



# Mechanical Permit Checklist

1. Is any equipment located on the exterior or vented to the exterior of a building (examples: rooftop or wall-mounted equipment, generators, HVAC equipment, exterior louvers, vents or exhaust terminals)?
  - Yes – *Land use review required*  
see Land Use Requirements for Mechanical Permits (attached)
  - No
2. Does the work include installation or modification of a fume hood, lab, chemical storage, paint spray booth, fuel tank or kiln?
  - Yes – *Fire review required*
  - No
3. Does the work include installation of a diesel or propane generator?
  - Yes – *Land Use review and Fire review required*
  - No
4. Does the work include installation of uninterrupted power source (UPS) equipment (examples: battery storage and recharging facility)?
  - Yes – 50 gallons or more of electrolyte – *Fire review required*
  - Yes – less than 50 gallons of electrolyte
  - No
5. Is any equipment over 400 pounds? *See Interpretations & Procedures - Seismic Bracing (attached)*
  - Yes - *Provide structural information.*
    - Equipment is mounted at grade.
    - Equipment is suspended from the structure.
    - New equipment is a replacement unit in the same location, with the weight not exceeding 5% of the original.
  - No
6. Does the work include the installation or modification of a Type I or Type II kitchen hood?
  - Yes – *Submit Type I and Type II Kitchen Hood Submittal Checklist*
  - No
7. Are structural or fire rated improvements needed for the mechanical installation (shafts, walls, exterior screening, rafters, beams, etc.)?
  - Yes - *A separate building permit is required*
  - No

8. Does the work include the installation of a walk-in cooler or walk-in freezer?
- No
  - Yes (check all that apply)
    - Unit is pre-fabricated.
    - Unit is custom built or built-on-site. *(A separate building permit is required)*
    - Unit is to be installed on anything other than a slab-on-grade. *(Structural information may be required)*
    - Unit is to be installed outside the building perimeter. *(A separate building permit is required)*
9. Is this a new building or core & shell with smoke control?
- Yes – *Fire review required*
  - No

NOTE:

For roof-mounted mechanical equipment, provide architectural elevation views to verify that new or existing screening follows the Land Use Code.

Mechanical units are not allowed in side-yard setbacks in residential districts or properties adjacent to residential districts.

Separate permits are required for fire alarm, fire sprinkler, structural building improvements, electrical, smoke control and plumbing if that work is being done as part of your project. Refer to Building Code Requirements for Mechanical Installations (attached) for coordination of structural and mechanical permits.

If a fuel-fired boiler greater than 200 MBH is going to be installed, a separate permit is required from the Washington State Department of Labor and Industries (L & I) Boiler Division. Contact Labor and Industries at Boiler@lni.wa.gov or 360-902-6400.

For questions regarding the checklist, contact the following Development Services staff:

Items 1 & 3 on the checklist	Land Use Review	425-452-4188
Items 5, 7 & 8 on the checklist	Building Review prescreening	425-452-4121
Items 2, 3 & 4 on the Checklist	Fire Review	425-452-4122
Building permit application and other submittal documents	Permit Processing	425-452-4898

## Building Code Requirements for Mechanical Installations

### When is a separate building permit required?

Many mechanical HVAC installations involve the need to make structural improvements to the building or structure where new HVAC equipment will be installed. A separate building permit is typically needed for structural improvements to allow for review and inspection of those improvements. Some examples of typical structural improvements done as part of an HVAC installation include:

- Modifications to an existing roof or elevated floor to carry the weight of new equipment.
- Installation of screening as required by the Land Use ordinance.
- Connection of wall-mounted installations to an existing building.

Building plans and structural calculations are required in most cases to justify existing and/or new construction related to gravity or lateral support of new HVAC equipment. If structural calculations are required by the City of Bellevue, the calculations, details and drawings must be stamped and signed by an engineer licensed in the state of Washington. Review Table A (attached) to determine when lateral engineering is required for your project.

Structural improvements not listed here require a separate building permit. If a separate building permit has already been submitted for review or has been issued, it is not necessary to provide the same information with the mechanical permit application. New HVAC equipment should not be installed on elevated roofs or decks until necessary structural improvements have been completed and approved by the building inspector.

If screening for exterior equipment is required per the Land Use ordinance, provide lateral and gravity calculations for review. For projects requiring installation of shafts, plans and details showing the location and support of vertical and/or horizontal shafts must be provided. In many cases, shafts must be fire resistance-rated; assembly listing numbers and assembly details must be provided for review.

The installation of a walk-in cooler or walk-in freezer that is custom built, built on site or installed outside the building perimeter will require a separate building permit. If the unit is installed on anything other than a slab-on-grade, structural information is required to verify that the floor system is sufficient.

### **When is a separate building permit not required?**

The following items are considered ancillary to the mechanical work, do not require a building permit, and may be reviewed as part of the mechanical permit:

- Seismic connections to prevent overturning of equipment during an earthquake.
- Creating an opening in an existing roof and installation of a curb to support new rooftop equipment.
- Blocking and/or brackets to support ductwork.
- Review of an existing roof or elevated floor assembly for new gravity loads when no structural improvements are needed. This review is necessary to confirm that an existing roof deck, floor framing or platform is adequate to support the new or replacement installation.
- Engineering for gravity is not required for rooftop equipment if the new unit will be in the same location and the weight does not exceed 5 percent more than the original equipment.

## Land Use Requirements for Mechanical Permits

If the equipment to be installed or replaced is located in any of the following locations, please read the following applicable submittal requirements.

