection water through the use of one of the following methods:
    1. Liquid-tight sloped or recessed floors in indoor locations or similar areas in outdoor locations.
    2. Liquid-tight floors in indoor locations or similar areas in outdoor locations provided with liquid-tight raised or recessed sills or dikes.
    3. Sumps and collection systems.
    4. Drainage systems leading to an approved location.
    5. Other approved engineered systems.
  - Incompatible materials used in open systems shall be separated from each other in the secondary containment system (WSFC 5004.2.2.2).

- Secondary containment for indoor storage areas shall be designed to contain a spill from the largest vessel plus the design flow volume of fire protection water calculated to discharge from the fire-extinguishing system over the minimum required system design area or area of the room or area in which the storage is located, whichever is smaller. The containment capacity shall be designed to contain the flow for a period of 20 minutes (WSFC 5004.2.2.3).
- Secondary containment for outdoor storage areas shall be designed to contain a spill from the largest individual vessel. If the area is open to rainfall, secondary containment shall be designed to include the volume of a 24-hour rainfall as determined by a 25-year storm and provisions shall be made to drain accumulations of groundwater and rainwater (WSFC 5004.2.2.4).
- An approved monitoring method shall be provided to detect hazardous materials in the secondary containment system. The monitoring method is allowed to be visual inspection of the primary or secondary containment, or other approved means. Where secondary containment is subject to the intrusion of water, a monitoring method for detecting water shall be provided. Where monitoring devices are provided, they shall be connected to approved visual or audible alarms (WSFC 5004.2.2.5).
- Drainage systems shall be in accordance with the International Plumbing Code and all of the following:
  1. The slope of floors to drains in indoor locations, or similar areas in outdoor locations shall be not less than 1 percent.
  2. Drains from indoor storage areas shall be sized to carry the volume of the fire protection water as determined by the design density discharged from the automatic fire-extinguishing system over the minimum required system design area or area of the room or area in which the storage is located, whichever is smaller.
  3. Drains from outdoor storage areas shall be sized to carry the volume of the fire flow and the volume of a 24-hour rainfall as determined by a 25-year storm.
  4. Materials of construction for drainage systems shall be compatible with the materials stored.
  5. Incompatible materials used in open systems shall be separated from each other in the drainage system.
  6. Drains shall terminate in an approved location away from buildings, valves, means of egress, fire access roadways, adjoining property and storm drains.

**Additional Requirements for Group H (High Hazard) Occupancies:**

Where hazardous materials are stored in used in excess of the maximum allowable quantities per control area listed in WSFC Chapter 50, comply with the applicable provisions of WSFC and IBC. These provisions include, but are not limited to:

- A manual fire alarm system that activates the occupant notification system in accordance with WSFC 907.5 shall be installed in Group H-5 occupancies and in occupancies used for the manufacture of organic coatings. An automatic smoke detection system shall be installed for highly toxic gases, organic peroxides, and oxidizers in accordance with Chapters 60, 62 and 63, respectively, of the WSFC (WSFC 907.2.5).
- Group H occupancies shall be equipped throughout with an automatic sprinkler system in accordance with WSBC 903.2.5.
- Emergency alarms for the detection and notification of an emergency condition in Group H occupancies shall be provided as set forth in WSBC 415.5.
  - An approved manual emergency alarm system shall be provided in buildings, rooms, or areas used for storage of hazardous materials. Emergency alarm-initiating devices shall be installed outside of each interior exit or exit access door of storage buildings, rooms or areas. Activation of an emergency alarm-initiating device shall sound a local alarm to alert occupants of an emergency situation involving hazardous materials (WSBC 415.5.1).
  - Where hazardous materials having a hazard ranking of 3 or 4 in accordance with NFPA 704 are transported through corridors, interior exit stairways or ramps, or exit passageways, there shall be an emergency telephone system, a local manual alarm station or an approved alarm-initiating device at not more than 150-foot (45 720 mm) intervals and at each

exit and exit access doorway throughout the transport route. The signal shall be relayed to an approved central, proprietary or remote station service or constantly attended on-site location and shall initiate a local audible alarm (WSBC 415.5.2).

