

**SBCCI PUBLIC SAFETY TESTING AND EVALUATION SERVICES INC.**

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a Participating Member of the NES, Inc.

Evaluation Reports are the opinion of the Committee on Evaluation, based on the findings, and do not constitute or imply an approval or acceptance by any local community. The Committee, in review of the data submitted, finds that in their opinion the product, material, system, or method of construction specifically identified in this report conforms with or is a suitable alternate to that specified in the Standard and International Codes,

**SUBJECT TO THE LIMITATIONS IN THIS REPORT.**

The Committee on Evaluation has reviewed the data submitted for compliance with the *Standard Building Code*® and the Florida Building Code 2001 - Building and submits to the Building Official or other authority having jurisdiction the following report. The Committee on Evaluation, SBCCI PST & ESI and its staff are not responsible for any errors or omissions to any documents, calculations, drawings, specifications, tests or summaries prepared and submitted by the design professional or preparer of record that are listed in the Substantiating Data Section of this report. Portions of this report were previously included in Evaluation Reports #7703, #8462, #8788, #9309, #9231, #9365, #9418, #9592 and #9592A. Copyrighted © 2003 SBCCI PST & ESI

REPORT NO.: 9592B

EXPIRES: See current SBCCI PST &amp; ESI EVALUATION REPORT LISTING

CATEGORY: GLAZING

SUBMITTED BY:

GE PLASTICS  
ONE PLASTICS AVENUE  
PITTSFIELD, MASSACHUSETTS 01201-3697  
413-448-4735

**1. PRODUCT TRADE NAME**

LEXAN® Polycarbonate Sheets:

- 1.1 LEXAN® 9030 and 9034
- 1.2 LEXAN® XL10
- 1.3 LEXAN® MR10
- 1.4 LEXAN® FMR
- 1.5 LEXGARD® Laminates
- 1.6 LEXAN® Corrugated Sheet
- 1.7 LEXAN MR15
- 1.8 LEXAN Mega-Corrugated

**2. SCOPE OF EVALUATION**

Classified Light-Transmitting Plastic

**3. USES**

LEXAN® Polycarbonate Sheets are used as classified light-transmitting plastic in signs, light diffusers, skylights, exterior light-transmitting panels, and glazing.

**4. DESCRIPTION****4.1 General**

LEXAN® is the registered trade name for bisphenol-A Polycarbonate produced by the General Electric Company. LEXAN® Polycarbonate Sheet is extruded from a variety of LEXAN® resin grades. Sheets are available with either an uncoated or coated surface in smooth and in matte, and textured surface finishes in a full range of transparent, translucent, and opaque colors. LEXAN® Polycarbonate sheet is a thermoplastic material, therefore it may be formed into a variety of shapes without changing the physical or chemical properties of the material. LEXAN® Polycarbonate resins are produced in low, medium, and high melt viscosities. These resins are extruded or injection molded into a variety of shapes which may be used for signs, light diffusers, skylights, and exterior light transmitting panels.

**4.1.1 LEXAN® 9030 and 9034 Sheet:** Standard uncoated LEXAN sheet, used for transparent protective glazing.

**4.1.2 LEXAN® XL10 Sheet:** LEXAN® polycarbonate substrate with a non-yellowing uv-resistant surface treatment.

**4.1.3 LEXAN® MR10 Sheet:** LEXAN® polycarbonate substrate with a silicone abrasion resistant coating.

**4.1.4 LEXAN® FMR:** LEXAN® polycarbonate substrate with a silicone abrasion resistant coating.

**4.1.5 LEXGARD® Laminates:** LEXAN® polycarbonate laminates of 2, 3, or 4 ply's with Interlayer film and a silicone abrasion resistant coating on the exterior surface.

**4.1.6 LEXAN® Corrugated Sheet:** LEXAN® polycarbonate is coextruded into a corrugated sheet

**4.1.7 LEXAN MR15 Sheet:** LEXAN polycarbonate substrate with a silicone abrasion resistant coating.

**4.1.8 LEXAN Mega-Corrugated Sheet:** LEXAN polycarbonate is co-extruded into a corrugated shape.

**4.2 Fire Testing for Class CC 1 & CC 2 Plastics**

Samples of LEXAN® Polycarbonate Sheets were tested for Flammability under ASTM D 635, Ignition Properties under ASTM D 1929, and Smoke Density under ASTM D 2843.

