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Date of Authorization
BMEC Authorization
BMEC Application

July 28, 2005
05-08-312
A2005-09

AUTHORIZATION REPORT- The Envirotech Membrane

1. Applicant

Storage Systems Construction Corp.
9603 Side Road, Unit 17
Erin, Ontario
N08 1T0

Tel: (519) 833-0054

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2. Manufacturing Facilities

Storage Systems Construction Corp.
9603 Side Road, Unit 17
Erin, Ontario
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PGI Fabrene
240 Dupont Road
North Bay, Ontario
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3. Description

The Storage Systems Construction Corp.'s building system is a non-pressurized building, wherein the structure is composed of a steel framework to support the Envirotech Membrane, which is tensioned to provide a weather barrier.

The steel frame structure of the Storage Systems Construction Corp.'s building system shall be designed and constructed in accordance with the Building Code. The steel framework is a series of in-line clear span frames, with end walls. The frame pieces are modular and are used in different arrangements to make a variety of profiles.

The Envirotech Membrane is made of two flame resistant woven polyolefin materials, Type P708. The Envirotech Membrane pieces are custom-sized and the edges reinforced for each building as per Storage Systems Construction Corp.'s building system specifications.

The Envirotech Membrane meets the requirements of a Class A material under ASTM E 84 Surface Burning Characteristics and satisfies the flammability requirements set out in CAN/ULC-S109 and NFPA 701-1999.

4. Authorization requested

The Applicant sought a Building Materials Evaluation Commission (the "BMEC") Authorization for the Envirotech Membrane for use as a roof covering, only when used in conjunction with an unheated Storage Systems Construction Corp.'s building system, as defined in this Authorization, in lieu of the requirements of Sentence 3.1.15.1.(1) "Roof Covering Classification" of the Building Code.

5. Assessment

Reports and assessments provided by the Applicant show that if the Envirotech Membrane is designed, performance tested and installed in accordance with the limitations in the manufacturer's instructions, and the specific terms and conditions stated in this Authorization, the level of performance required by the Building Code will be provided.

The reports submitted and reviewed, but were not limited to:

1. Storage Systems Construction Corp. "Envirotech Structures" Fabric Arch Storage Buildings: Specifications - High Profile 60'.
2. Storage Systems Construction Corp. "Envirotech Structures" Fabric Arch Storage Buildings: Specifications - Standard Profile 50'/60'/70'/80'/100'.
3. Storage Systems Construction Corp. Envirotech Fabric/Arch Storage Building Warranty.
4. Certificate of Authorization: Storage Systems Construction Corp.
5. Triodem Laboratory Report: Neutral Salt Stray Test (ASTM B117).
6. Fabrene Industrial Synthetic Fabrics: Type P708 - Specifications.
7. PGI Fabrene "Quality Assurance Manual".
8. Fabrene Inc. Certificate of Registration ISO 9001: 2000.
9. NFPA 701 "Standard Methods of Fire Tests for Flame Propagation of Textiles and Films", 2004 Edition.
10. Bodycote Material Testing Report 04-020657 (B): ASTM E84 "Surface Burning Characteristics", Product P7081830.
11. Bodycote Test Results 01-02-827(B) CAN/ULC-S109 "Large-Flame Resistance of M747 Woven Polyethylene".
12. Bodycote Test Results 04-02-657(A) CAN/ULC-S102 "Surface Burning Characteristics of M747".

13. Bodycote Test Results 01-02-827(A) NFPA 701-1999 Test 1 and Test 2 "Flame Resistance Test of Woven Polyethylene Fabric".
14. "International Building Code" Chapter 31, 2003 edition.
15. Storage Systems Construction Corp. "Snow Load Calculations", May 12, 2005.
16. Acceptance by Other Jurisdictions:
 - (a) The Corporation of the Township of Wilmot
 - (b) Ministry of Transportation, Ontario
17. Contracts and Awards:
 - (a) SSCC 115-703 Drawing L01
 - (b) Goulais River
 - (c) 106-704 Drawing L01
 - (d) SSB-059321
 - (e) 104-704 Drawing L01
 - (f) SSB-059280
 - (e) SSCC 102-704

6. Authorization

The Envirotech Membrane is authorized for use as a roof covering, only when used in conjunction with an unheated Storage Systems Construction Corp.'s building system, in lieu of the requirements of Sentence 3.1.15.1.(1) "Roof Covering Classification" of the Building Code; all other requirements pertaining to the installation and construction are subject to the requirements of the Building Code, and are subject to the following terms and conditions:

Note: this Authorization is not intended to be used as an equivalent to CAN/ULC-S107-M87 where roof coverings are permitted to be used in the construction of traditional roofing systems Class A, B, and C as determined by CAN/ULC-S107-M87.

