



ICC-ES Evaluation Report ESR-1333

Reissued October 2021

This report is subject to renewal October 2023.

DIVISION: 08 00 00—OPENINGS
Section: 08 84 00—Plastic Glazing

REPORT HOLDER:

SABIC INNOVATIVE PLASTICS

EVALUATION SUBJECT:

LEXAN® POLYCARBONATE SHEET PRODUCTS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)

Properties evaluated:

- Light-transmitting plastics
- Surface-burning characteristics
- Durability

2.0 USES

Lexan 9030/9034, XL102UV, Sign Grade (SGC), 9604, Exell D (FR), and Margard (MR10, MRX FR) series solid extruded polycarbonate sheets are light-transmitting plastics complying with IBC Sections 803.1 and 2606.4, and are intended for use in interior applications as well as for use in exterior applications.

Lexan Thermoclear, Verolite, Thermoclick, and Lexapanel standing seam multi-wall sheets, as well as Lexan Corrugated are also intended for both interior and exterior applications.

3.0 DESCRIPTION

3.1 General:

The plastic sheets are extruded from polycarbonate resins and are furnished as transparent sheets.

The light-transmitting combustibility classifications in accordance with IBC Section 2606.4 for the plastic sheets are noted in Table 1.

3.2 Lexan 9030/9034, XL102UV, Sign Grade (SGC), 9604, Exell D (FR), and Margard series monolithic sheet products:

The Lexan monolithic polycarbonate sheets are available with smooth, matte or textured surface finishes and are available in a full range of transparent, translucent and opaque colors.

The sheet products are thermoplastic materials. Except for the Margard grades, all sheet products may be formed into shapes without changing physical or chemical properties. The sheet products are available in neat and/or ultraviolet stabilized formulations.

Sheet surfaces are covered with polyethylene masking for protection during shipping and handling.

3.3 Lexan Corrugated Sheet Products:

The Lexan Corrugated Sheet is a Class CC1 approved plastic extruded in a nominal 0.033-inch (0.84 mm) thickness and is protected with an integral ultraviolet-resistant surface.

3.4 Thermoclear, Verolite, Thermoclick, and Lexapanel standing seam Multi-walled Sheet Products:

The multi-wall sheet grades are available in many configurations from twin wall to 9X wall and thicknesses from 6 mm to 50 mm (0.24 inch to 1.97 inches). Thermoclick is a 40- and 50-mm-thick (1.57 and 1.97 inches) Thermoclear grade with a click edge profile and Lexapanel is a 20-mm-thick (0.79 inch) Thermoclear grade with a standing seam edge profile for roofing applications.

3.5 Surface-burning Characteristics:

When tested in accordance with ASTM E84, Lexan® Polycarbonate Sheet Products have an interior finish classification in accordance with IBC Section 803.1.1, as indicated in Table 1.

4.0 INSTALLATION

Use of the polycarbonate extruded products is limited to applications permitted by the IBC for light-transmitting plastics and interior finish. Sheets may be used in exterior applications.

When the intended use is for interior finish, installation of the polycarbonate extruded products must be in accordance with the IBC.

5.0 CONDITIONS OF USE

The plastic sheets described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The products must be manufactured, installed and identified in accordance with this report and the IBC.
- 5.2 End use of the products requires justification of compliance with appropriate code requirements, including structural and durability considerations.
- 5.3 Lexan XL102UV, Margard, Thermoclear, Verolite, Thermoclick, and Lexapanel standing seam products are recognized for use in skylights, exterior wall, and roof panel applications provided that the skylights, exterior wall, and roof panel products utilizing the products are recognized in a current ICC-ES evaluation report.
- 5.4 Lexan plastic sheets are manufactured in Mount Vernon, Indiana; Long Sault, Ontario Canada; BoZ Netherlands; Neustadt Austria; and Campinas Brazil, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Evaluation under the 2018, 2015 and 2012 IBC is based on reports of weathering tests (ultraviolet-light tests and comparison tension tests) in accordance with Section 4.1.2 of the ICC-ES Acceptance Criteria for Plastic Glazed Skylights (AC16), dated April 2017 (editorially revised December 2018).