**TABLE 1  
CLASSIFICATION OF PLASTIC**

Material	Class of Plastic
LEXAN® 9030 and 9034	CC 1
LEXAN® XL10	CC 1
LEXAN® MR10	CC 1
LEXAN® FMR	CC 1
LEXGARD® Laminates	CC 1
LEXAN® Corrugated	CC 2
LEXAN MR15	CC 1
LEXAN Mega-Corrugated	CC 1

**5. INSTALLATION**

The LEXAN® Polycarbonate Sheets shall be glazed in sashes that allow sufficient edge engagement to accommodate changes in dimensions caused by temperature and humidity expansion and contraction, and to allow for deflections caused by wind or snow loading. Noncombustible end caps are required to prevent flame from contacting the open ends of the sheets. Fireman's access panels may be required for evacuation and venting of rooms glazed with LEXAN® Polycarbonate Sheets.

The manufacturer's published installation instructions and this report shall be strictly adhered to and a copy of these instructions shall be available at all times on the job site during installation.

The instructions within this report govern if there are any conflicts between the manufacturer's instructions and this report.

**6. SUBSTANTIATING DATA**

- 6.1 Manufacturer's descriptive literature, specifications, and installation instructions.
- 6.2 Test reports of LEXAN 9030, 9034, and FMR (previously designated MR4000):
  - 6.2.1 Flammability under ASTM D 635, Electrical Testing Laboratories, Inc., Report Nos. 427255, February 28, 1974; 427256, March 1, 1974; 427257, February 28, 1974; 427258, March 1, 1974; 427259, February 28, 1974; 433186, dated September 11, 1975; 434408, December 2, 1975; 434409, December 2, 1975; 437049-E, October 19, 1976; and 437049-H, October 19, 1976, signed by D.J. Schrum.
  - 6.2.2 Ignition properties under ASTM D 1929, United States Testing Company, Inc., Report 70304-1, November 15, 1976, signed by William Rindosh and Frank Pepe.

- 6.2.3. Smoke Density under ASTM D 2843, Electrical Testing Laboratories, Inc., Report No. 411656, March 12, 1970, to October 6, 1975, signed by R.H. Tompkins.
- 6.2.4 ANSI A97.1 Impact Testing, Electrical Testing Laboratories, Inc., August 1, 1971, to May 28, 1974, signed by C.F. Robb and N.H. Bay.
- 6.3 Test reports on LEXGARD Laminates, United States Testing Company, Inc., signed by Steve Caldarola, John Lomash, Robert L Oates, and Patrick V. McCullen:
  - 6.3.1 Flammability under ASTM D 635, Report Nos. 89667-2R1 and 89667-2R2, December 1, 1986; Report LA72030-6, February 24, 1987.
  - 6.3.2 Ignition properties under ASTM D 1929, Report Nos. 90477-14R and 90477-15R, December 1, 1986; Report LA72030-5, February 24, 1987.
  - 6.3.3 Smoke Density under ASTM D 2843, Report Nos. 89667-3A and 89667-3B, December 1, 1986; Report LA72030-3, February 19, 1987; Report Nos. LA72030-1 and LA72030-2, February 24, 1987.
- 6.4 Test reports on LEXAN MR10 (formerly MR5) and XL10 coated polycarbonate, SGS U.S. Testing Company, Inc., signed by Steve Caldarola and Frank Pepe:
  - 6.4.1 Smoke density under ASTM D 2843, Number 117080-3, February 1, 1996.
  - 6.4.2 Smoke density under ASTM D 2843, Number 120363-1, January 22, 1997.
  - 6.4.3 Flammability under ASTM D 635, Number 117080-6, February 1, 1996.
  - 6.4.4 Flammability under ASTM D 635, Number 120363-8, January 28, 1997.
  - 6.4.5 Ignition properties under ASTM D 1929, 120363-2, January 22, 1997.
- 6.5 Test report on LEXAN XL, Flammability under ASTM D 635, Smoke Density under ASTM D 2843, and Ignition Properties under ASTM D 1929, United States Testing Company, Inc., Report LA 62536-2, January 23, 1987, signed by Robert L. Oates, Michael S. Elliott, and Patrick V. McCullen.
- 6.6 Test reports on LEXAN Corrugated Sheet, United States Testing Company, Inc., September 16, 1991, signed by Steve Caldarola and John Lomash.
  - 6.6.1 Number 102016-1, Smoke Density under ASTM D 2843.
  - 6.6.2 Number 102016-2R, Flammability under ASTM D 635, sample thickness 0.030 inch, April 20, 1992.
  - 6.6.3 Number 102016-3, Ignition Properties under ASTM D 1929.
- 6.7 Test report on comparative fire exposure of glass and plastic using a simulated building fire, Underwriters Laboratories Inc., File R5601, Assignment 70NK8420, May 17, 1971, signed by J.R. Beyreis, G.T. Castino, and J.A. Bono.
- 6.8 Test reports on LEXAN MR15 Sheet, SGS U.S. Testing Company, Inc., signed by Nick Kitov and Piyush Shah:
  - 6.8.1 Flammability under ASTM D 635, 0.30 mm (0.093 inch) thick samples, No. 166999-33-R1, May 9, 2002.
  - 6.8.2 Flammability under ASTM D 635, 13.0 mm (0.5 inch) thick samples, No. 166999-32-R1, May 9, 2002.
  - 6.8.3 Smoke density under ASTM D 2843, 93 MIL sheet, No. 166999-35-R1, May 9, 2002.
  - 6.8.4 Smoke Density under ASTM D 2843, 500 MIL sheet, No. 16859-1, June 7, 2002.

