



# Commercial Mechanical Permit Application Instructions and Checklist

## Submittal Requirements:

- Site plan, indicating location of work in building
- Construction plans
- Mechanical Requirements List (MECH-CHK) and Mechanical Summary (MECH-SUM). You may obtain mechanical checklist and summary forms at <http://waenergycodes.com>
- Structural calculations for gravity and lateral design for project if units and accessory equipment weigh over 400 pounds and are supported by the roof or ceiling.
- Cost of alterations to the building required to install mechanical equipment, unless alterations are covered by a separate permit.
- Equipment schedules for heating and cooling equipment and sizing 403.1.2.
- Provide Manufacturer's Equipment Data and Installation instructions.

## Minimum Requirements for Construction Drawings

Plans shall be designed using the 2021 editions of the International Building Code (IBC); International Mechanical Code (IMC); International Fuel Gas Code (IFGC); the Uniform Plumbing Code (UPC); and the Washington State Energy Code (WSEC) as adopted and amended by the State of Washington and the City of Kent. Plans and general notes, soils reports, and engineering calculations based on other codes will not be accepted.

Plans shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed and show that it will conform to the provisions of the adopted Codes and ordinances.

PDF Files must be unlocked or unprotected, so city staff can make comments, reduced, flattened and full-size, one-to-one format (layers must be merged or flattened).

For Walk in Cooler/Freezers exterior to the building : separate building permits are required for each structure, per IBC 105.1. One combination building/mechanical permit can be issued for the construction of a walk-in cooler/freezer and all its related mechanical equipment. All applications for cooler and/or freezers must include the following information that is necessary to verify compliance with the IBC, ASCE 7, Washington State Energy Code (C410) and the IMC.

Furnace room with 400,000 btu equipment must be in a 1 hr room or automatic sprinkler needs to be installed. IBC table 509.1.

Washington State law requires that any registered professional who prepares or supervises the preparation of drawings and construction documents stamp and sign such documents. Where multiple copies of stamped submittal documents are submitted, at least one set must bear an original wet seal.

## Site Plan

- 1. Scale and north arrow. Max. scale 1"= 40' (Preferred scale is 1"= 20' or 1" = 40')
- 2. Dimensions of lot, distance to property lines, location(s) and square footage of existing or proposed structures, street name, location and use.
- 3. Condensing units located on building exterior must be shown on site plan.

## Floor Plan

(scale: 1/4" = 1' or 1/8" = 1')

- 1. Indicate location of all exits. Required exit doors must be not less than 3' in width and not less than 6 feet 8 inches in height. Provide existing details showing compliance with IBC Sec. 1014, 1015, and 1016 and Chapter 11.
- 2. Show location and specify dimensions of proposed walk-in cooler or freezer.

## Equipment Schedules

- 1. Provide complete equipment schedules for cooling and heating equipment on drawings. Specify the quantity, manufacturer, model number, capacities (input and output), SEER/EER, HSPF/HSPF2, efficiency, CFM and operating weight of all equipment. Specify OSA capacities. Include economizers on equipment schedules.
- 2. Fan schedule should specify manufacturer, model number, CFM, static pressure, HP/BHP, and flow control types (VAV, constant volume, or variable speed).
- 3. A brief description of equipment operations and controls, show location and size of combustion air sources for fuel burning appliances.
- 4. Type and amount of refrigerant in each system.

## Structural

- 1. Provide a structural analysis, including framing plans and calculations if applicable, prepared, stamped and signed by a professional engineer licensed by the State of Washington addressing gravity and lateral loads. Provide details for structural upgrades, alterations, supports, bracing, etc. Fasteners must be fully specified (type, size location, spacing). Note: structural analysis may not be required for total equipment weight of less than 400 pounds (total of unit, curb, supports, economizer, boots, attachment details still required when directly supported on framing members larger than 2x4 etc.).
- 2. Roof curb designs must be provided for all roof mounted mechanical equipment. If factory curbs will be used, provide details. Specify the type, amount, and location of fasteners. R-13 - (102.7.1.4)
- 3. All floor supported mechanical equipment and fixed appliances shall be anchored to the structure to resist displacement vertically and on both horizontal axis due to seismic motion. Specify anchorage for floor supported equipment on plans.

- 4. Suspended mechanical equipment and appliances shall have rigid vertical hangers and be braced in both horizontal directions. Connections by pipes or ducts that are or contain non-rigid elements, are not of inherent sufficient strength, or which are not adequately anchored will not be acceptable as equipment or appliance anchors. Detail anchorage for suspended equipment on drawings.
- 5. All floor supported mechanical equipment and fixed appliances shall be anchored to the structure to resist displacement vertically and on both horizontal axis due to seismic motion. Specify anchorage for floor supported equipment on the plans.

