

# LEXAPANEL™ STANDING SEAM BUILDING SYSTEM

## PRODUCT DATASHEET

### DESCRIPTION

LEXAPANEL™ standing seam sheet is a patent pending modular system that allows you to choose the product width, thickness, color, rib geometry, and assembly method for construction of roofing or vertical fenestrations. LEXAPANEL grades are members of the LEXAN™ THERMOCLEAR™ sheet range of high quality, multi-wall polycarbonate glazing sheets extruded from LEXAN™ resin. The complete range offers remarkable impact strength, high light transmission, light weight, long term 2 side UV weather resistance and, due to the multi-wall construction, outstanding thermal insulation properties. LEXAPANEL grades are available in Clear (112), Opal White (WH7A092X), Bronze (515055), and Solar Control IR Green (GN8B038T). Additional colors may be available upon request.

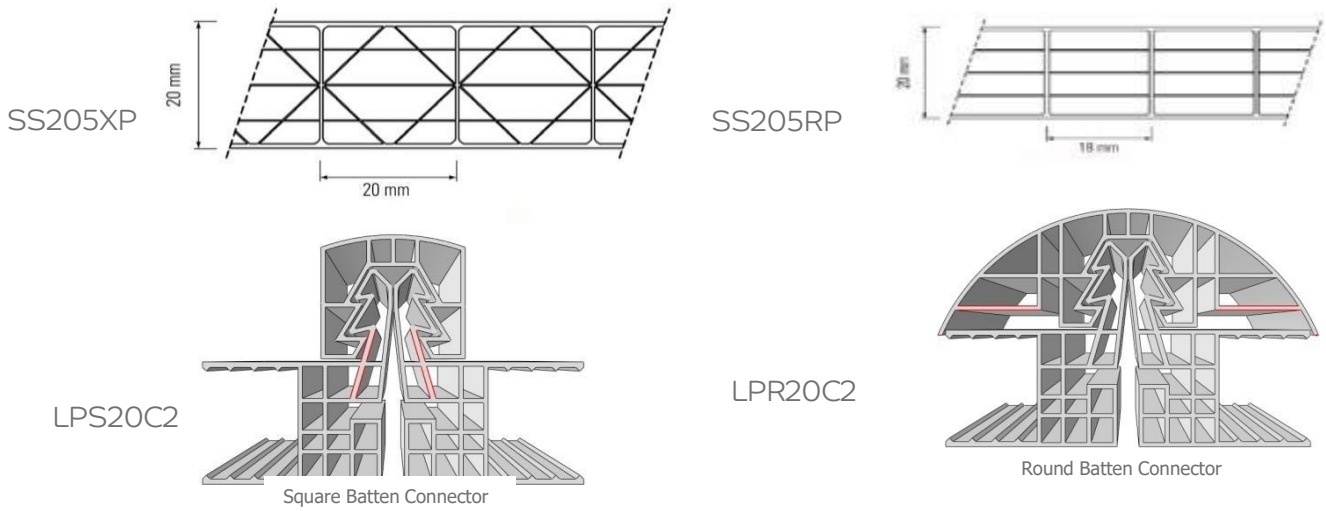
### TYPICAL PROPERTY VALUES

Grade-Color	Gauge (mm)	Weight (kg/m <sup>2</sup> )	Sound Red. value‡ (dB)	U-Value <sup>y</sup> (W/m <sup>2</sup> K)	Hail Impact Test <sup>z</sup> (m/sec)	LT <sup>v</sup> D65 (%LT)	TST <sup>#</sup> (%TST)	SHGC <sup>#</sup>	SC <sup>#</sup>	Flame rating ASTM E- 84 Class	Flame rating ASTM D-635
<b>SS205RP</b>											
Clear	20	3.3	22	1.77	>21	64	71	0.71	0.82	A	CC1
Opal White	20	3.3	22	1.77	>21	55	60	0.60	0.69	A	CC1
