COM*check* Software Version 3.9.0
Envelope Compliance Certificate

2009 IECC

Section 1: Project Information

Project Type: **New Construction**
Project Title : Portland Sports Complex

Construction Site:
512 Warren Ave
Portland, ME 04103

Owner/Agent:
Jim Grattelo
Portland Sports Complex
512 Warren Ave
Portland, ME 04103

Designer/Contractor:
William Belanger
Seacoast Crane & Building Co., Inc
98 Route 236
P.O. Box 540
Kittery, ME 03904
207-439-5899

Section 2: General Information

Building Location (for weather data): **Portland, Maine**
Climate Zone: **6a**
Building Type for Envelope Requirements: **Non-Residential**

Activity Type(s)	Floor Area
Sports Arena	18000

Section 3: Requirements Checklist

Envelope PASSES: Design 8% better than code

Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Roof 1: Metal Building, Standing Seam	18350	25.0	13.0	0.032	0.049
Exterior Wall 1: Metal Building Wall	13970	19.0	0.0	0.070	0.069
Entry Doors: Insulated Metal, Swinging	126	---	---	0.140	0.700
Overhead Doors: Insulated Metal, Swinging	196	---	---	0.070	0.700
Floor 1: Slab-On-Grade:Unheated, Vertical 1 ft.	420	---	5.0	---	---

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

Air Leakage, Component Certification, and Vapor Retarder Requirements:

- ☐ 1. All joints and penetrations are caulked, gasketed or covered with a moisture vapor-permeable wrapping material installed in accordance with the manufacturer's installation instructions.
- ☐ 2. Windows, doors, and skylights certified as meeting leakage requirements.
- ☐ 3. Component R-values & U-factors labeled as certified.
- ☐ 4. No roof insulation is installed on a suspended ceiling with removable ceiling panels.
- ☐ 5. 'Other' components have supporting documentation for proposed U-Factors.
- ☐ 6. Insulation installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation.
- ☐ 7. Stair, elevator shaft vents, and other outdoor air intake and exhaust openings in the building envelope are equipped with motorized dampers.
- ☐ 8. Cargo doors and loading dock doors are weather sealed.
- ☐ 9. Recessed lighting fixtures installed in the building envelope are Type IC rated as meeting ASTM E283, are sealed with gasket or caulk.

☐ 10. Building entrance doors have a vestibule equipped with self-closing devices.
Exceptions:

- ☐ Building entrances with revolving doors.
- ☐ Doors not intended to be used as a building entrance.
- ☐ Doors that open directly from a space less than 3000 sq. ft. in area.
- ☐ Doors used primarily to facilitate vehicular movement or materials handling and adjacent personnel doors.
- ☐ Doors opening directly from a sleeping/dwelling unit.

Section 4: Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2009 IECC requirements in COM*check* Version 3.9.0 and to comply with the mandatory requirements in the Requirements Checklist.

William J. Belanger III - Project Manager		July 3rd, 2012
Name - Title	Signature	Date

thermal design
energy saving products for buildings™

July 3, 2012

Mr. Bill Belanger III
Seacoast Crane and Building Co.
PO Box 540
Kittery, ME 03904

RE: Project Name - Portland Sports, 512 Warren Avenue, Portland, ME 04103

Thank you for incorporating Thermal Design's liner system in your metal building roof envelope design. Thermal Design has completed numerous hot box tests and uses recognized modeling methods on our insulation liner systems for metal building roof assemblies in order to document installed performance. Although we have not tested the specific combination of a pre-installed R38 liner system, we believe the following should be more than acceptable and should be used to determine compliance.

Performance Reference:	ANSI/ASHRAE/IESNA Standard 90.1-2010, *Energy Standard for Building Except Low-Rise Residential Buildings*
Table:	A2.3 Assembly U-factors for Metal Building Roofs
Assembly:	The R25+R11 (36) Liner System shows an estimated performance of an installed R-32.3 (U-factor: U-0.031) in a standing seam roof with thermal spacer blocks.

Increasing the insulation to a pre-installed R-38 is conservatively expected to yield an installed R-value of R-33.3 (U-0.030). It is important to following manufacturers installation instructions to represent typical installation and expected performance.

If there are any questions or clarifications required, please don't hesitate to contact Thermal Design and thank you for implementing Thermal Design's liner systems in your design.

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