



Building Permit Requirements for Prefabricated Metal Buildings

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

For projects that meet specific criteria identified below the following options are available for submitting drawings for Prefabricated Metal Buildings.

Option One: Standard Submittal Path. Provide a complete project submittal that includes the design of the prefabricated metal building. This submittal shall have all necessary information on the drawings required to obtain a building permit including but not limited to life safety review, fire, mechanical, plumbing, etc. See ***Submittal Requirements specific to Prefabricated Metal Building Drawings*** for specific drawing requirements.

Option Two: Delayed submittal of structural design of Prefabricated Metal Building Only. This option allows for the early submittal of all necessary plans and documents sufficient for review by Fire, Life Safety, Zoning, Environmental Services, Transportation, etc., while delaying the submittal of the structural design of the prefabricated metal building. Submittal requirements include all building elevations and floor plan views as in Option one.

Under this option, the applicant acknowledges that the structural review will not commence until complete structural drawings and calculations of the prefabricated metal building design and required anchorage of the building to the foundation is submitted to BDS for review. Standard review timelines will apply at that time (goal of 20 working days to complete the first review).

Please note that a permit can not be issued until all required reviews, including the structural review, are approved. No partial permits will be issued under this option.

In order to request this option, the following additional requirements must be met at the time of initial submittal:

1. The engineer designing the foundation system will assume the role of engineer of record.
2. Structural drawings in the initial submittal shall be stamped by an engineer registered in Oregon

and shall include a foundation plan design based on either reactions obtained directly from the metal building manufacturer or as determined by the engineer of record based on an appropriate analysis. In addition, the drawings shall show the assumptions made by the engineer of record in designing the foundations, including but not limited to design loads (load to the foundation elements), design criteria, location of all building frames and lateral elements etc.

3. Calculations stamped by an engineer registered in Oregon along with a geotechnical report (where applicable) shall be submitted at the time of initial submittal.

Submittal of the Pre-fabricated Metal Building drawings and calculations:

See section below ***Submittal Requirements specific to Prefabricated Metal Building Drawings*** for drawing requirements.

Prefabricated Metal Building drawings and documents to be submitted shall be reviewed by the engineer of record to confirm the assumptions made when designing the foundations remain consistent. Any corrections or updates required to coordinate the foundation or other drawings provided as part of the initial submittal shall be provided at the time of submittal of the pre fabricated metal building, and the previously submitted drawings and calculations updated as required. The engineer of record shall stamp the drawings and calculations "approved for design concept" or similar.

Option Three: Delayed submittal of foundation and structural design of Prefabricated Metal Building.

This option allows for the early submittal of all necessary plans and documents sufficient for review by Fire, Life Safety, Zoning, Environmental Services, Transportation, etc., while delaying the submittal of the foundation and structural design of the pre fabricated metal building. Submittal requirements include all building elevations and floor plan views as in Option 1.

In addition, a foundation plan that provides adequate information, such as, the location and extent of the footings and slab on grade, required for review by Environmental Services and other review groups excluding structural and site development shall be provided with the initial submittal.

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Under this option, the applicant acknowledges that both, the structural review and site development review will not commence until complete structural drawings and calculations for the foundations and the prefabricated metal building and required anchorage is submitted to BDS for review.

Standard review timelines will apply at that time (goal of 20 working days to complete the first review). Please note that a permit can not be issued until all required reviews, including the structural review and site development reviews, are approved. No partial permits will be issued under this option.

In order to request this option, the engineer designing the foundation system will assume the role of engineer of record.

Submittal of Structural Drawings: The structural and site development reviews will commence once a complete set of structural drawings and calculations stamped by an engineer registered in the state of Oregon is submitted to BDS.

The structural drawings shall include the final design of the foundations and the metal building. The engineer of record shall verify and confirm that the design of the foundations is adequate for the reactions provided by the metal building manufacturer.

The engineer of record shall review and approve the design of the metal building by placing their review stamp "approved for design concept" or equivalent. See section **Submittal Requirements Specific to Prefabricated Metal Building Drawings** below for additional information.

Option Four: Main Permit with Prefabricated Metal building as a Deferred Submittal (DFS). Projects utilizing this option are limited to single story prefabricated metal buildings, less than 35 ft in height, with an exterior skin/ cladding weighing less than 15 pounds per square foot.

The applicant shall provide a main permit submittal that includes building elevations and floor plan views as in Option 1 but without the structural drawings and design of the prefabricated metal building itself.

The structural design of the prefabricated metal building will be a deferred submittal (DFS). In order to request this option, the following additional requirements must be met at the time of submittal:

1. The engineer designing the foundation system will assume the role of engineer of record.
2. The structural drawings in the main permit should show all assumptions made by the

engineer of record in designing the foundations including but not limited to, design criteria, location of all building frames and lateral elements, reactions for each building column/frame for which the foundations have been designed, building elevations and plans including all dimensions.