Bronze	20	3.3	22	1.77	>21					A	CC1
SC IR Green	20	3.3	22	1.77	>21	46	46	0.46	0.53	A	CC1
<b>SS205XP</b>											
Clear	20	3.2	22	1.69	>21	58	66	0.66	0.76	A	CC1
Opal White	20	3.2	22	1.69	>21	50	51	0.51	0.59	A	CC1
Bronze	20	3.2	22	1.69	>21	30	45	0.45	0.52	A	CC1
SC IR Green	20	3.2	22	1.69	>21					A	CC1
Grade-Color	Gauge (mm)	Weight (lb/ft <sup>2</sup> )	Sound Red. value‡ (dB)	U-Value <sup>y</sup> (BTU/hr ft <sup>2</sup> F)	Hail Impact Test <sup>z</sup> (ft/sec)	LT <sup>v</sup> D65 (%LT)	TST <sup>#</sup> (%TST)	SHGC <sup>#</sup>	SC <sup>#</sup>	Flame rating ASTM E- 84 Class	Flame rating ASTM D-635
<b>SS205RP</b>											
Clear	20	0.68	22	0.312	>21	64	71	0.71	0.82	A	CC1
Opal White	20	0.68	22	0.312	>21	55	60	0.60	0.69	A	CC1
Bronze	20	0.68	22	0.312	>21					A	CC1
SC IR Green	20	0.68	22	0.312	>21	46	46	0.46	0.53	A	CC1
<b>SS205XP</b>											
Clear	20	0.66	22	0.298	>21	58	66	0.66	0.76	A	CC1
Opal White	20	0.66	22	0.298	>21	50	51	0.51	0.59	A	CC1
Bronze	20	0.66	22	0.298	>21	30	45	0.45	0.52	A	CC1
SC IR Green	20	0.66	22	0.298	>21					A	CC1

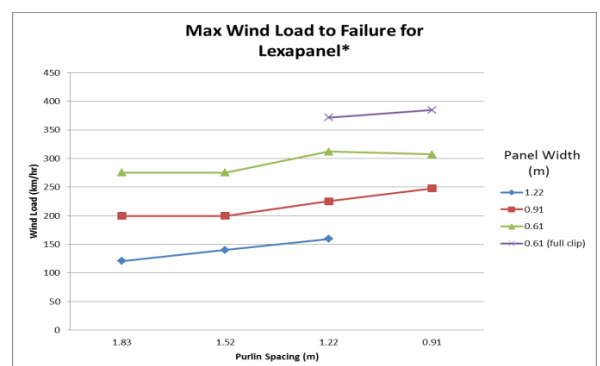
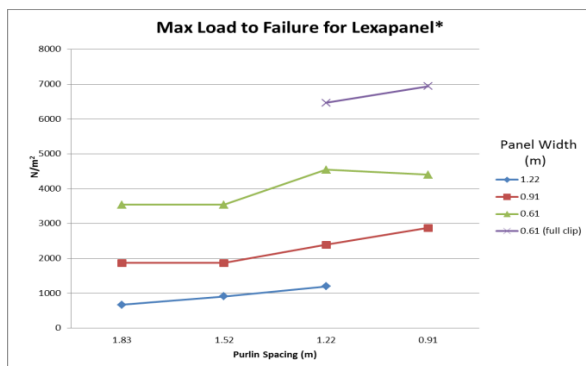
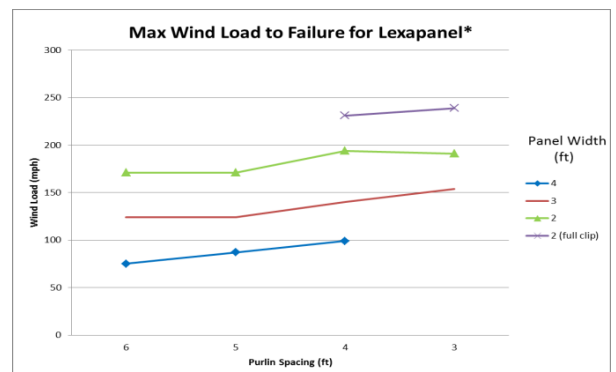
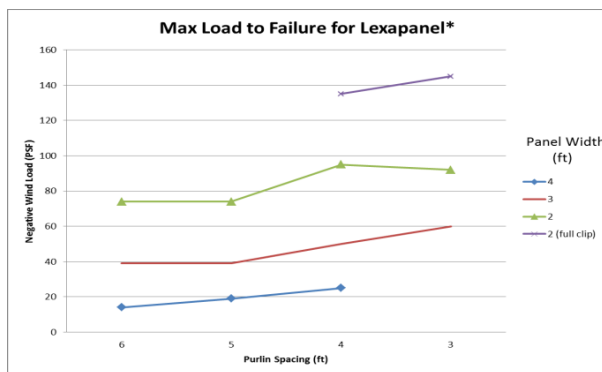
Color	Color number
Clear	112
Opal White	WH7A092X
Bronze	51986
SC IR Green	GN8B038T