## Make-Up Air

- 1. Ventilation air supply shall be sufficient to provide make-up air for exhaust systems when required by the IMC or the IBC. Make-up air systems shall be electrically interlocked with their associated exhaust systems. IMC 501.4
- 2. Ducts in ventilation supply air systems shall be sized per IMC Sec. 603.2 - ASHRAE
- 3. Provide calculations showing compliance with the ventilation requirements of IMC Chapter 4 and IBC Section 1203.

## Ducts IMC Chapter 6

- 1. Show locations of all heating, cooling and ventilating equipment.
- 2. Show duct layouts - include size, duct gage (if metal) and register locations and specify CFM ratings. Show materials, spacing, and size of supports for all ducts as set forth in IMC Sec. 603.10. - SMACWA
- 3. Specify the use and dimensions of all rooms and show the fire-rated corridors, walls, ceilings and/or floors.

## Smoke Detection and Dampers

- 1. Smoke Detection and Dampers shall be shown to comply with recognized standards (Duct Smoke Detectors—UL 268A, Fire Dampers—UL 555, Smoke Dampers—UL 555S, Ceiling Radiation Dampers—555C). (606.1 & 607.3.1)
- 2. Smoke detectors that are listed and labeled shall be installed in air distribution systems

in accordance with the manufacturer's installation instruction. IMC Sec. 606.1. Upon activation, smoke detectors shall shut down all operational capabilities of the air distribution system per IMC Sec. 606.4. Duct smoke detectors shall be connected to a fire alarm system per IMC Sec. 606.4.1.

- 3. Where a detector is located in a duct, it shall be listed for the air velocity, temperature and humidity anticipated where installed. IMC 606.1
- 4. Provide the manufacturer's installation instructions when fire dampers are required by IBC Chapters 7 and 9. Fire dampers shall have been tested for closure under airflow conditions and shall be labeled for both maximum airflow permitted in the direction of flow.
- 5. Ceiling dampers shall be installed in the fire-resistive ceiling elements of floor-ceiling and roof-ceiling assemblies. Fire dampers not meeting the temperature limitation of ceiling dampers shall not be used as substitutes. Only fire dampers labeled for use in dynamic systems shall be installed in HVAC systems which are intended to operate with fans "on" during a fire. IMC 607.3.1 (Ceiling dampers - 607.6.2.1.1)
- 6. Provide details to show that the ductwork will be connected to damper sleeves or assemblies in such a way that collapse of ductwork will not dislodge the damper in accordance with the manufacturer's installation instructions.
- 7. Indicate on plans that fire dampers, smoke dampers and combination fire/smoke dampers will be equipped with access doors, appropriately labeled "FIRE DAMPER," "SMOKE DAMPER" or "FIRE/SMOKE DAMPER" as required by IMC 607.4.

### Foam Plastic Insulation

- 1. The interior of the building shall be separated from foam plastic insulation by an approved thermal barrier that complies with IBC Sec. 2603.6.4.
- 2. Provide manufacturer's name, product listing, product identification and information to show that the proposed structure complies with the flame-spread

and smoke-development limitations of IBC Sec. 2603.

- 3. Show location of compressors, condensers, and other equipment.

### General

- 1. Separate temperature controls shall be provided for each zone and shall be shown on plans. When used to control both heating and cooling, thermostatic controls shall be capable of a deadband of at least 5°F. WSEC C403.4.1.2.
- 2. All mechanical equipment should be listed and labeled by an approved testing agency. If not, complete information on the equipment, including manufacturers' data sheets, test reports, etc., should be provided to allow for evaluation. Testing by an approved testing laboratory may be required before final approval is granted.
- 3. Show required access for roof mounted equipment per IMC Sec. 306.5.
- 4. A 120-volt receptacle shall be shown at or near each piece of equipment. IMC 306.5.2 and NFPA 70 (National Electrical Code).
- 5. Specify that an accessible gas shut-off valve will be installed within 6' of all gas appliances. International Fuel Gas Code Sec 409.5. WESC 401.3 - Fossil Fuel Compliance path, please show exception on plans.
- 6. Type and quantity of all chemicals including but not limited to:
  - Refrigerant
  - Chemicals

Please note: Larger systems may require code analysis detailing compliance with IMC Chapter 11, IFC Sec 606

- 7. Provide information regarding products stored, including packaging, shelving, and sprinkler design information (i.e. density, area of coverage and temperature rating of heads).
- 8. Pre-fabricated walk-in coolers and freezers are components regulated by the International Building Code (IBC) and ASCE 7. Please see IBC Chapter 16 (Structural Forces) and Sec. 1613; and IBC Sec. 2603 (Foam Plastic Insulation).

9. Engineering easement declaration.
- Required for exterior dust collection system only

10. WABO certified special inspector.  
Required for:

- Welding
- Medical Gas Rooms/piping
- Fasteners required to have special inspections per manufacturer's specifications.

Approved inspectors can be found:  
<https://www.wabo.org/special-inspection-agencies>

Special Inspection form (Test Lab Information Form):

<https://www.kentwa.gov/home/showpublisheddocument/20058/638149847950470000>