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Wisconsin Department of Commerce

Safety & Buildings Division
201 West Washington Avenue
P.O. Box 2658
Madison, WI 53701-2658

Evaluation #

New Product # 20089002
Replaces #200802-M
Previously (Replaces 200232-M)

Wisconsin
Building Products Evaluation

Material	Engineered Metal Building System
Manufacturer	American Building Company 1150 State Docks Road Eufaula, AL 36027

SCOPE OF EVALUATION

GENERAL: This is a review of the methodology used for structural performance calculations for a **"standard building package"** system. The review evaluates the pre-engineered metal building systems manufactured by American Building Company, specifically; LRF, RF, M, GC, LT, LP2, LP2-M, SB, LP4, LP4-M, LSS, LSS-M, SSF, EW and HW Series Systems. See **LIMITATIONS OF APPROVAL** section for a clarification note on "Standard Building Package".

The **IBC** requirements below in accordance with the current **Wisconsin Amended ICC Code:**

- **Structural:** The LRF, RF, M, GC, LT, LP2, LP2-M, SB, LP4, LP4-M, LSS, LSS-M, SSF, EW and HW Series Systems were evaluated in accordance with **ss. IBC 1603.1, 1604.1, 1604.2, 1604.3.1, 1604.3.3, 1604.4, 1605.1, 1606** through **1609, 2205.1,** and **2205.2.**
- **Metal Panel Performance Requirements:** American's metal panel roof system performance requirements were evaluated in accordance with **ss. IBC 1504.1, 1504.3, 1504.3.1, 1504.3.2** and **s. IBC 1504.7.**
- **Fire Classification:** American's metal roof panel system was evaluated and was found to be a Class A assembly in accordance with **s. IBC 1505.2.**
- **Roofing:** American's metal roof panels were evaluated in accordance with the requirements of **ss. IBC 1507.4** through **1507.4.4.**

  When re-roofing with American's metal roof panels, installation shall be in accordance with **s. IBC 1510.1** through **s. IBC 1510.4.** American's roof covering materials shall be identified in accordance with **s. IBC 1506.4.**

NOTE: Structural calculations shall be submitted in accordance with IBC Chapter 16 for Live Load, Ground Snow Load, Wind Load, Roof Load, and Seismic Load for ALL BUILDING SUBMITTALS.

DESCRIPTION AND USE

General: The metal building systems are fabricated from 55 ksi minimum yield strength steel for main members. The frame design requires lateral support of the compression flange, and is provided by connecting angles to the webs of purlins or girts so that the flange compressive stress is within allowable limits for any combination of loading.

Roof purlins and wall girts are designed as continuous members and have a minimum yield strength of 55 ksi. Purlin and girt spacing and size is dependent on collateral loading (3psf).

AMERICAN BUILDING SYSTEM "STANDARD BUILDING PACKAGES"

	Model and Description	Roof Slope	Clear Spans	Eave Heights	Bay Spacing (Max.)
1.	**LRF** clear span rigid frame	1:12	30' - 160'	10' - 30'	25'
2.	**RF** clear span	4:12	30' - 120'	10' - 30'	25'
3.	**LRF-M** single gable, multiple span rigid frame with 1 or more interior columns	1:12	80' - 500'	14' - 30'	25'
4.	**GC** clear span tapered girder on column frame with moment connections for continuity	1:12	30' - 80'	10' - 24'	25'
5.	**LT** lean-to, tapered girder on column with simple connections	12:12 or 4:12	10' - 60'	10' - 24'	25'
6.	**LP2** clear span, tapered girder on column frame with moment connections for continuity	½:12	20' - 70'	10' - 24'	25'
7.	**LP2-M** single gable, multiple span rigid frame with 1 or more interior columns	½:12	50' - 500'	14' - 24'	25'
8.	**SB** clear span, prismatic frame	¼:12	24'	12'	25'
9.	**LP4** clear span rigid frame	¼:12	20' - 60'	24' max.	25'
10.	**LP4-M** single gable, multiple span rigid frame	¼:12	50' - 500'	24'	25'
11.	**LSS** low profile single slope	¼:12	50' - 160'	24'	25'
12.	**LSS-M** single slope rigid frame	¼:12	50' - 320'	24'	25'
13.	**SSF** single slope flush framed clear span	¼:12	20' - 60'	20'	25'

