

CERTIFICATE OF COMPLIANCE

Certificate Number 20180802-R39428
Report Reference R39428-20180731
Issue Date 2018-AUGUST-02

Issued to: North Central Foam
2068 Center St SW
Huron, SD 57350

**This is to certify that
representative samples of**

POLYSTYRENE THERMAL INSULATION, RIGID
CELLULAR; FOAMED PLASTIC

An expanded polystyrene foamed plastic board
manufactured at a nominal density of 1.00, 1.25, and 2.00
lb/ft³. Also, designated Types I, VIII, and IX for ASTM
C578.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: ASTM C578-18, Rigid, Cellular Polystyrene Thermal
Insulation.

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's
Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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File R39428
Project 4788364826

July 31, 2018

REPORT

On

Polystyrene Thermal Insulation, Rigid Cellular
(QORW)

UNDER THE

CLASSIFICATION PROGRAM

North Central Foam
Huron, SD

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DESCRIPTION

PRODUCT COVERED:

The product covered by this Report is rigid, cellular polystyrene thermal insulation in the form of boards, designated Styrochem, Types I, VIII and IX in accordance with ASTM C578-18.

USE:

The product is intended for use as a building material as permitted by local authorities having jurisdiction.

TEST RECORD NO. 1

EXAMINATION OF MATERIALS:

The EPS resins used to manufacture boards under this project have previously been tested by Styrochem Canada Ltd. for Surface Burning Characteristics in accordance with UL723 and physical properties in accordance with ASTM C578. In order to qualify North Central Foam's use of these resins for ASTM C578 certification, physical property check tests for compressive strength and flexural strength were conducted under this project. The Surface Burning Characteristics Certification will be extended to North Central Foam without the need for further testing.

The materials used in this investigation were produced under the observation of a representative of UL LLC, in a ready-to-use form. The composition of the finished materials is of a proprietary nature. Data on the composition is on file at the Laboratories for use in the Follow-Up Service Program.

PHYSICAL PROPERTIES:

SAMPLES

The samples submitted consisted of the following.

ASTM C578 Type <u>Designation</u>	<u>Bead Type</u>
I	Styrochem MA-500, MB-500, MC-500, MA-550, MB-550, MC-550, MA-590, MB-590 or MC-590
VIII	Styrochem MA-500, MB-500, MC-500, MA-550, MB-550, MC-550, MA-590, MB-590 or MC-590
IX	Styrochem MA-500, MB-500, MC-500, MA-550, MB-550, MC-550, MA-590, MB-590 or MC-590

METHOD AND RESULTS

GENERAL

The tests were conducted in accordance with ASTM C578-18, Standard Specification for Preformed, Cellular Polystyrene Thermal Insulation. The values obtained were found to be in accordance with the minimum requirements as stated in ASTM C578-18 for the product Types submitted.

DENSITY

Method - ASTM C578-18 Paragraph 11.2 and ASTM C303.

Specimens - Density measurements were conducted on the test specimens submitted for the tests described below.

COMPRESSIVE RESISTANCE

Method - ASTM C578-18, Paragraph 11.5 and ASTM D1621, at a cross-head speed of 0.1 in./min/in. of thickness to yield or 10 percent deformation. Specimens were conditioned for 40 h at $73.4 \pm 1.8^\circ\text{F}$ and 50 ± 5 percent RH.

Specimens - Specimens measured 2 in. by 2 in. by 2 in. thick.

Results -

Type	Specimen No.	Specimen Density (lb/ft ³)	Compressive Resistance (psi)	ASTM C578 Minimum Reqmts. (psi)
I	1	1.138	13.5	
I	2	1.142	15.2	
I	3	1.160	15.5	
I	4	1.137	13.5	
I	5	1.158	13.9	
Avg:		1.15	14.3	10.0
VIII	1	1.364	16.9	
VIII	2	1.353	17.0	
VIII	3	1.241	16.2	
VIII	4	1.325	16.2	
VIII	5	1.282	16.8	
Avg:		1.31	16.6	13.0
IX	1	2.440	43.6	
IX	2	2.398	41.2	
IX	3	2.384	40.8	
IX	4	2.378	36.3	
IX	5	2.402	41.5	
Avg:		2.40	40.7	25.0

