

Intertek

ETL SEMKO

REPORT OF A

STANDARD FIRE TEST PROGRAM

CONDUCTED ON A

SPRAY-APPLIED INSULATION PANEL

CLIENT:

**ICYNENE INC.
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REPORTED BY:

**INTERTEK TESTING SERVICES NA LTD.
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PREFACE

This report describes the tests, standards, and details of the test specimens as installed for this program.

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TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
DESCRIPTION	1
FIRE TEST OBSERVATIONS	2
TIME TEMPERATURE CURVE	3
UNEXPOSED TEMPERATURE DATA	4
CLASSIFICATION AND RESULTS	5
CONCLUSIONS	6

INTRODUCTION

On August 3, 2006, Intertek Testing Services NA Ltd. conducted a fire endurance test of Icynene spray-applied low density urethane foam insulation protected with "Hi Bar[®]" spray-applied insulation. The objective of the test was to determine if the spray-applied insulation provides a thermal barrier for the Icynene low density rigid foam insulation substrate.

Testing was conducted in accordance with CAN4-S124-M85, *Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic*.

DESCRIPTION

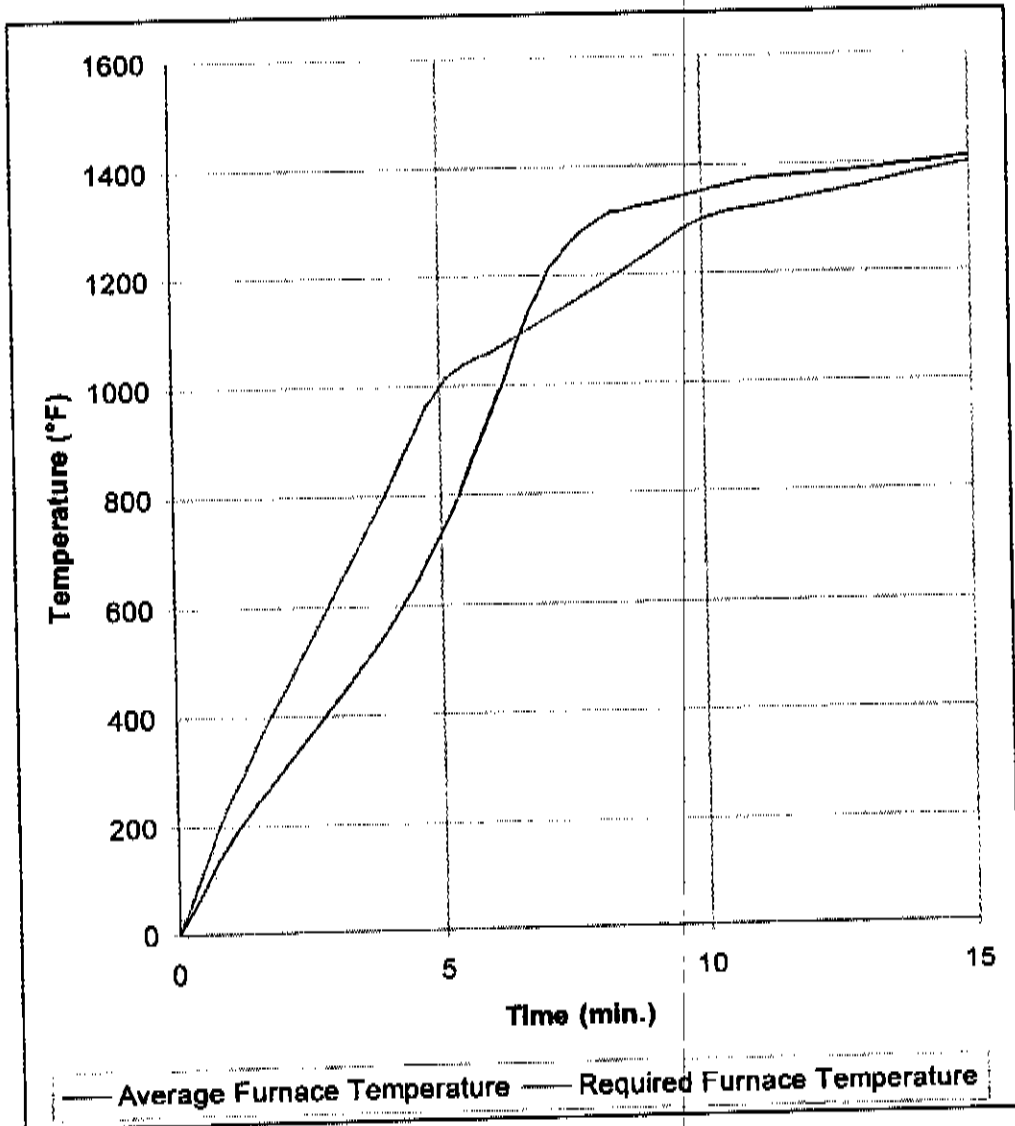
The test sample consisted of 6mm Hardiboard panel with approximately 3 in. thickness spray-applied Icynene low density urethane foam insulation covered with approximately 1 in. thickness Can-Cell Industries' "Hi-Bar[®]" spray-applied mineral fibre insulation on the foam side. The total panel size measured 40 in. wide by 40 in. long.

