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**Wisconsin**  
Department of Commerce

Evaluation #

200705-I

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

## Wisconsin Building Products Evaluation

Material

Metal Faced Foam Insulated  
Wall and Roof/Ceiling Panels

Manufacturer

Galvamet America Corporation  
1717 McCall Drive  
Shelbyville, IN 46176

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### SCOPE OF EVALUATION

**GENERAL:** This report evaluates the use of polyisocyanurate foam plastic material in metal faced wall and roof/ceiling panels, manufactured by Galvamet America Corporation.

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

- **Foamed-in-place Polyisocyanurate Core:** The Galvamet Galvatherm polyisocyanurate foam plastic sandwich panel was evaluated under the foam plastic requirements in accordance with **ss. IBC 2603.1, 2603.2, 2603.3 Exception 4, 2603.4.1.3, 2603.5.2 and 2603.7.**
- **Wall and Roof/Ceiling Panel:** The Galvamet Galvatherm polyisocyanurate foam plastic sandwich panel was evaluated as an insulated wall and roof/ceiling panel used in walk-in coolers and freezers in accordance with **ss. IBC 2603.4.1.2, 2603.4.1.3, 2603.5.2 and 2603.7.**

### DESCRIPTION AND USE

The Galvamet Galvatherm polyisocyanurate foam plastic sandwich panels include: 1) Galvatherm Shadowline profile panel used in interior partition walls and ceilings or exterior walls and roofs of buildings and soffits; 2) Galvatherm Mesa panel is used on exterior walls and roof/ceiling on industrial and cold storage facilities; 3) Galvatherm Microrib used on exterior walls and roofs of buildings; and Galvatherm Stucco Wall an exterior wall and roof panels.

Galvamet Galvatherm panel thicknesses are 2", 2.5", 3", 4", 5" and 6". In Galvamet America facility; Galvatherm Shadowline, Galvatherm Mesa, Galvatherm Microrib and Galvatherm Stucco wall panel lengths are 8 feet minimum to 50 feet maximum. All panel widths are 42 inches.

Galvatherm Shadowline, Galvatherm Mesa, and Galvatherm Microrib and Galvatherm Stucco panels have concealed clip off set tongue and groove joint configurations.

The Galvamet Galvatherm Shadowline, Mesa, Microrib and Stucco Wall and roof/ceiling panel metal facings consists of: exterior 26 gauge galvanized and pre-painted steel (22 and 24 guage upon request) interior 26 gauge galvanized and pre-painted steel. Coatings on the panels consists of: exterior PVDF polymer 70% Kynar 500/Hylar 5000 or Siliconized polyester, interior Siliconized polyester (PVC Plastisol upon request).

**TESTS AND RESULTS**

Factory Mutual FMRC Standard 4880 testing to a maximum height of 50 feet was conducted on the Galvamet Galvatherm Shadowline, Mesa, Microrib and Stucco Wall panels up to 6 inch thick maximum. Tests conducted included: ASTM D482, ASTM D1622, ASTM D1929, and ASTM E84.

The Factory Mutual FMRC Standard 4880 test showed the panels in and of themselves would not create a need for automatic sprinklers and that the panels would be acceptable in a combustible occupancy protected by automatic sprinklers as defined by FMRC Loss Prevention Standards.

Factory Mutual also tested in accordance with ASTM E84: flame spread index 25 and smoke-development index 280.

Center For Applied Engineering, Inc., also did thermal performance testing in accordance with:

**SUMMARY OF TEST RESULTS**

**Galvamet Polyisocyanurate (PIR) Thermal Insulation**

<b>ASTM Test Method</b>	<b>Thermal Properties</b>	<b>Results</b>		
<b>C 236</b>	Thermal Performance using Guarded Hot Box	1.5"	3.0"	5.0"
	Thermal Resistance, h ft <sup>2</sup> °F/Btu	10.8	24.6	43.2
<b>C 518</b>	Thermal Transmission using Heat Flow Meter			
	Thermal Resistance, h ft <sup>2</sup> °F/Btu	16.47		
	Thermal Conductivity, Btu in/h ft <sup>2</sup> °F	0.123		
<b>ASTM Test Method</b>	<b>Physical Properties</b>	<b>Results</b>		
<b>C 421</b>	Friability mass loss, %	20.15		
<b>D 1621</b>	Compressive Strength			
	psi at 10% deflection or yield,			
	parallel to rise	16.3*		
	perpendicular to rise	25.7*		
<b>D 1622</b>	<b>Density</b> lbs/ft <sup>3</sup>	2.07		
<b>D 1623</b>	<b>Tensile Strength</b>			
	Tensile strength, psi	20.1		
	Elongation, %	5.4		
<b>D 2856</b>	<b>Closed Cell Content, %</b>	90.31%		
<b>ASTM E84</b>	<b>Surface Burning Characteristics</b>			
	Flame Spread Index	28		
	Smoke Development Index	147		

\* Results from second set of samples submitted after processing improvements were implemented.

Testing on the Galvamet Galvatherm Shadowline, Mesa, Microrib and Stucco Wall and Roof/Ceiling panels up to 6 inch thick maximum, was conducted in accordance with flammability characterization and small scale identification testing in accordance with ASTM D482, ASTM D1622, ASTM D1929, ASTM E84 and ASTM E711 of polyisocyanurate foam core removed from the above roof/ceiling panels. UBC 26-3 (formerly 17-5) room fire test of finished insulated wall and roof/ceiling panels were conducted under report number J.I. 0Y2A0.A.M. Potential

for fire spread above the roof panels, simulated wind uplift pressure and resistance foot traffic and hail damage testing were conducted previously and reported under J.I. 1B3A6.AM and Project ID 3003475. A 50 foot FM Approvals Corner Test of finished insulated wall and roof/ceiling panels was conducted and reported under Project ID 3009047.

The above testing resulted in the Galvamet Galvatherm Shadowline, Mesa, Microrib and Stucco Wall panels up to 6 inch thick maximum, meet the requirements for Class 1 insulated wall and ceiling panels and Class 1 roof panels when installed as indicated in the Hylsa S.A. de C.V. DSC Galvamet listing with FM.

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 Roof/Ceiling Panel: Section IBC 2603.7** allows the use of Galvamet Galvatherm Mesa freezer panels **without** a thermal barrier and automatic sprinkler system based on diversified tests, to a maximum height of 50'-0" and 6 inch thickness as required under **s. IBC 2603.4.1.3** and **s. IBC 2603.5.2**.

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: June 25, 2007 By: \_\_\_\_\_

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