FLEXURAL STRENGTH

Method - ASTM C578-18, Paragraph 11.6 and ASTM C203, Method 1, Procedure B with a cross-head speed of 1.7 in./min; a support span to depth ratio of 10; a support span to width ratio of 2.5; and width to depth ratio of 4. The radius of supports and loading fittings used was 1 in. Specimens were conditioned to constant weight at $73.4 \pm 1.8^{\circ}\text{F}$ and 50 ± 5 percent RH.

Specimens - Specimens measured 12 in. by 4 in. by 1 in. thick.

Results -

Type	Specimen No.	Specimen Density (lb/ft ³)	Breaking Load (lb)	Flexural Strength (psi)	ASTM C578 Minimum Reqmts. (psi)
I	1	0.964	7.2	30.4	
I	2	0.960	7.1	29.6	
I	3	0.958	7.0	29.4	
I	4	0.955	7.0	29.3	
I	5	0.957	7.0	29.5	
Avg:		0.96		29.7	25.0
VIII	1	1.449	10.4	43.7	
VIII	2	1.471	10.2	43.3	
VIII	3	1.494	10.3	43.7	
VIII	4	1.460	10.5	44.3	
VIII	5	1.353	9.9	41.7	
Avg:		1.45		43.7	30.0
IX	1	2.008	16.7	69.1	
IX	2	1.983	16.3	67.3	
IX	3	1.989	16.3	67.4	
IX	4	1.972	15.3	64.2	
IX	5	2.019	16.1	66.2	
Avg:		1.99		66.9	50.0

Test Record No. 1 Summary:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in the Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation, ASTM C578-18 and, therefore, such products are judged eligible to bear UL's Mark as described below and on the Conclusion Page of this Report.

Classification Marking:

Surface Burning Characteristics

The Surface Burning Characteristics as shown below in the Classification Marking represent the judgment of UL based upon the results conducted previously for Styrochem Canada Ltd (File R10302) and the examination and tests presented in this Report.



Foamed Plastic
SURFACE BURNING CHARACTERISTICS

	<u>6 in. Thick Max.+</u>
Flame Spread	5 #
Smoke Developed	200#

+ - Installed in a thickness or stored in an effective thickness, as indicated, for a density of 1.00-2.00 lb./ft³.

- Flame spread and smoke developed recorded while material remained in the original test position. Ignition of molten residue on the furnace floor resulted in flame travel equivalent to calculated flame spread Classification of 135 and smoke developed Classification of Over 500.

Physical Properties

The Classification Marking as shown below represent the judgment of UL LLC based upon the results of the examination and tests presented in this Report.



POLYSTYRENE THERMAL INSULATION, RIGID CELLULAR TYPE
IN ACCORDANCE WITH ASTM C578

Types I, VIII and IX

Test Record 1 by:

A handwritten signature in black ink, appearing to read 'John Wiesner'.

John Wiesner
Associate Project Engineer
Building Materials & Systems

Reviewed by:

A handwritten signature in black ink, appearing to read 'Dwayne E. Sloan'.

Dwayne E. Sloan
Principal Engineer
Building Materials & Systems

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CONCLUSION

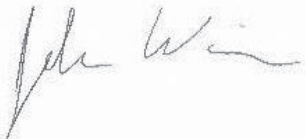
A sample of the product covered by this Report has been found to comply with the requirements covering the category and the product is found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify UL certification or that the product(s) described are covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the UL Mark on such products which comply with UL's Follow-Up Service Procedure and any other application requirements of UL. The Mark of UL on the product, or the UL symbol on the product and the Mark on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Classification and Follow-Up Service.

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Styrochem

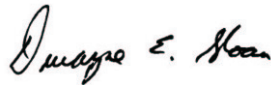
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Report by:



John Wiesner
Associate Project Engineer
Building Materials & Systems

Reviewed by:



Dwayne E. Sloan
Principal Engineer
Building Materials & Systems