- Emergency alarm systems required by Section 415.5.1 or 415.5.2 shall be electrically supervised and monitored by an approved central, proprietary or remote station service or shall initiate an audible and visual signal at a constantly attended on-site location (WSBC 415.5.3).
- Emergency alarm systems required by Section 415.5.1 or 415.5.2 shall be provided with emergency or standby power in accordance with Section 2702.2 (WSBC 415.5.4).
- Group H occupancies shall be located on property in accordance with the provisions WSBC 415. In Groups H-2 and H-3, not less than 25 percent of the perimeter wall of the occupancy shall be an exterior wall (WSBC 415.6).

Exceptions:

1. Liquid use, dispensing and mixing rooms having a floor area of not more than 500 square feet need not be located on the outer perimeter of the building where they are in accordance with the WSFC and NFPA 30.
  2. Liquid storage rooms having a floor area of not more than 1,000 square feet need not be located on the outer perimeter where they are in accordance with the WSFC and NFPA 30.
  3. Spray paint booths that comply with the WSFC need not be located on the outer perimeter. Note that spraying and dipping requires a separate permit, see *Spraying and Dipping* permit application for more information.
- Regardless of any other provisions, buildings containing Group H occupancies shall be set back to the minimum fire separation distance as set forth in WSBC Sections 415.6.1.1 through 415.6.1.4. Distances shall be measured from the walls enclosing the occupancy to lot lines, including those on a public way. Distances to assumed lot lines established for the purpose of determining exterior wall and opening protection are not to be used to establish the minimum fire separation distance for buildings on sites where explosives are manufactured or used where separation is provided in accordance with the quantity distance tables specified for explosive materials in the WSFC (WSBC 415.6.1).
    - Group H-1 occupancies shall be set back not less than 75 feet and not less than required by the International Fire Code.  
Exception: Fireworks manufacturing buildings separated in accordance with NFPA 1124.
    - Group H-2 occupancies shall be set back not less than 30 feet where the area of the occupancy is greater than 1,000 square feet and it is not required to be located in a detached building.
    - Group H-2 and H-3 occupancies shall be set back not less than 50 feet where a detached building is required (see WSBC Table 415.6.2).
    - Group H-2 and H-3 occupancies containing materials with explosive characteristics shall be separated as required by the International Fire Code. Where separations are not specified, the distances required shall be determined by a technical report issued in accordance with WSBC 414.1.3.
    - A detached building is required for Group H-1, H-2, and H-3 occupancies where the quantity of material exceeds that listed in WSBC Table 415.6.2 (WSBC 415.6.2). Where a detached building is required by Table 415.6.2, wall and opening protection based on fire separation distance is not required (WSBC 15.6.2.1).
  - Group H-1 occupancies shall be in detached buildings not used for other purposes. Roofs shall be of lightweight construction with suitable thermal insulation to prevent sensitive material from reaching its decomposition temperature (WSBC 415.7).
    - Floors in storage areas for organic peroxides, pyrophoric materials and unstable (reactive) materials shall be of liquid-tight, noncombustible construction (WSBC 415.7.1).
  - Group H-2 and H-3 occupancies containing quantities of hazardous materials in excess of those set forth in WSBC Table 415.6.2 shall be in detached buildings used for manufacturing, processing, dispensing, use or storage of hazardous materials. Materials listed for Group H-1 occupancies in Section 307.3 are permitted to be located within Group H-2 or H-3 detached buildings

provided that the amount of materials per control area do not exceed the maximum allowed quantity specified in WSBC Table 307.1(1).

