



Department of Commerce

Safety & Buildings Division

201 West Washington Avenue

P.O. Box 2658

Madison, WI 53701-2658

Evaluation #

200807-I (Replaces 200267-I  
Revision 2)

# Wisconsin Building Products Evaluation

Material

CrownTonka & Thermalrite  
Walk-In Coolers & Freezers

Manufacturers

Crown Fixtures, Inc.  
10700 Hwy. 55, Suite 300  
Plymouth, MN 55441

Thermalrite  
4215 E. Airport Dr.  
Ontario, CA 90040

CrownTonka Walk-ins  
304 Main Street North  
Winnebago, MN 56098

CrownTonka Walk-ins  
140 T. Elmer Cox Drove  
Greenville, TN 37743

**SCOPE OF EVALUATION**

**GENERAL:** This report evaluates the use of foam plastic material used in walk-in coolers, freezers and refrigerated facilities (Trade Names **CrownTonka** and **Thermalrite**), manufactured by Crown Fixtures.

The cited **IBC** requirements below are in accordance with of the current **Wisconsin Amended ICC 2000 Code**:

- **Foam Plastic Core Material:** The **CrownTonka** foam plastic sandwich panel was evaluated under the foam plastic requirements in accordance with **ss. IBC 2603.1, 2603.2, 2603.3** and **Exception 4, 2603.5.2** and **s. IBC 2603.9**.
- **Foam Plastic Core Material:** The **Thermalrite** 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, 2603.4.1.3, and 2603.5.2**.
- **Wall and Ceiling Panel:** The **CrownTonka** foam plastic sandwich panel was evaluated as an 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**.
- **Wall and Ceiling Panel:** The **Thermalrite** foam plastic sandwich panel was evaluated as an 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, and 2603.5.2**.

**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**

**Crown Tonka** coolers and freezers consist of wood-framed wall and ceiling panels with foamed-in-place urethane insulation cores, and galvanized or Galvalume or stainless steel cladding (0.0625 thick). A variety of optional wall and floor finishes are available. Panels have tongue and groove construction and are joined together using a cam lock fastener that is operated with a hex wrench.

**Thermalrite** coolers and freezers are constructed of sandwich panels with foam plastic insulation and galvanized steel cladding. Panels have tongue-and-groove construction and are joined together using a cam lock fastener operated with a hex wrench.

**TESTS AND RESULTS**

**CrownTonka** panels only; Factory Mutual Research conducted their full-scale room corner test (**FM 4880**) on galvanized steel-faced panels for wall/ceiling with **5-inch** thick polyurethane cores (Foam Enterprise’s FE 246). 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.

**CrownTonka** panels: **ASTM D1929** test data for flash ignition and self-ignition temperatures: flash ignition 842° F (450° C) and self-ignition 986° F (530° C).

**Thermalrite** panels: **ASTM E84** test was conducted the polyurethane cores (Foam Enterprise’s FE 246). The results are as follows:

Flame Spread Index	20
Smoke Developed Index	265

**CrownTonka** panels: **ASTM E84/UL 723** tests was conducted on the panel assembly. The results are as follows:

	Core Material	4 and 5 inch thick painted or unpainted <b>aluminum</b> finished panels	4 and 5 inch thick painted or unpainted <b>steel</b> finished panels
Flame Spread Index	25	25	15
Smoke Developed Index	450	450	300

**CrownTonka** panels: **ASTM D482** test data for ignition residue: the residue left after ignition of the test specimens was 0.24% by weight.

The test data is on file with the department.

**LIMITATIONS OF APPROVAL**

The **IBC** limitations below are in accordance with of the current **Wisconsin Amended ICC 2000 Code**:

- **Wall and Ceiling Panel: Section IBC 2603.9** allows the use of the **CrownTonka** panels without a thermal barrier and automatic sprinkler system based on diversified tests up to a maximum height of 30 feet 5 inch thickness. **CrownTonka** panels are approved for use to a maximum height of 30 feet without a thermal barrier and a automatic sprinkler system (in 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 5 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.
3. These thermal barrier or sprinkler exceptions do not apply to **Thermalrite** panels.

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.

Installation and maintenance shall be in accordance with the manufacturer's instructions.

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 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: May 16, 2008

By: \_\_\_\_\_

Lee E. Finley, Jr.  
Building Product and Commercial Plan Review  
Integrated Services Bureau