CRANE Kemlite®
A Crane Co. Company

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TECHNICAL DATA 6226

Rev. 11 7/03

FIRE-X GLASBORD®

fiberglass panel with Surfaseal

Part Number/Identifier: FX
Application: CLASS A WALL AND CEILING PANEL

PRODUCT

Fire-X Glasbord with Surfaseal is a durable, semi-rigid building material made of fiberglass reinforced plastic (frp). The panel has a Class A (1) flame spread. When compared to ordinary fiberglass reinforced plastic.

SURFASEAL FINISH

Surfaseal is a unique surface treatment that, when compared to ordinary frp, exhibits up to ten times the cleanability, six times the stain resistance, and twice the abrasion resistance.

PURPOSE

Fire-X Glasbord embossed panels are designed for interior wall finishes where a Class A, sanitary, easy to clean panel is desired. Where Factory Mutual Approval is needed refer to technical data sheet #6223.

PHYSICAL PROPERTIES: TABLE 1

PROPERTY	TYPICAL VALUE 0.09" (2.3 mm)	TYPICAL VALUE 0.120" (3.0 mm)	TEST METHOD
Flexural Strength	13.6 x 10^3 psi 94 MPa	14.6 x 10^3 psi 101 MPa	ASTM D790
Flexural Modulus	0.608 x 10^6 psi 4192 MPa	0.708 x 10^6 psi 4882 MPa	ASTM D790
Tensile Strength	7.1 x 10^3 psi 49 MPa	7.5 x 10^3 psi 52 MPa	ASTM D638
Tensile Modulus	0.803 x 10^6 psi 5537 MPa	0.803 x 10^6 psi 5537 MPa	ASTM D638
Barcol Hardness	45	40	ASTM D2583
Izod Impact Strength	14 ft-lb/in notched 0.75 J/mm	14 ft-lb/in notched 0.75 J/mm	ASTM D256
Gardner Impact Strength	45 in-lbs 5.1 J	45 in-lbs 5.1 J	ASTM D3029
Coefficient of Linear Thermal Expansion	1.7 x 10^{-5} in/in•°F 31 µm/m•°C	1.7 x 10^{-5} in/in•°F 31 µm/m•°C	ASTM D696
Water Absorption (%)	0.32%/24 hrs @77°F (25°C)	0.32%/24 hrs @77°F (25°C)	ASTM D570
R Value	0.23 hr•ft^2•°F/Btu 0.047 hr•ft^2•°C/Kcal	0.30 hr•ft^2•°F/Btu 0.061 hr•ft^2•°C/Kcal	ASTM C1114
Surface Burning Characteristics	Class A	Class A	ASTM E84
Taber Abrasion Resistance (cs-17 wheels, 500 g. wt., 25 cycles)	0.020% max wt loss	0.030% max wt loss	Taber Test

DESIGN DATA: TABLE 2

PART NUMBER IDENTIFIER	NOMINAL THICKNESS	AVAILABLE COLORS	SIZE	FINISH
FX	0.09" (2.3 mm)	85 white 83 col. white 70 beige 48 pearl gray 84 ivory 66 silver	4' x 8', 9', 10', 12' (1.2m x 2.4m, 2.7m, 3.0m, 3.7m) 2' x 2' and 2' x 4' grid systems (0.6m x 0.6m and 0.6m x 1.2m) grid systems (0.6 m x 0.6 m & 0.6 m x 1.2 m)	embossed
	0.12" (3.0 mm)	85 white		

Other lengths, widths, and colors available by quotation.
* Bulk coils defined as 100" or longer. Bulk coil policy #6207 applies. Coil may contain up to 5% reject area.

SPECIFICATIONS

These panels are manufactured by a continuous laminating process in lengths as required.

COMPOSITION

1. **Reinforcement:** Random chopped fiberglass roving.
2. **Resin mix:** Modified polyester copolymer and inorganic fillers and pigments.

FINISHED PANEL QUALITY

1. Panels shall have a wear side with a pebble-like embossed finish. Color shall be uniform throughout, as specified. Other colors can be manufactured. The backside shall be smooth. Backside imperfections which do not affect functional properties are not cause for rejection.
2. Physical properties shall be as set forth in Table 1.
3. Product quality standards and tolerances for panel weight and thickness shall be as set forth in Kemlite's Quality Control Procedures/Standards which are available on request.
4. Dimensions shall be as specified on purchase order, subject to the following tolerances:
   Width: ±1/8" (3.2 mm)
   Length: ±1/8" (3.2 mm) up to 12' (3.7 m)
   Squareness: not more than 1/8" (3.2 mm) out of square.
5. Panels shall be installed in accordance with manufacturer's guidelines as set forth in Kemlite's "Installation Guide."
6. Bulk Coil Policy #6207 applies for coils for lamination.