- Group H-2 or H-3 occupancies containing materials that are in themselves both physical and health hazards in quantities exceeding the maximum allowable quantities per control area in Table 307.1(2) shall comply with requirements for Group H-2, H-3 or H-4 occupancies as applicable (WSBC Section 415.8.1).
- Piping for conveying liquids shall not be over or through areas containing water reactives, unless isolated by approved liquid-tight construction (WSBC Section 415.8.3).  
*Exception:* Fire protection piping shall be permitted over or through areas containing water reactives without isolating it with liquid-tight construction.
- Floors in storage areas for organic peroxides, oxidizers, pyrophoric materials, unstable (reactive) materials and water-reactive solids and liquids shall be of liquid-tight, noncombustible construction (WSBC Section 415.8.4).
- Rooms or areas used for the storage of water-reactive solids and liquids shall be constructed in a manner that resists the penetration of water through the use of waterproof materials. Piping carrying water for other than approved automatic sprinkler systems shall not be within such rooms or areas (WSBC Section 415.8.5).
- The storage, handling, processing, and transporting of flammable and combustible liquids in Group H-2 and H-3 occupancies shall be in accordance with WSBC Sections 415.9.1.1 through 415.9.1.9, the International Mechanical Code and the WSFC (Section 415.9.1).
  - Where the storage tank area is located in a building of two or more occupancies and the quantity of liquid exceeds the maximum allowable quantity for one control area, the use shall be completely separated from adjacent occupancies in accordance with the requirements of Section 508.4 (Section 415.9.1.1).  
*Exception:* Where storage tanks are located within a building not more than one story above grade plane, the height limitation of Section 504 shall not apply for Group H. (WSBC 415.9.1.1.1).
  - Storage tanks shall be noncombustible and protected from physical damage. Fire barriers or horizontal assemblies or both around the storage tanks shall be permitted as the method of protection from physical damage (WSBC 415.9.1.2).
  - A liquid-tight containment area compatible with the stored liquid shall be provided. The method of spill control, drainage control and secondary containment shall be in accordance with the WSFC (WSBC 415.9.1.4).
  - Exception: Rooms where only double-wall storage tanks conforming to Section 415.9.1.3 are used to store Class I, II and IIIA flammable and combustible liquids shall not be required to have a leakage containment area.
  - An approved automatic alarm shall be provided to indicate a leak in a storage tank and room. The alarm shall sound an audible signal, 15 dBA above the ambient sound level, at every point of entry into the room in which the leaking storage tank is located. An approved sign shall be posted on every entry door to the tank storage room indicating the potential hazard of the interior room environment, or the sign shall state: WARNING, WHEN ALARM SOUNDS, THE ENVIRONMENT WITHIN THE ROOM MAY BE HAZARDOUS. The leakage alarm shall be supervised in accordance with Chapter 9 to transmit a trouble signal (WSBC 415.9.1.5).
  - Storage tank vents for Class I, II or IIIA liquids shall terminate to the outdoor air in accordance with the WSFC (WSBC 415.9.1.6).
  - Storage tank areas storing Class I, II or IIIA liquids shall be provided with mechanical ventilation. The mechanical ventilation system shall be in accordance with the International Mechanical Code and the WSFC (WSBC 415.9.1.7).
  - Where Class I liquids are being stored, explosion venting shall be provided in accordance with the WSFC (WSBC 415.9.1.8).
  - Tank openings other than vents from tanks inside buildings shall be designed to ensure that liquids or vapor concentrations are not released inside the building (WSBC 415.9.1.9).
- Groups H-3 and H-4 shall be constructed in accordance with the following provisions of the IBC:

- Where gas rooms are provided, such rooms shall be separated from other areas by not less than 1-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both (WSBC 415.10.2).
- Floors in storage areas for corrosive liquids and highly toxic or toxic materials shall be of liquid-tight, noncombustible construction (WSBC 415.10.3).
- Highly toxic solids and liquids not stored in approved hazardous materials storage cabinets shall be isolated from other hazardous materials storage by not less than 1-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both (WSBC 415.10.4).
- For information on Group H-5 occupancies, see the *Hazardous Production Materials* permit application.

**Use, Dispensing, and Handling:**

- Use, dispensing and handling of hazardous materials in any amount shall be in accordance with Sections 5001 and 5003. Use, dispensing and handling of hazardous materials in amounts exceeding the maximum allowable quantity per control area set forth in WSFC Section 5003.1 shall also meet the requirements of Section 5005.

## Additional Requirements

The following section outlines additional requirements that must be met based on the type of materials stored, used, or handled. Leave non-applicable sections blank.

**Aerosols:**

- Comply with WSFC Chapter 51 and NFPA 30B.
- Complete *Aerosol Products* permit application where manufacturing, storing or handling an aggregate quantity of Level 2 or Level 3 aerosol products, aerosol cooking spray products, or plastic aerosol 3 products more than 500 pounds net weight.