- These property values have been derived from LEXAN™ resin data for the material used to produce this sheet product
- † Sound reduction values based on Sabic calculated values according to DIN 52210-75
- ‡ U-values based on Sabic calculated values according ISO 10077 (EN673)
- § Hail simulation test developed by TNO, the Netherlands, artificial hailstones of 20 mm diameter are shot at the sheet at min. speed of 21 m/sec.
- \* LT (Light Transmission) and TST (Total Solar Transmission) measurements according ISO 9050 (EN 410) on 600x600 mm samples
- § TST (Total Solar Transmission) divided by 100 equals Solar Heat Gain Coefficient (SHGC) or g-value.

## STRUCTURE AND NOMENCLATURE



## LOAD CURVES FOR LEXAPANEL SS205XP



## DEFINITIONS

### LIGHT TRANSMISSION D65 (%LT):

Percentage of the incident visible light that passes through the sheet.

### TOTAL SOLAR TRANSMISSION (%TST):

The percentage of incident Solar radiation transmitted by an object which includes the direct Solar Transmission plus the part of the Solar Absorption reradiated inward.

### SOLAR HEAT GAIN COEFFICIENT (SHGC):

or g-value is the total solar energy that enters the interior of a building, divided by 100.

### SHADING COEFFICIENT (SC):

The ratio of the total solar radiation transmitted by a given material to that transmitted by normal 3 mm glass, whose light transmission is 87%.  $SC = \%TST/87$ .

In addition to above grade-color combinations we have other optional sheet configurations available. Different outside as well as inside surface treatments are developed to give specific added value properties to the sheet.

### OUTER SURFACE: SELF-CLEANING

#### LEXAPANEL SS205nE Easy Clean Standing Seam Sheet

This is based on the world's first self-cleaning Lexan polycarbonate sheet. UV protected on both sides, LEXAPANEL Easy Clean standing seam sheet features a unique hydrophobic coating on the outside surface that reduces the surface tension of polycarbonate and increases the contact angle of water to the sheet. This causes larger droplets to form and wash away dirt, leaving the sheet almost spotless. Furthermore, it stays clean for longer, thereby reducing the frequency and the associated cost of cleaning.

### OUTER SURFACE: SUPERIOR WEATHERABILITY

#### LEXAPANEL SS205nX SunXP Standing Seam Sheet

In addition to the inherent properties of the LEXAPANEL range, this range of products offers UV protection on both sides, but with even higher resistance to UV radiation, yellowing and loss of light transmission. This exceptional material is awarded a unique 15 years limited written warranty.

### INNER SURFACE: ANTI-DRIP

#### LEXAPANEL SS205nD Drippard Standing Seam Sheet

LEXAPANEL Drippard sheet is suitable for any roof glazing application in which water droplets are unacceptable, such as commercial greenhouses where they could cause crop spoilage. This innovative product has UV protection on the outer surface and a specially developed hydrophilic coating on the inner surface. This coating reduces the formation of condensation droplets by increasing the surface tension of the sheet and decreasing the contact angle. As a consequence, a thin mist of water will form on the inner surface of the sheet, which will not drip and will not affect the excellent light transmission of the material.

### OUTER AND INNER SURFACE: SELF CLEANING AND ANTI-DRIP

#### LEXAPANEL SS205n1 Easy Clean and Drippard Standing Seam Sheet

LEXAPANEL Easy Clean/Drippard sheet combines the benefits of the Easy Clean coating on the outer surface of the sheet with the benefits of the Drippard coating on the inner surface of the sheet.

### OPTIONAL CONFIGURATIONS OVERVIEW AND GRADE NAMES:

Gauge (mm)	Weight (kg/m <sup>2</sup> )	Easy Clean	SunXP	Drippard	Easy Clean+ Drippard
20	3.3	SS205RE	SS205RX	SS205RD	SS205R1
20	3.2	SS205XE	SS205XX	SS205XD	SS205XE

Other combinations/ gauges/ colors are upon request.

## SOLAR TRANSMISSION

Transparent grades of LEXAPANEL have excellent light transmission. Although LEXAPANEL has less solar transmission versus traditional glass, we advise for buildings in hot climates or facing south, LEXAPANEL in an IR version (absorbing infra-red) which will substantially reduce the solar transmission by up to 70%.