A. Specific Terms & Conditions

1. This Authorization is valid only for the use of the Envirotech Membrane, Type P708 when it is used in conjunction with a Storage Systems Construction Corp.'s building system.
2. In addition to the requirements of Article 2.3.1.1. of the Building Code, the structural design shall be carried out by a Professional Engineer as defined in the *Professional Engineers Act*, (Ontario) and who is experienced in the specific method applied.

3. When the Envirotech Membrane is installed in conjunction with a Storage Systems Construction Corp.'s building system together they shall be constructed as per the requirements of Subsection 3.2.2. of the Building Code.
4. The Envirotech Membrane used in the construction of Storage Systems Construction Corp.'s building system must be designed in accordance with Subsections 4.1.7., and 4.1.8. of the Building Code.
5. The Envirotech Membrane is authorized for use in combustible construction only.
6. Except as permitted by Article 3.2.2.17. of the Building Code, the Envirotech Membrane shall not be used where the assembly is required to have a fire-resistance rating.
7. The Envirotech Membrane is authorized for use in unheated building applications, when the Envirotech Membrane is used in conjunction with a Storage Systems Construction Corp.'s building system.
8. The requirements of Article 2.1.1.11. of the Building Code need not be considered, when the Envirotech Membrane is used in the construction of the Storage Systems Construction Corp.'s building system, for buildings that consumes energy at a rate less than 3.5 Btu/h•ft² under peak conditions.
9. The Envirotech Membrane shall not be used in a building more than 1 storey in building height.
10. The Envirotech Membrane shall not be used in the construction of Storage Systems Construction Corp.'s building system where the major occupancy is Group A, B, C, D, E or F Division 1, as defined by the Building Code.
11. The Envirotech Membrane shall meet the following standards:
 - a. CAN/ULC-S109-M87 "Standard for Flame Test of Flame-Resistant Fabrics and Films",
 - b. NFPA 701-1999 "Methods of Fire Test for Flame Propagation of Textiles and Films" Test 2, and
 - c. CAN/ULC-S102.2-M2003 "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies."
12. The Envirotech Membrane shall not have a flame spread rating more than 25, as specified in CAN/ULC-S102.2-M2003.
13. The Envirotech Membrane shall be installed by installers who are approved by Storage Systems Construction Corp.

14. The Envirotech Membrane shall be installed as per the Storage Systems Construction Corp.'s building system Installation Manuals, and are subject to the products' limitation as specified by the manufacturer.
15. The Envirotech Membrane shall be identified by a permanent mark that indicates the manufacturer's name and registered trademark.
16. The Envirotech Membrane used in the construction of Storage Systems Construction Corp.'s building system shall have the spatial separation determined in accordance with Subsections 3.2.3. or 9.10.14. of the Building Code, where the roof membrane becomes a part of the exposing building face.

B. General Conditions

1. The use of the Envirotech Membrane must comply with the *Building Code Act, 1992* as amended or re-enacted from time to time and except as specifically authorized herein, with the Building Code as amended or remade from time to time.
2. A copy of this Authorization shall accompany each application for a building permit and shall be maintained on the site of the construction with the building permit.
3. The Applicant named in Part 1 hereof shall promptly notify the BMEC of:
 - (a) the failure of the Applicant, or of the material, system or building design that is the subject matter of this Authorization, to comply with any of the terms and conditions set out in 6. A. above; or
 - (b) the occurrence of any of the events described in Conditions 6. B. 4. (a) and (b) (ii) below.
4. The BMEC may amend or revoke this Authorization where it determines that:
 - (a) any change has been made to:
 - (i) the material, system or building design that is the subject matter of this Authorization;
 - (ii) the address of the applicant specified in Part 1 of this Authorization; or,
 - (iii) the ownership of the applicant specified in Part 1 of this Authorization.
 - (b) the use of the material, system or building design authorized herein;

- (i) does not comply with the *Building Code Act, 1992* or any relevant legislation as they may be amended or re-enacted from time to time; or
 - (ii) provides an unsatisfactory level of performance, in situ.
 - (c) the Applicant, or the material, system or building design that is the subject matter of this Authorization, has failed to comply with any of the terms and conditions set out in this Authorization; or
 - (d) any Building Code provision relevant to this Authorization has been amended or remade.
5. Where the BMEC receives additional information concerning the material, system or building design authorized herein, the BMEC may review this Authorization and the BMEC may after the review amend or revoke this Authorization as in the opinion of the BMEC may be necessary

Dated at Toronto this 28 day of July 2005.

BUILDING MATERIALS EVALUATION COMMISSION

Judy Beauchamp, Member