- 6.2 Reports of tests in accordance with ASTM E84, ASTM D1929, ASTM D2843, and ASTM D635.
- 6.3 Evaluation under the 2009 and 2006 IBC is based on reports of weathering tests (ultraviolet-light tests and comparison tension tests) in accordance with Section A4.1.2 of the ICC-ES Acceptance Criteria for Plastic Glazed Skylights (AC16), dated April 2011 (editorially revised August 2013).
- 6.4 Quality documentation.

7.0 IDENTIFICATION

- 7.1 Each sheet or bundle of sheets will bear a label that includes the Sabic Innovative Plastics name and address, the product name, the product description, the evaluation report number (ESR-1333), the interior finish classification (Class A, B or C, as applicable) and the plastic classification (CC1 or CC2, as applicable).
- 7.2 The report holder’s contact information is the following:

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TABLE 1—LEXAN SHEET PRODUCTS

PRODUCT DESCRIPTION	INTERIOR FINISH CLASS (ASTM E84)	ASTM D2843 Smoke Density Rating of 75 or less	THICKNESS	PLASTIC CLASSIFICATION (IBC Section 2606.4)
Lexan 9030 / 9034 General Purpose	Class A	-	30 – 60 mils (0.76 – 1.52 mm)	CC2
Lexan 9030 / 9034 General Purpose	-	Yes	80 – 500 mils (2.03 – 12.7 mm)	CC1
Lexan XL102UV, Exell D	-	Yes	80 – 500 mils (2.03 – 12.7 mm)	CC1
Margard MR10	-	Yes	60 – 500 mils (1.52 – 12.7 mm)	CC1
Margard MRXFR	Class A	-	1 - 12 mm (40 - 470 mils)	CC1
Exell D (FR)	Class A	-	1 -12 mm (40 - 470 mils)	CC1
9604	Class A	-	125 mils (3.18 mm)	CC1
Sign Grade (SGC)	-	Yes	93 – 236 mils (2.36 – 6.00 mm)	CC1
Corrugated	Class A	-	33 mils (0.84 mm)	CC1
Thermoclear, Verolite multi-wall	Class A	-	6 – 50 mm (236 – 1969 mils)	CC1
Thermoclick multi-wall	Class A	-	40 mm, 50 mm (1575 mils 1969 mils)	CC1
Lexapanel standing seam multi-wall	Class A	-	20 mm (787 mils)	CC1

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REPORT HOLDER:**SABIC INNOVATIVE PLASTICS****EVALUATION SUBJECT:****LEXAN® POLYCARBONATE SHEET PRODUCTS****1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that Lexan® Polycarbonate Sheet Products, described in ICC-ES evaluation report ESR-1333, have also been evaluated for compliance with the code noted below.

Applicable code edition:

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

2.0 CONCLUSIONS**2.1 CBC:**

The Lexan® Polycarbonate Sheet Products, described in Sections 2.0 through 7.0 of the evaluation report ESR-1333, comply with CBC Chapter 26, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report.

2.1.1 OSHPD: The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA: The applicable DSA Sections of the CBC are beyond the scope of this supplement.

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Applicable code editions:

- 2020 and 2017 *Florida Building Code—Building*

2.0 CONCLUSIONS

The Lexan® Polycarbonate Sheet Products, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-1333, comply with the *Florida Building Code—Building*, provided the design requirements are determined in accordance with the *Florida Building Code—Building*. The installation requirements noted in ICC-ES evaluation report ESR-1333 for the 2018 and 2015 *International Building Code*® meet the requirements of the *Florida Building Code—Building*, with the following conditions:

Use of the Lexan® Polycarbonate Sheet Products for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* or the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

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