**Compressed Gases:**

- Comply with WSFC Chapter 53 and NFPA 55.
- Complete a *Compressed Gases* permit application where the total amount of compressed gases is in excess of the amounts listed in WSFC Table 105.5.9.
- Compressed hydrogen (CH<sub>2</sub>) shall also comply with the applicable portions of WSFC Chapters 23 and 58, the *International Fuel Gas Code*, and NFPA 2.
- For cutting and welding gases, complete a *Cutting and Welding* permit application and comply with WSFC Chapter 35.

**Corrosive Materials:**

- Comply with WSFC Chapter 54.

**Cryogenic Fluids:**

- Comply with WSFC Chapter 56 and NFPA 55.
- Cryogenic fluids classified as hazardous materials in accordance with the WSFC shall also comply with the applicable requirements of WSFC Chapter 50.
- Oxidizing cryogenic fluids, including oxygen, shall comply with Chapter 63, as applicable.
- Flammable cryogenic fluids, including hydrogen, methane and carbon monoxide, shall comply with Chapters 23 and 58, as applicable.
- Inert cryogenic fluids, including argon, helium and nitrogen, shall comply with ANSI/CGA P-18.



**Explosives and Fireworks:**

- Comply with WSFC Chapter 56.
- Complete an *Explosives and/or Fireworks and Pyrotechnics Special Effects* permit application as applicable.

**Flammable and Combustible Liquids:**

- Comply with WSFC Chapter 57.
- Complete *Flammable and Combustible Liquids* permit application for more information.

**Flammable Gases and Flammable Cryogenic Fluids:**

- Comply with WSFC Chapter 58, NFPA 2 and NFPA 55.
- Compressed gases shall also comply with Chapter 53 and cryogenic fluids shall also comply with Chapter 55. Flammable cryogenic fluids shall comply with Section 5806.
- Hydrogen motor fuel-dispensing stations and repair garages and their associated above-ground hydrogen storage systems shall also be designed, constructed and maintained in accordance with Chapter 23.

**Flammable Solids:**

- Comply with WSFC Chapter 59.

**Highly Toxic and Toxic Materials:**

- Comply with WSFC Chapter 60
- Compressed gases shall also comply with Chapter 53.

**Liquefied Petroleum Gases:**

- The construction and installation of liquefied petroleum gas facilities shall be in accordance with the requirements of the IBC, the IFC, the International Mechanical Code, the International Fuel Gas Code and NFPA 58.
- See *LP Gases* permit application for more information.

**Organic Peroxides:**

- Comply with WSFC Chapter 62.
- Unclassified detonable organic peroxides that are capable of detonation in their normal shipping containers under conditions of fire exposure shall be stored in accordance with WSFC Chapter 56.

**Oxidizers, Oxidizing Gases, and Oxidizing Cryogenic Fluids:**

- Comply with WSFC Chapter 63.
- Oxidizing gases shall also comply with WSFC Chapter 53.
- Oxidizing cryogenic fluids shall also comply with WSFC Chapter 55.

**Pyrophoric Materials:**

- Comply with WSFC Chapter 64.

**Pyroxylin (Cellulose Nitrate) Plastics:**

- Comply with WSFC Chapter 65.

- The use Cellulose Nitrate Film shall comply with the requirements of WSFC 306 and requires a separate permit application. See *Cellulose Nitrate Film* permit application for more information.

**Unstable (Reactive) Materials:**

- Comply with WSFC Chapter 66.

**Water-Reactive Solids and Liquids:**

- Comply with WSFC Chapter 67.

NOTE: *This is not intended to be an all-inclusive list. The WSFC requirements listed are intended to ensure that we have adequate information to begin a review of the application. Additional information may be required.*

**I understand that all applicable codes apply and that other regulatory codes may also apply. Errors and/or omissions on the plans and corrections from field inspections are the responsibility of the owner/contractor. All work is subject to compliance with City of Vancouver ordinances and laws of the State of Washington.**

APPLICANT NAME: \_\_\_\_\_ APPLICATION DATE: \_\_\_\_\_

APPLICANT SIGNATURE: \_\_\_\_\_