- 6.8.5 Ignition properties under ASTM D 1929, No. 166999-42, May 23, 2002.
- 6.9 Test reports on LEXAN Mega-corrugated Sheet, SGS U.S. Testing Company, Inc., signed by Nick Kitov and Piyush Shah:
- 6.9.1 Flammability under ASTM D 635, 93 MIL Sheet thick, No. 166999-1, April 24, 2002.
- 6.9.2 Ignition properties under ASTM D 1929, No. 166999-41, May 23, 2002.
- 6.9.3 Surface burning characteristics under ASTM E 84, 82 mil thick sheet, No. 168240-9, July 17, 2002, signed by Brian Ortega and Greg Banasky.

## 7. CODE REFERENCES

*Standard Building Code*® - 1999 Edition

Section 103.7	Alternate Materials and Methods
Section 2405	Impact, Wind and Other Loads
Section 2407	Sloped Glazing
Section 2604	Light-Transmitting Plastics
Section 3108.5	Signs - Use of Plastic Materials

Florida Building Code 2001 - Building

Section 103.7	Alternate Materials and Methods
Section 2405	Impact, Wind and Other Loads
Section 2407	Sloped Glazing
Section 2604	Light-Transmitting Plastics
Section 3108.5	Signs - Use of Plastic Materials

## 8. COMMITTEE FINDINGS

The Committee on Evaluation in review of the data submitted finds that, in their opinion, the LEXAN® Polycarbonate Sheets as described in this report conform with or are suitable alternates to that specified in the *Standard Building Code*® and the Florida Building Code 2001 - Building or Supplements thereto.

## 9. LIMITATIONS

- 9.1 This Evaluation Report and the installation instructions, when required by the code official, shall be submitted at the time of permit application.
- 9.2 The use of LEXAN® Polycarbonate Sheets is limited to the use of a Class CC 1 or CC 2 light-transmitting plastics as stated in Section 2604 of the *Standard Building Code*®. The classification of the plastics is given in Table 1 of this report.
- 9.3 LEXAN® Polycarbonate Sheets shall not be used as glazing in hazardous locations as defined in Section 2405.2 of the *Code* unless test reports by an approved testing laboratory are submitted to the code official substantiating compliance with ANSI Z 97.1.
- 9.4 When the LEXAN Polycarbonate Sheets listed in this report are incorporated in a complete glazing assembly manufactured by a company other than GE Plastics, the material shall be identified with this report by either a label or certification.

- 9.5 The LEXAN® Polycarbonate Sheets listed in this report shall be installed in accordance with the manufacturer's instructions and the applicable *Code*.

## 10. IDENTIFICATION

Each package of LEXAN® Polycarbonate Sheets covered by this report shall be labeled with the manufacturer's name and/or trademark, the SBCCI Public Safety Testing and Evaluation Services Inc. Seal or initials (SBCCI PST & ESI), and the number of this report for field identification.

## 11. PERIOD OF ISSUANCE

SEE CURRENT SBCCI PST & ESI EVALUATION REPORT LISTING FOR STATUS OF THIS EVALUATION REPORT.

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