CERTIFICATION

A. Flame spread 25 or less, smoke developed 450 or less (per ASTM E-84).
B. Meets USDA/FSIS requirements.
C. ICBO Report #ER-4583.
D. 2 Red and 1 Blue Thread On The Back® and double fluorescent Thread On The Front of Panel® designate Fire-X Glasbord.

FLAME SPREAD AND SMOKE DEVELOPMENT RATINGS

The numerical flame spread and smoke development ratings are not intended to reflect hazards presented by Kemlite products or any other material under actual fire conditions. These ratings are determined by small-scale tests conducted by Underwriters Laboratories and other independent testing facilities using the American Society for Testing and Materials E-84 test standard (commonly referred to as the "Tunnel Test"). KEMLITE PROVIDES THESE RATINGS FOR MATERIAL COMPARISON PURPOSES ONLY. Like other organic building materials (e.g. wood), panels made of fiberglass reinforced plastic resins will burn. When ignited, frp may produce dense smoke very rapidly. All smoke is toxic. Fire safety requires proper design of facilities and fire suppression systems, as well as precautions during construction and occupancy. Local codes, insurance requirements and any special needs of the product user will determine the correct fire-rated interior finish and fire suppression system necessary for a specific installation.

FABRICATING RECOMMENDATIONS

Note: Protect your eyes with goggles; cover your nose and mouth with a filter mask when cutting Glasbord panels.
Hand fabricating: Drilling—High speed drill bit (60° cutting angle, with 12°-15° clearance) or hole saw.
Stapling: Standard pneumatic stapler.
Cutting: Sheet metal shears or circular saw with reinforced carborundum or carbide-tipped blade.
Production fabricating: Use carbide-tipped tools. Straight cuts can be sheared (90° cutting edge with 0.002" [0.05 mm] clearance) or sawed. For irregular cuts, use die punch or band saw.

STORAGE

All Kemlite products should be stored indoors.

SERVICEABLE TEMPERATURE RANGE

Panels will perform in temperatures from -40°F to 130°F. For use in environments beyond this range, contact Kemlite for recommendations.

PRODUCT LIMITATIONS

Panels will provide a clean, aesthetically-pleasing finished installation. However, by nature, fiberglass reinforced plastic paneling may occasionally have small areas that are aesthetically unacceptable for use. Panels should be inspected on-site prior to installation. If any portion of material will not provide an acceptable appearance, Kemlite should be notified at once. Upon verification of unacceptability, that portion of material will be replaced by Kemlite. Kemlite's sole responsibility is for the replacement of defective material but not for labor or other handling or installation expenses.

Near heat source: Glasbord panel products may discolor when installed near a heat source which radiates temperatures exceeding 130˚F (55˚C) such as cookers, ovens, and deep fryers. Installation over uneven concrete block walls may result in areas of delamination and bulging.

KEMLITE TESTING

Cleanability test: When Fire-X Glasbord FM with Surfaseal and an ordinary frp are heavily soiled, the Fire-X Glasbord FM exhibits up to 10 times more cleanability per MacBeth Computer Colorimeter.
Stain resistance test: Prolonged direct contact to concentrated ammonia-based cleaner exhibited no color change per MacBeth Computer Colorimeter.

Additional Information Available:

- **#6211 Installation Guide**
- **#6220 Accessories Tech Data**
- **CSI Specifications**
- **#6223 FXE Tech Data**
- **#6228 Ceiling Panels Tech Data**
- **#6254 Glasbord 10-year Warranty**

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BCC Ruling No. 97-31-573

BUILDING CODE COMMISSION DECISION ON B.C.C. #97-31-573

IN THE MATTER OF Subsection 24 (1) of the *Building Code Act, 1992*.

AND IN THE MATTER OF Sentence 3.1.4.2.(1) of "the Building Code" (Ontario Regulation 419/89 as amended by Ont. Reg. 183/88, 581/88, 11/89 and 115/89)

AND IN THE MATTER OF an application by Mr. Norman Pye, Northern Pride Products Inc., Paris, Ontario, for the resolution of a dispute with Mr. Ron Rashleigh, Chief Building Official, Town of Paris, Ontario, concerning whether the wall and ceiling construction containing foamed plastic insulation provides sufficiency of compliance according to Sentence 3.1.4.2.(1) of the Ontario Building Code at Northern Pride Products Inc., 20 Scott Avenue, Paris, Ontario.