## UV RESISTANCE

Despite transmitting visible light very well, LEXAPANEL standing seam sheet is almost opaque to radiation in the UV and farinfrac-red region. This useful shielding property can prevent discoloration of sensitive materials such as fabrics or other organic materials placed under or behind LEXAPANEL sheet glazing in, for example, a factory warehouse, museum or shopping center. The complete LEXAPANEL 2UV sheet range features a proprietary two sides surface treatment designed to protect the sheet against the degrading effects of ultra-violet radiation in natural sunlight. It has superior resistance to outdoor weathering.

## WARRANTY

SABIC offers a Ten (10) Year Limited Written Warranty on LEXAPANEL sheet covering discoloration, loss of light transmission, and loss of strength due to weathering.

## THERMAL INSULATION

The multi-wall structure of LEXAPANEL sheet offers significant advantages where thermal insulation is a major consideration. The hollow form provides excellent insulation characteristics with heat losses significantly lower than mono-wall glazing materials.

## FIRE TEST PERFORMANCE

LEXAPANEL sheet has good fire behavior characteristics, and receives a Class A rating per ASTM E-84 and a CCI rating per ASTM D-635 fire performance tests. More detailed information is available from your local SABIC Service Center or authorized dealer.

## SOUND INSULATION

The sound insulation characteristics of a material are largely pre-determined by its stiffness, mass and physical construction. According to DIN 52210-75, the maximum obtainable sound insulation is 23dB.

## IMPACT STRENGTH

LEXAPANEL sheet has outstanding impact performance over a wide temperature range, -40°C to 120°C, and also after prolonged outdoor exposure.

## HAIL SIMULATION

As roofing material LEXAPANEL sheet is subjected to the extremes of weather; like storms, hail, wind, snowfall and ice formation. Under these conditions, the product is virtually unbreakable and is able to accommodate the subsequent temperature change to sunny conditions without breaking or buckling. It should be noted that when glass and acrylic are tested their failure characteristics are typically brittle, whilst LEXAPANEL sheet shows a ductile deformation, e.g. small indentations. SABIC offers a Ten Year (10) Limited Written Warranty on LEXAPANEL sheet covering loss of strength or impact due to weathering.

## SAFETY

The processing guidance given in this documentation is given in good faith and the trust that in all cases you wear the correct Personal Protective Equipment (PPE), e.g. helmet, proper gloves, safety goggles etc. to safely fabricate, e.g. (but not limited to) sawing, cutting, forming our sheets and films. In all cases you should follow local and national regulations around the wear of PPE's prescribed or mandatory to perform these tasks in a safely manor.

## GENERAL GUIDELINES

### STORAGE

LEXAPANEL sheet should be stored and protected against atmospheric influences like sun, rain, etc. Care should be exercised when handling and transporting LEXAPANEL sheet in order to prevent scratches on the panel surface and damage to the panel edges.

### CLEANING

Small surfaces can be cleaned with luke warm water, using a soft sponge and a solution of mild soap. Do not use any corrosive materials or chemicals to clean LEXAPANEL sheets. Using any other cleaning agents than the recommended one must have the prior approval of SABIC in order to validate the LEXAPANEL sheet warranty.

### CHEMICAL RESISTANCE

Neoprene, EPT or EPDM rubbers with an approximate Shore Hardness of A65 are suggested. When using glazing compounds it is essential that the sealant system accepts a certain amount of movement to allow for thermal expansion, without loss of adhesion to the frame or sheet. Silicone sealants are generally recommended for use with LEXAPANEL sheet. It is strongly advised when using sealants to check compatibility before use.

### SAWING

LEXAPANEL sheet can be cut easily and accurately with standard workshop equipment. This includes common circular, hand and hacksaws. Saw dust should be blown out of the channels using clean compressed air. Circular saw blade should be fine-toothed panel blades. When hand or power hacksaws are used, the sheet should be clamped to the worktable to avoid undesirable vibration.

### THERMAL EXPANSION ALLOWANCE

Since LEXAPANEL sheet has a greater linear thermal expansion coefficient than that of traditional glazing materials, care should be taken to allow for free expansion of the sheet to prevent bowing and internal thermal stress. LEXAPANEL sheet is designed with a thermal expansion joint to accommodate thermal expansion in the width direction but thermal expansion allowance must be made for the length of the LEXAPANEL sheet. In general, thermal expansion of the sheet is approximately 3 mm per linear meter or 0.36 inch per 10 feet. Factory supplied clips allow the sheet to expand freely but thermal expansion must be accounted for with base and cap or other framing systems.



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