



Safety & Buildings Division  
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Evaluation #

New Product #20079026  
Replaces #200726-I  
Previously Replaced 200248-I

## Wisconsin Building Products Evaluation

Material

Foam Plastic Sandwich Panels

Manufacturer

Master-Bilt Products  
Highway 12N  
New Albany, MS 38652

### SCOPE OF EVALUATION

**GENERAL:** This report evaluates the foam plastic sandwich panels manufactured by Master-Bilt Products for compliance with the requirements of the current edition of the Wisconsin Enrolled Commercial Building Code.

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

- **Foam Plastic Core Material:** The Master-Bilt (MS) foam plastic sandwich panel was evaluated under the foam plastic requirements in accordance with ss. **IBC 2603.1, 2603.2, 2603.3** and **Exception 2, 2603.5.2**, and s. **IBC 2603.9**.
  - **Wall and Ceiling Panel:** The Master-Bilt (MS) foam plastic sandwich panel was evaluated as a insulated wall and ceiling panel used in refrigerated facilities and freezer warehouses in accordance with ss. **IBC 2603.4.1.2, 2603.4.1.3, 2603.5.2** and **2603.9**.

**NOTE:** The structural performance and thermal transmission properties of the panels are outside the scope of this evaluation and are subject to specific evaluation and approval by the building plan reviewer.

### DESCRIPTION AND USE

Master-Bilt (MS) panels consist of a minimum 0.0179 inch (26 gauge) thick stainless steel or 0.0217 inch (26 gauge) thick painted (optional) galvanized, galvanized or Galvalume steel facers with **maximum 6 inch thick core** of foamed polyurethane insulation produced with the BASF's Elastopor P17221R/Elastopor P1046U foam system. The panels are available in various lengths with a maximum width of 46 inches. Panel side and end joints are tongue and groove with cam locks.

BASF's Elastopor P17221R/Elastopor P1046U polyurethane foam system consists of an A component (isocyanate) and a B component (polyol) which are mixed together to produce the foam cores.

Mechanical through fastening of both panel facings to the building structure is required.

### **TESTS AND RESULTS**

Factory Mutual conducted testing in accordance with **ASTM E-84** on unfaced, **4 inch** thick (approved up to a maximum 6 inches), BASF's Elastopor P17221R/Elastopor P1046U polyurethane core. The results showed a flame spread rating of 25 and a smoke developed rating of 400.

Factory Mutual Research conducted their full-scale room corner test (**FM 4880**) on galvanized steel-faced panels for wall/ceiling with **6-inch** thick polyurethane cores. The wall/ceiling panels met the Factory Mutual Research requirements for a Class I fire rating and **met code requirement for use without a thermal barrier and 30 foot height limitation** when installed as specified below:

- Wall panels are set in 3 by 6 by 3 inch minimum 18 gauge galvanized steel channels secured on the interior to panel facers with self drilling screws maximum 12 inches on center.
- Interior wall/wall and wall/ceiling intersection are covered with 4 by 4 inch minimum 18 gauge galvanized steel corner flashing secured to both panel facers with self drilling screws approximately 3 inches on center.
- Interior wall joints and ceiling joints are covered with 4 inch wide minimum 18 gauge galvanized steel battens secured to both facers with self drilling screws approximately 12 inches on center.

Tests show 1) that the panels in and of themselves would not create a need for automatic sprinklers and 2) that the panels would be acceptable in a combustibile occupancy protected by automatic sprinklers as defined by FM Global Loss Prevention Standards.

**ASTM D1929** test data for flash ignition and self-ignition temperatures: flash ignition 968° F (520° C) and self-ignition 968° F (520° C). The test data is on file with the department.

### **LIMITATIONS OF APPROVAL**

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

- **Wall and Ceiling Panel: Section IBC 2603.9** allows the use of the MS panel without a thermal barrier and automatic sprinkler system based on diversified tests up to **a maximum height of 30 feet and 6 inch thickness**. The Master-Bilt (MS) panels are approved for use to a maximum height of 30 feet without a thermal barrier and a automatic sprinkler system (for refrigerated facilities, walk-in coolers or freezers over 400 square feet, and freezer warehouses), required under **ss. IBC 2603.3** and **Exception 2.**, and **ss. IBC 2603.4.1.2, 2603.4.1.3** and **2603.5.2**.

#### **NOTES:**

1. For refrigerated buildings and freezer warehouses, building heights exceeding 30 feet, and panels up to 10 inches thick maximum, thermal barriers on both sides of the panel shall be required for proper protection.
2. Other chapters of the code not mentioned above may require an automatic sprinkler system based on limitations of occupancy, area, height, etc., or may specify stricter height limitations.

Installation shall be in accordance with the Factory Mutual Research listings, the manufacturer's instructions and this evaluation. In the event of conflicts, the more strict requirements shall govern.

This approval will be valid through December 31, 2012, 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 6, 2008 By: \_\_\_\_\_

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

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