3. The structural drawings in the main permit shall include complete foundation design based on either reactions obtained directly from the Metal Building manufacturer or as designed by the engineer of record.
4. Anchor bolts where used to anchor the metal building to the foundations must be completely designed and detailed for the reactions and included with the main permit.
5. A complete set of structural calculations for the design of the foundation system and anchorage stamped by the engineer of record must accompany the main permit. Where the engineer of record has assumed a lateral system for the prefabricated metal building, calculations by the engineer of record must be provided to show how reactions were determined including a frame analysis.
6. When the prefabricated metal building deferred submittal is ready for submission, the engineer of record should review the prefabricated metal building drawings and calculations to ensure that the metal building design complies with OSSC 2010 and with all the assumptions that were made when designing the foundations. This review must occur before the deferred submittal is provided to the city for review and approval. The engineer of record's stamp "approved for design concept" or similar must be on each sheet of the prefabricated metal building design drawings being submitted. The deferred submittal can not be submitted to the City for review until the main building permit has been issued.
7. Any revisions to main permit that may occur as a result of this deferred submittal review shall be submitted to the city as a separate revision permit, along with the deferred submittal. The fees for this revision permit will be based on the actual time spent on review of the revision and will be calculated using the prevailing hourly rates.
8. There will be an additional fee to review the metal building deferred submittal. The fee for review of the metal building as a deferred submittal will be calculated based upon the actual

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review hours charged at the prevailing hourly rate plus a \$250 administrative fee, with a minimum charge of \$500. This fee is in addition to any other deferred submittal permit fees. All review time will be billed at the same hourly rate, and payment will be due prior to issuance of the deferred submittal.

9. Reviews and approval from other review groups and agencies (such as life safety, planning and zoning, site development etc) must be completed and their check sheets responded to under the main building permit application. Their reviews can not be deferred.
10. A minimum of 20 working days (four weeks) are provided to complete first reviews of the deferred submittal after the metal building drawings are submitted.

General Plan Submittal Requirements

All plans must conform to the requirements of the minimum submittal standards contained in the brochure "**Commercial - New Construction, Additions, Alterations with Exterior Work, or Structural Changes**," including standards for size and scale of drawings. Drawings must be of such quality as to be legible after microfilming. All required information must be shown on the design drawings. It is not acceptable if information is found only in the submitted calculations.

Submittal Requirements Specific to Prefabricated Metal Building Drawings

The following list contains items that must be included on the metal building design drawings:

1. Seal and signature of the engineer on each sheet of plans.
2. The structural engineer of record's stamp "approved for design concept" or equivalent must be on each sheet of the design drawings.
3. Special inspection items must be listed on the drawings. See **Special Inspections** section below for requirements.
4. Structural notes including but not limited to:
 - All imposed design loads, both dead and live, including equipment loads
 - 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, and design base shear, response modification factor used (R), and analysis procedure used.

- Wind design data including basic wind speed, wind importance factor, wind exposure, internal pressure coefficient, components and cladding, and analysis procedure used.
- ASTM number, yield stress, and allowable stress of all structural steel members.
- All loads imposed on the foundation, both vertical and lateral.
- Notation indicating all welding performed by welders qualified in accordance to AWS standards and all welds conformed to AISC standards
- All codes followed (2010 OSSC, etc.)

5. Plan documents, including but not limited to:
 - Framing plans
 - Cross sections
 - Wall sections
 - Floor and roof details
 - Define all members and connections for built-up sections
 - Connections of all structural members (showing all welds and bolt sizes and locations)
 - Types of construction materials
6. The permit submittal package shall include complete stamped structural calculations.

Special Inspection

Special inspections are required for high strength bolting, material verification of steel, inspection of welding, and inspection of the steel frame details (such as bracing and stiffening, member locations, and application of joint details at each connection). Where fabrication of structural load-bearing members and assemblies is being performed on the premises of a fabricator's shop, special inspection shall be required.

Special inspections shall not be required where the fabricator is approved and audited by a nationally recognized accrediting authority such as AISC, IAS, etc.

Special inspections are required for field assembly or erection of the steel building as noted above.

Helpful Information

Bureau of Development Services

City of Portland, Oregon
1900 SW 4th Avenue, Portland, OR 97201
www.portlandoregon.gov/bds

General Office Hours:

Monday through Friday, 8:00 am to 5:00 pm
BDS main number: 503-823-7300

Permit Information is available at the following location:

Development Services Center (First Floor)
For Hours Call 503-823-7310 | Select option 1

Permitting Services (Second Floor)
For Hours Call 503-823-7310 | Select option 4

For more detailed information regarding the bureau's hours of operation and available services;

Visit our Website
www.portlandoregon.gov/bds

All information in this publication is subject to change.