Thermocouple numbers 1, 2, 3, and 4 were installed in the centre of each of the four panel quadrants. Thermocouple number 5 was installed in the centre of the sample panel. Thermocouples were fastened to the foam surface prior to application of the protective insulation.

FIRE TEST OBSERVATIONS

TIME (min.)	EXPOSED SIDE	UNEXPOSED SIDE
8:00		TC #3 = 177°F
9:00		TC #3 = 236°F
10:00		TC #3 = 314°F, TC #2 = 216°F
13:00		TC #1 = 221°F, TC #2 = 528°F, TC #3 = 579°F, TC #4 = 330°F, TC #5 = 181°F
15:00	No change, test discontinued	

TIME TEMPERATURE CURVE
Average Temperature of Furnace During the Fire Test



UNEXPOSED TEMPERATURE DATA (°F)

Time (min.)	TC #1	TC #2	TC #3	TC #4	TC #5
1	86	91	93	87	82
2	92	103	109	93	87
3	101	119	125	105	97
4	112	132	137	117	109
5	126	146	149	131	123
6	140	156	157	143	138
7	149	161	161	151	150
8	154	162	167	156	160
9	157	163	222	158	165
10	159	204	315	159	168
11	159	281	416	186	169
12	183	371	515	250	168
13	244	579	587	331	182
14	311	652	629	411	223
15	377	668	653	503	270

CLASSIFICATION AND RESULTS

The test standard states that:

5.1 Classification A

- 5.1.1 If the temperature rise at the interface of the protective cover and the foamed plastic at the end of 15 min has not exceeded 140 C° (250 °F) average or 180 C° (325 °F) at any one of the thermocouples specified in Clause 4.6, the protective cover shall be accorded a Classification of A.

5.2 Classification B

- 5.2.1 If the temperature rise at the interface of the protective cover and the foamed plastic at the end of 10 min has not exceeded 140 C° (250 °F) average or 180 C° (325 °F) at any one of the thermocouples specified in Clause 4.6, the protective cover shall be accorded a Classification of B.

5.3 Classification C

- 5.3.1 If the temperature rise at the interface of the protective cover and the foamed plastic at the end of 15 min has not exceeded 195 C° (350 °F) average or 250 C° (450 °F) at any one of the thermocouples specified in Clause 4.6, the protective cover shall be accorded a Classification of C.

5.4 Classification D

- 5.4.1 If the temperature rise at the interface of the protective cover and the foamed plastic at the end of 10 min has not exceeded 195 C° (350 °F) average or 250 C° (450 °F) at any one of the thermocouples specified in Clause 4.6, the protective cover shall be accorded a Classification of D.

Based on the test results and criteria, the submitted sample of Icynenc low density urethane foam insulation protected with "Hi Bar[®]" spray-applied insulation achieved a Classification B.

CONCLUSIONS

The Icynene Inc. spray-applied low density urethane foam insulation protected with 1 in. thickness Can-Cell Industries' "Hi-Bar[®]" spray-applied insulation, when installed as described in this report, achieved the following Classification when tested in accordance with CAN4-S124-M85, *Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic*.

Assembly Description	Classification
3 in. Thickness Spray-Applied Icynene Low Density Urethane Foam Insulation and 1 in. Thickness "Hi Bar [®] " Spray-Applied Insulation	B

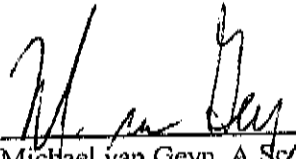
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