APPLICANT
Mr. Norman Pye
Northern Pride Products,
20 Scott Avenue
Paris, Ontario

RESPONDENT
Mr. Ron Rashleigh
Chief Building Official
Town of Paris

PANEL
Mr. Roy Philippe (Chair)
Mr. Rick Florio
Mr. Ross Thomson

PLACE
Toronto, Ontario

DATE OF RULING
Tuesday, July 22nd, 1997

APPEARANCES
Mr. Norman Pye
Northern Pride Products
Paris, Ontario
The Applicant

Mr. Kevin Maloney
Laird Plastics
Mississauga, Ontario

Mr. Ron Rashleigh
Chief Building Official
Town of Paris
The Respondent

RULING

1. **The Applicant**

   Mr. Norman Pye, Northern Pride is the holder of a permit under the *Building Code Act, 1992* to construct a poultry processing plant at 20 Scott Avenue, Paris, Ontario.

2. **Description of Construction**

   The building of Northern Pride Products Inc. is a new one storey processing plant (Group F, Division 2 major occupancy) of non-combustible construction with a building area of 8,960 square feet (832 square metres). The building does not have a fire alarm system, a sprinkler system or a standpipe and hose system. Rigid foamed plastic insulation is used in the construction of the walls and ceilings of the Production Area, Cold Room, Shipping Room and Cooler. "Kemlite Glasboards", a type of fibreglass reinforced plastic panels, are installed over the rigid foamed plastic insulation.

   The construction of the building is regulated by Article 3.2.2.51 of the Building Code. and may be of combustible or noncombustible construction used either singly or in combination, and the roof is not required to have a fire-resistance rating. The building is constructed of masonry loadbearing walls, open web steel joists and steel deck.

3. **Dispute**

   The dispute between the Applicant and Respondent concerns whether the wall and ceiling installations meet the requirements of Sentence 3.1.4.2.(1) of the Building Code.

4. **Provisions of the Building Code**

   Sentence 3.1.4.2.(1) Protection of Foamed Plastics

   (1) Foamed plastics which form part of a wall or ceiling assembly in combustible construction shall be protected from adjacent spaces in the building, other than adjacent concealed spaces within attic or roof spaces, crawl spaces, and wall assemblies, by

   (a) one of the interior finishes described in Subsections 9.29.4. to 9.29.9.,

   (b) sheet metal mechanically fastened to the supporting assembly independent of the insulation, not less than 0.38 mm (0.015 in) thick and with a melting point not below 650oC (1202oF) provided the building does not contain a Group B or Group C major occupancy, or

   (c) any thermal barrier that meets the requirements of Sentence 3.1.5.11.(2). (See Appendix A.)

5. **Applicant's Position**

The Applicant maintained that the plant was approved by Agriculture Canada. Due to the nature of production in the plant which requires surfaces to be non-porous to prevent bacteria, the Applicant indicated that the `glasboard' is a suitable material because it can be easily cleaned. As the plant environment is very wet and damp and there is no hydro in the walls, there is a little chance of a fire hazard. Furthermore, there is a low occupant load of 22.

6. **Chief Building Official's Position**

The wall and ceiling construction include the installation of foam plastic insulation which is not protected from adjacent spaces by a thermal barrier tested in conformance with CAN4-S124-M "Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic" as required under the Building Code. The Applicant has installed "Kemlite Glasbord" fibre-glass reinforced plastic panels over the foam plastic insulation. "Kemlite Glasbord" has not been tested to the required standard specified in Sentence 3.1.4.2.(1). An Order to Comply was issued by the Respondent to the Applicant to provide protection between the foamed plastic insulation and the "Kemlite Glasbord" panels in accordance with the requirements of Sentence 3.1.4.2.(1) of the OBC.

7. **Commission Ruling**

It is the decision of the Building Code Commission that the installation of `Glasbord' CPI over 1-1/2" S.M. board provides sufficiency of the compliance with Article 3.1.4.2. of the Building Code.

8. **Reasons:**

i) The building is small (i.e) single storey and 8960 sq.ft. and is subdivided into areas no greater than 4500 sq. ft in area by masonry walls and metal doors.

ii) The distance of travel to exits is less than required by the Building Code.

iii) The processing area is damp and high pressure hose stations are available which are intended for wash down but could be used for fire fighting purposes.

iv) Ambient temperature alarms are located in the processing area and storage to which would alert the occupants of a fire when temperatures exceed 45o and 34o F respectively.

v) The occupant load is low (i.e. 22 persons).

Dated at Toronto this 22nd day in the month of July in the year **1997** for application number **1997-32**

Roy Philippe, Chair
Mr. Rick Florio
Mr. Ross Thomson