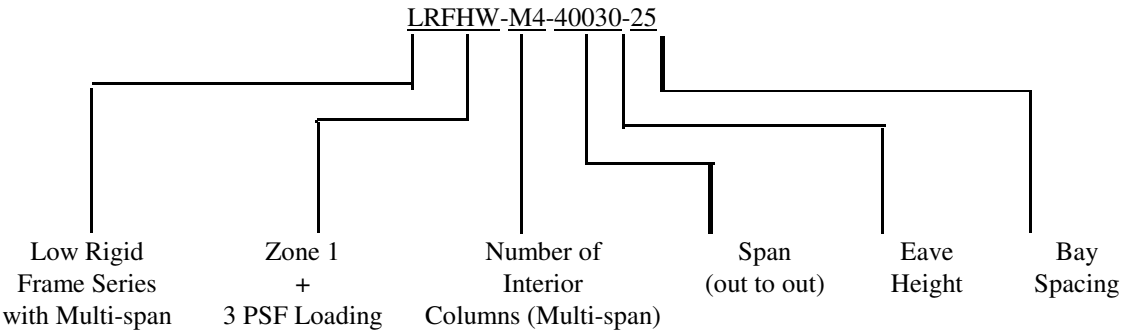
The load combination, DL + ½ LL + LL, without the wind load, requires the ridge rafters to be changed to the next flange thickness for the 120' and 80' span frames. The 30' span does not require any change.

End walls consist of end wall roof beams and columns of either mill-rolled sections of A36 or A50 steel or built-up "I" sections of 55 ksi steel or cold formed sections of 55 ksi steel.

Wind bracing is provided by using diagonal rods or cables in the roof and walls.

Roof and wall coverings consist of 26 and 24 gage galvanized steel panels or aluminum coated panels.

The building models are identified as follows:



HW Series:	Zone 1 with 3 psf collateral load
EW Series:	Zone 2 with 3 psf collateral load
H* Series:	Zone 2 without 3 psf collateral load
E* Series:	Zone 2 without 3 psf collateral load

***Note:** The "H" and "E" series may be used only when the project owner submits a written application for waiver of the 3 psf service equipment load (Collateral load).

TESTS AND RESULTS

Weld test data has been submitted satisfying **s. Comm 62.2208** of the current Wisconsin Enrolled Commercial Building Code requirements.

CALCULATIONS

All primary steel, built-up sections are manufactured from 55 ksi minimum yield steel, and hot rolled sections from 36 or 50 ksi minimum yield steel, designed in accordance with the current American Institute of Steel Construction's "Specification for Structural Steel Buildings" (AISC Specifications).

The design and assembly of structural joints and connections (primary and secondary steel) shall conform to the "Specification for Structural joints Using ASTM A325 and A307 Bolts", approved by the Research Council on Structural Connections, when applicable.

All secondary structure is designed in accordance with the current "North American Specification for the Design of Cold-Formed Steel Structural Members" (NASPEC), including its Supplements, or the AISC Specifications, whichever is applicable.

All cladding material is designed in accordance with the current NASPEC, including its Supplements.

LIMITATIONS OF APPROVAL

The **IBC** limitations below are in accordance with the current **Wisconsin Amended ICC Code:**

This approval is not for a specific building, but rather an approval of the building design concept for a **"standard building package"**. The metal buildings must be constructed in accordance with the sample calculations (design concept) and details on file with the department.

Clarification Note: The "Standard Building Package" is the submitted calculation package reviewed as part of the building product approval process that uses as assumed set of loading conditions for the state of Wisconsin. This does not relieve the designer from submitting calculations for each project, even when the **"standard building**

package" is what will be erected. Whether the **"standard building package"** design and construction details are modified or not, based on different loading conditions at a site, calculations shall be submitted on a job-to-job-basis.

The **"standard building package"** does not have mezzanines, cranes or rooftop units, and drift or unbalanced loads from existing buildings.

The approval number permits plan submittal without repetitious structural calculations for the **"standard building package"**. This approval is for uniform loading conditions only. Any special concentrated loading condition is not included under this approval number and requires complete structural calculations to be submitted.

NOTE: Structural calculations shall be submitted in accordance with IBC Chapter 16 (Live, Ground Snow, Roof, Wind, Collateral, and Seismic Loads).

INFORMATION REQUIRED ON PLANS SUBMITTED FOR PLAN REVIEW

This evaluation number, member properties, size of all members, layout and other general requirements of **s. Comm 61.30** shall be indicated on each plan submittal. **NOTE: Member sizes shall be shown in the building plan submittal or, subsequent component plan submittal.**

The location and sizes or critical dimensions of all major structural members (rigid frames, columns, beams, end walls, etc.) shall be shown. This shall include the web and flange sizes at the base, haunch, ridge, and any other location where the member sizes change.

Foundation plans (by others) shall show details of footings as well as anchor bolt sizes and side thrust restraint when required.

The size and spacing of purlins and girts shall be shown on a cross-section or on roof and elevation framing plans. The size and location of all diagonal bracing shall be shown.

This approval will be valid through December 31, 2013, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The product approval is applicable to projects approved under the current edition of the applicable codes. This approval may be void for project approvals made under future applicable editions. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:
Approval Date: March 27, 2008 By: _____

Lee E. Finley, Jr.
Product & Material Review
Integrated Services Bureau

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