### Interior Equipment

For proposal sites located in a Design Review District with ancillary equipment mounted on the building's exterior walls (vents, etc.), the permit submittal requirements shall include building elevation drawings showing all ancillary elements on the exterior walls. The drawings must be to scale. The location/design of these elements shall be architecturally compatible with the building exterior design. The equipment's location and function shall not result in adverse impacts to the pedestrian environment.

### Rooftop Equipment

Visual screening is required for all new/replacement rooftop mechanical equipment. The existing/proposed equipment visual screening must be accurately portrayed in a rooftop drawing. Equipment must be consolidated to the maximum extent reasonable. Section-view drawings are required to show the relationship between the height of the equipment and proposed screening. Screening shall be a solid, nonreflective visual barrier that is architecturally compatible with the building exterior and explained with architectural details. Any rooftop mechanical equipment installation that can be seen from the surrounding properties shall be screened from above and all sides.

### At-Grade Equipment

All at-grade mechanical equipment must be visually screened in a manner that balances security or maintenance objectives and considers the site and building context. Refer to the Noise Control Code for maximum permitted noise level.

### Residential Installations

All at-grade mechanical equipment installations for single family residential properties must be located in the rear yard and no closer than five feet to the site's boundary, or in a side yard and outside the required structure setback. Refer to the Noise Control Code for maximum permitted noise level.



# Seismic Bracing System Components – MEP, Sprinkler, Fire Alarm, Smoke Control

## *Building Division Interpretations and Procedures*

<b>Index Number:</b>	IBC-2017-008
<b>Issue Date:</b>	12/18/19
<b>Code:</b>	2015 IBC & ASCE 7-10
<b>Section:</b>	IBC 1613 & ASCE Ch. 13

1. Structures with  $I_p = 1.0$ : The attached Table A specifies the City of Bellevue-approved seismic bracing requirements. [Importance factor ( $I_p$ ) as defined in ASCE7-10 Section 13.1.3]
2. Structures with  $I_p > 1.0$ : All projects with  $I_p > 1.0$  require an engineered design of seismic bracing systems for all mechanical (M), electrical (E), plumbing (P), sprinkler (S)<sup>j</sup>, fire alarm (FA), and smoke control (SC) system components when the system component has been assigned an  $I$  of 1.5. The component  $I_p$ , shall be taken as 1.5 if any of the following conditions apply.
  - a. The component is required to function for life-safety purposes after an earthquake, including fire protection sprinkler systems.
  - b. The component contains hazardous materials.
  - c. The component is in or attached to an Occupancy Category IV structure and it is needed for continued operation of the facility or where its failure could impair the continued operation of the facility.
3. See WABO/SEAW White Paper 7-2011 for additional guidelines and recommendations.

**Table A**  
**Guidelines for System Component Seismic Bracing where  $I_p = 1.0$**

	Ducts & Piping	Equipment ≤ 75#	75# < Equip ≤ 400#	Equip > 400# <sup>h</sup>
Mechanical Ductwork	SMACNA <sup>i</sup> Details/Spacing	N/A	N/A	N/A
Gas and Hydronic Piping	SMACNA <sup>i</sup> Details/Spacing	N/A	N/A	N/A
M, E, P, equip mounted ≤ 4' above the floor/roof & mounted with flexible connections <sup>a, b, c</sup>	N/A	No Requirement	No Requirement	Engineering for gravity and lateral support <sup>d, e, g</sup> (plan review required)
M, E, P, equip mounted > 4' above the floor/roof <sup>a, c</sup>	N/A	No Requirement	Engineering for gravity and lateral support <sup>d, e, g</sup> (field approve)	Engineering for gravity and lateral support <sup>d, e, g</sup> (plan review required)
M, E, P equip mounted with flexible connections <sup>b, c</sup>	N/A	N/A	N/A	N/A
M, E, P equip mounted from a wall or suspended from structure <sup>f</sup>	N/A	N/A	Engineering for gravity and lateral support (field approve)	Engineering for gravity and lateral support (plan review required)
Plumbing Piping (drain, waste, & vent)	Per UPC	N/A	N/A	N/A

- a. 4' dimension measured from the floor to the mounting point location
- b. Mechanical, electrical and plumbing components with flexible connections installed between the components and associated ductwork, piping, and conduit. Non-Flexible connections will require plan review.
- c. Water tank restraints required per UPC Section 507.2
- d. Engineering for gravity not required when mounted at grade
- e. Engineering for lateral not required when the height/width ratio is ≤ 1.0 (In all horizontal directions)
- f. Engineering shall address the bracing system, the point(s) of attachment and the capacity of the building element or structure supporting the attachment and bracing system.
- g. Rooftop equipment: Change out weight like for like, no engineering required. New units with weight exceeding 5% of original, engineering required for gravity (IEBC Section 402.3)
- h. Water heaters ≤ 60 gallons will fall under this category
- i. SMACNA Restraint Manual "Guidelines for Mechanical Systems": 3rd Ed, 2008, 2015 Uniform Plumbing Code Table 313.3 and 313.6
- j. Seismic bracing for fire protection sprinkler systems in seismic design category D-F designed per NFPA 13 as specified in ASCE 7-10 Section 13.6.8.2

For questions concerning required permits, contact Development Services (425-452-4121) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4).

Signature Gregg Schrader  
 Gregg Schrader, PE, SE, Building Official

Date: 12/18/2019

Attachments **Supersedes:** \_\_\_\_\_