

Electronic Plan Standards

File Naming Standards:

Electronic plans and documents shall be named as specified in the City of Vancouver [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.

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.

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 Operational Permit Application – Magnesium (this document) Check all *Permit Conditions* checkboxes that are applicable to your project
- 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 for direction on completing required HMMP and/or supplemental forms

Does your business...	If YES, please complete these pages of the HMMP (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, at or above the permit thresholds set forth in WSFC Table 105.5.22?	<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"/> Hazardous Materials Permit Application
Conduct operations that produce combustible dust?	<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"/> Combustible Dust Permit Application

In addition to any required HMMP documents, provide the following documents with your permit application:

- Listing documents for proposed equipment

Plan Details

The following is a list of information required on all plan submittals for review of a magnesium permit. The plan shall be drawn to 1/8"= 1'-0" minimum scale. The applicant is required to submit all applicable information so an accurate and timely review may be completed:

General:

- Site plan to include a north arrow, a measurable scale for calibration purposes, fire hydrants, emergency access lanes and doors, vehicle gates, fire department connection, facility evacuation meeting point locations, sprinkler riser, fire alarm control panel, Knox Box, outdoor hazardous materials storage areas, and roof access (if provided).
- Life safety plans to include building layout, exit routes, travel distance measurements, occupant load calculations, egress capacity, portable fire extinguisher locations, refuge areas, and fire-resistance-rated construction.
- Fire alarm and fire sprinkler plans (where provided)

Magnesium Storage and Operations:

- Size and location of magnesium storage piles or containers, height of containers, size of aisles, etc. (see *Permit Conditions* for specific requirements)
- Ventilation and storage of scraps (i.e. hoods, tubes, enclosures, dust separating units, etc.) for magnesium operations
- Location of extinguishing materials including types and sizes (either a fire extinguisher per WSFC 906 or other extinguishing materials)
- Location of magnesium processing machines

Permit Conditions

The following is a list of WSFC requirements related to magnesium operations. Use this form to confirm that all applicable requirements are met. Non-applicable requirements can be left blank.

Storage:

- Magnesium storage in quantities greater than 50 cubic feet shall be separated from storage of other materials that are either combustible or in combustible containers by aisles. Piles shall be separated by aisles with a minimum width of not less than the pile height (WSFC 5906.2.1).
- Magnesium storage in quantities greater than 1,000 cubic feet shall be separated into piles not larger than 1,000 cubic feet each. Piles shall be separated by aisles with a minimum width of not less than the pile height. Such storage shall not be located in non-sprinklered buildings of Type III, IV or V construction, as defined in the International Building Code (WSFC 5906.2.2).
- Where in non-sprinklered buildings of Type III, IV or V construction, magnesium shall not be stored in combustible containers or within 30 feet of other combustibles (WSFC 5906.2.3).
- The size of storage piles of magnesium articles in foundries and processing plants shall not exceed 1,250 cubic feet. Piles shall be separated by aisles with a minimum width of not less than one-half the pile height (WSFC 5906.2.4).
- Storage of magnesium pigs, ingots, and billets shall comply with the following (WSFC 5906.3):
 1. Indoor storage of pigs, ingots and billets shall only be on floors of noncombustible construction. Piles shall not be larger than 500,000 pounds each. Piles shall be separated by aisles with a minimum width of not less than one-half the pile height.
 2. Outdoor storage of magnesium pigs, ingots and billets shall be in piles not exceeding 1,000,000 pounds each. Piles shall be separated by aisles with a minimum width of not less than one-half the pile height. Piles shall be separated from combustible materials or buildings on the same or adjoining property by a distance of not less than the height of the nearest pile.
- Storage of scrap magnesium shall comply with the following (WSFC 5906.4):
 1. Magnesium fines shall be kept separate from other combustible materials.

2. Storage of fine magnesium scrap in quantities greater than 50 cubic feet [six 55-gallon steel drums] shall be separated from other occupancies by an open space of not less than 50 feet or by a fire barrier constructed in accordance with Section 707 of the International Building Code.
3. Storage of fine magnesium scrap in quantities greater than 1,000 cubic feet shall be separated from all buildings other than those used for magnesium scrap recovery operations by a distance of not less than 100 feet.

Operations:

- Floors under and around melting pots shall be of noncombustible construction (WSFC 5609.5.1).
- Approved means shall be provided for control of magnesium fires in heat-treating ovens (WSFC 5906.5.2)
- Magnesium grinding, buffing and wire-brushing operations, other than rough finishing of castings, shall be provided with approved hoods or enclosures for dust collection that are connected to a liquid-precipitation type of separator that converts dust to sludge without contact (in a dry state) with any high-speed moving parts (WSFC 5906.5.3).
 - Connecting ducts or suction tubes shall be completely grounded, as short as possible, and without bends. Ducts shall be fabricated and assembled with a smooth interior, with internal lap joints pointing in the direction of airflow and without unused capped side outlets, pockets or other dead-end spaces that allow an accumulation of dust.
 - Each machine shall be equipped with an individual dust-separating unit.

Exceptions:

1. One separator is allowed to serve two dust-producing units on multiunit machines.
 2. One separator is allowed to serve not more than four portable dust-producing units in a single enclosure or stand.
- Power supply to machines shall be interlocked with exhaust airflow, and liquid pressure level or flow. The interlock shall be designed to shut down the machine it serves when the dust removal or separator system is not operating properly (WSFC 5906.5.4).
 - Electric wiring, fixtures, and equipment in the immediate vicinity of and attached to dust-producing machines, including those used in connection with separator equipment, shall be of approved types and shall be approved for use in Class II, Division 1 hazardous locations in accordance with NFPA 70 (WSFC 5906.5.5).
 - Equipment shall be securely grounded by permanent ground wires in accordance with NFPA 70 (WSFC 5906.5.6).
 - Fire-extinguishing materials shall be provided for every operator performing machining, grinding or other processing operation on magnesium in accordance with either of the following (WSFC 5906.5.7):
 1. Within 30 feet, a supply of extinguishing materials in an approved container with a hand scoop or shovel for applying the material.
 2. Within 75 feet, a portable fire extinguisher complying with Section 906.
 - All extinguishing materials shall be approved for use on magnesium fires. Where extinguishing materials are stored in cabinets or other enclosed areas, the enclosures shall be openable without the use of a key or special knowledge.
 - Chips, turnings and other fine magnesium scrap shall be collected from the pans or spaces under machines and from other places where they collect not less than once each working day. Such material shall be placed in a covered, vented steel container and removed to an approved location (WSFC 5906.5.8).

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: _____