Important telephone numbers

BDS main number	503-823-7300
DSC automated information line	503-823-7310
Building code information	503-823-1456
Zoning information.....	503-823-7526
Permit information for electrical, mechanical, plumbing, sewer and sign.....	503-823-7363
Development review process	503-823-7357
Permit resources and records.....	503-823-7660

System development charges information

Bureau of Environmental Services	503-823-7761
Bureau of Parks & Recreation	503-823-5105
Bureau of Water Works.....	503-823-7364
Bureau of Transportation	503-823-7002
BDS 24 hour inspection request line requires IVR number and three digit type of inspection code	503-823-7000
Portland License Bureau.....	503-823-5157
City of Portland TTY	503-823-6868



Checklist for Intake of Prefabricated Metal Building Submittal for Structural Review

Instructions

Please place a check mark next to one submittal option you choose for your prefabricated metal building. Place check marks against all the boxes below the option chosen to acknowledge that the submittal meets all of the requirements and conditions listed in the option that you have selected. You must meet all the requirements and conditions listed in the option you have chosen. Failure to do so may result in the entire application being rejected.

OPTION ONE : Standard Submittal Path

Complete design including structural design and calculations for the metal building as specified in the section *Submittal Requirements specific to Prefabricated Metal Building Drawings* are included with this submittal.

Other requirements of the minimum submittal standards contained in the brochure “*Commercial- new Construction, Additions, Alterations with Exterior work ,or structural Changes* “

OPTION TWO: Delayed submittal of structural design of Prefabricated Metal Buildings

With the exception of structural requirements, all other requirements of the minimum submittal standards contained in the brochure “*Commercial- new Construction, Additions, Alterations with Exterior work ,or structural Changes* “

Complete foundation drawings(including geotechnical report where required) based on reactions obtained directly from either the metal building manufacturer or as designed by the Engineer of Record.

A complete set of Architectural drawings including dimensioned plans and elevations that defines the structure completely (except for structural design)

Acknowledgment that no partial permits will be issued and that structural review will not begin till such time as complete drawings and calculations for the metal building as specified in the section *Submittal Requirements specific to Prefabricated Metal Building Drawings* are submitted for review. Standard review timelines (goal of 20 working days to complete first review) will begin only upon submittal of the metal building design.

OPTION THREE: Delayed submittal of foundation and structural design of Prefabricated Metal Buildings

With the exception of foundation and structural design, all other requirements of the minimum submittal standards contained in the brochure “ *Commercial- new Construction, Additions, Alterations with Exterior work ,or structural Changes* “

Basic foundation plan showing extent and location of footings and slab on grade required for review by Environmental Services and other review groups excluding structural and site development.

A complete set of Architectural drawings including dimensioned plans and elevations that defines the structure completely (except for structural design)

Acknowledgment that no partial permits will be issued and that structural review will not begin till such time as complete drawings and calculations for the metal building as specified in the section *Submittal Requirements specific to Prefabricated Metal Building Drawings* are submitted for review. Standard review timelines (goal of 20 working days to complete first review) will begin only upon submittal of the metal building design.

OPTIONFOUR : Main Permit with Prefabricated Metal Building as a Deferred Submittal

Complete foundation drawings (including geotechnical report where required) based on reactions obtained directly from either the metal building manufacturer or as designed by the Engineer of Record.

Structural Drawings show all the assumptions made by engineer of Record including base reaction for each building column/frame for which the foundation has been designed, location of all the lateral load resisting elements, design criteria used in the design.

Anchor bolts where used to anchor the metal building to the foundation , are completely designed, specified and shown on the foundation plans

A complete set of stamped structural calculations used in the design of the foundations.

A complete set of Architectural drawings including dimensioned plans and elevations that defines the structure completely (except for structural design)

Other requirements of the minimum submittal standards contained in the brochure “ *Commercial- new Construction, Additions, Alterations with Exterior work ,or structural Changes* “

Acknowledgment that standard review timelines (goal of 20 working days to complete first review of the deferred submittal) apply to the deferred submittal and that additional fees as indicated in the brochure apply.

Permit Number _____

Applicant's Signature _____ **Date** _____

Checklist for Structural Requirements Specific to Prefabricated Metal Building

A complete submittal of the prefabricated metal building requires all the following items listed below. Please place a check mark next to all the items below to acknowledge that the submittal is complete. Incomplete submittal may result in the entire application being rejected.

- Seal and signature of Engineer on each sheet
- Engineer of Record's stamp "Approved for design concept" or equivalent on each sheet
- Building plan layout with all dimensions
- Building elevations and cross sections
- Wall sections
- Floor and roof details
- All structural members are completely defined
- Connections of all structural members are completely defined (showing all welds, bolt sizes and layout etc.)
- All construction materials are specified
- Notes specifying the code followed, design loads and material specifications are provided.
- Special Inspection items are listed.
- Stamped structural calculations are provided.

Permit Number _____

Applicant's Signature _____ **Date** _____