Seattle Department of Construction and Inspections
sdci
Tip 304
Seattle Permits
— part of a multi-departmental City of Seattle series on getting a permit

Building Permit Requirements for Prefabricated Metal Buildings

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The purpose of this Tip is to provide the architect, engineer, building manufacturer, building supplier, contractor, and plans examiner with information and guidance about the special submittal requirements for prefabricated metal buildings, including those having more than one design engineer.

All plans must conform to the requirements of the Seattle Building Code (SBC) for the type of project being submitted. We require that all plan sheets be the same size with lettering that is easy to read (see Tip 106, *General Standards for Plans and Drawings*, for general specifications on plans submittal, available on our Resources web page. All required information must be shown on the design drawings and will not be acceptable if found only in the calculations.

Code references in this Tip refer to the 2018 editions of Seattle construction codes.

Metal buildings are required to be designed by a licensed structural engineer, except that a civil engineer licensed in Washington may design one-story, light-framed metal buildings (SBC 106.5.2, exception 2). When more than one engineer is involved with the design of the building, including its foundation, the foundation designer must be licensed by the state of Washington and will be designated the structural engineer of record.

Submittal Requirements

The following list contains items that must be included on the metal building design drawings (see SBC 106 and Chapter 16 for complete submittal requirements).

1. Seal and signature of the engineer (SBC 106.5.2) on each sheet of plans.
   - The structural engineer of record's stamp "approved for design concept" or similar indication of compliance with SBC Section 106.5.8 must be on each sheet of the design drawings that do not show the seal of the engineer of record.
2. Name and address of steel fabrication plant.
   - Special inspections are required for fabricated structural load-bearing members and assemblies fabricated on the premises of a fabricator's shop unless the fabricator is registered in the Washington Association of Building Officials Steel Fabricator Registration Program (SBC 1704.2.5).
3. Structural notes including but not limited to:
   - All imposed design loads, both dead and live, including equipment loads (See SBC 106.5.6).
   - Seismic design data including:
     - Seismic importance factor
     - S_S and S_1 values
     - Spectral response coefficients S_{DS} and S_{D1}
     - Seismic Design Category
     - Seismic force-resisting system
     - Design base shear
     - Response modification factor used (R)
     - Analysis procedure used (SBC 1603.1.5).
   - Wind design data including:
     - Basic wind speed
     - Wind importance factor
     - Wind exposure
     - Internal pressure coefficient
     - Components and cladding coefficients
     - Analysis procedure used (SBC 1603.1.4)
   - ASTM number, yield stress, and allowable stress of all structural steel members.

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- All loads imposed on the foundation, both vertical and lateral.
- Notation indicating all welding performed by WABO-certified welders and all welds conformed to AISC standards.
- All codes followed (2015 SBC, etc.)

4. Plan documents (SBC 106.5), including but not limited to:
   - Framing plans
   - Cross sections
   - Wall sections
   - Floor and roof details
   - Connections of structural members
   - Types of construction materials

The permit submittal package shall also include complete structural calculations (SBC 106.5.1).

Energy Code Issues for Metal Buildings

Metal building insulation requirements are called out in SEC Tables C402.1.3, C402.1.4, and C402.4.

- Default U-factors for metal building roofs are provided in Appendix Section A102.2.5 and Table A102.2.5.
- Default U-factors for metal building walls are provided in Appendix Section A103.3.6.3 and Table A103.3.6.3, showing varying levels of batt insulation and continuous insulation.
- Use thermal spacer block (R-3.5 minimum) for roofs using the R-value compliance method, otherwise use the U-value method.

This Tip is designed to assist you in preparing for your plan submission and is not intended to be a complete listing of all requirements. Please refer to Tip 106, *General Standards for Plans and Drawings*, for drawing format and content, and meet all of the Seattle construction codes that apply to your project.

Questions?

If you have questions about building permit requirements for metal buildings, please contact SDCI at (206) 684-8600.

Access to Information

Links to electronic versions of SDCI publications are available on our website at **www.seattle.gov/sdci**.