



## ICC-ES Evaluation Report

Ressued April 2022

### ESR-4508

This report is subject to renewal April 2023.

**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**

**Section: 07 46 33—Plastic Siding**

**REPORT HOLDER:**

**AZEK BUILDING PRODUCTS LLC**

**EVALUATION SUBJECT:**

**AZEK STRAIGHT AND STAGGERED EDGE SHINGLE SIDING AND AZEK BOARD AND BATTEN SIDING**

#### 1.0 EVALUATION SCOPE

**Compliance with the following codes:**

- 2021, 2018, 2015, 2012, and 2009 International Building Code® (IBC)
- 2021, 2018, 2015, 2012, and 2009 International Building Code® (IRC)

**Properties evaluated:**

- Exterior Weather Resistance
- Wind load Resistance
- Flame Spread
- Fire-resistance rated construction
- Ignition Resistance

#### 2.0 USES

The Azek Straight and Staggered Edge Shingle Siding and the Azek Board and Batten Siding products are used as exterior wall coverings installed over code-complying sheathing and water-resistive barriers required by the applicable code.

The siding products may be installed in Types I, II, III, IV and V construction under the IBC and on structures constructed in accordance with the IRC while subject to the limitations in this report and the applicable code. See Section 4.0.

#### 3.0 DESCRIPTION

##### 3.1 Siding:

The Azek Straight and Staggered Edge Shingle Siding sheets are sheets available in finishes simulating shingles. The sheets are manufactured from rigid cellular poly-vinyl-

chloride (PVC) material with a small-cell micro-structure. The sheets are nominal 1/4-inch thick, 16 inches wide, and 48 inches long.

The Azek Board and Batten Siding sheets are available in finishes simulating wood grain and when installed represent the board and batten pattern. The sheets are manufactured from rigid cellular poly-vinyl-chloride (PVC) material with a small-cell micro-structure. The sheets are nominal 1/2-inch-thick, 48 inches wide, and 144 inches long.

The Azek Straight and Staggered Edge Shingle Siding and the Azek Board and Batten Siding products have a flame-spread index of not more than 200 when tested in accordance with ASTM E84.

#### 4.0 DESIGN AND INSTALLATION

##### 4.1 General:

The siding must be installed in accordance with the manufacturer's published installation instructions, the applicable code and this report.

The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the instructions must be available at all times on the jobsite during installation. The instructions within this report must govern if there are any conflicts between the manufacturer's published installation instructions and this report.

##### 4.2 Wind Resistance:

The design wind pressures must be determined in accordance with the requirements of Chapter 16 of the IBC or R301.2.1 of the IRC, as applicable, and must not exceed the allowable wind pressures in Tables 1 and 2.

##### 4.3 Ignition Resistance:

The siding products can be used on the exterior side of exterior walls on buildings of Type I, II, III or IV construction. The siding products show no sustained flaming at a maximum tolerable level of incident radiant heat flux of 12.5 kW/m<sup>2</sup>, when tested in accordance with NFPA 268. The minimum fire separation distance required must be determined in accordance with 2021 and 2018 IBC Table 1405.1.1.1.2 [2015 and 2012 IBC Table 1406.2.1.1.2 (2009 IBC Table 1406.2.1.2)]. The siding must be installed in accordance with the applicable requirements in 2021, 2018 IBC Section 1405 (2015, 2012 and 2009 IBC 1406).

When the exterior wall is required to be fire-resistance-rated, the fire separation distance must be in accordance with 2021, 2018, 2015, 2012 and 2009 IBC Section 705.5.

**4.4 Fire-resistance:**

The siding products may be installed over code-complying, exterior, fire-resistance-rated bearing or nonbearing walls rated for exposure from the inside under the IBC without affecting the hourly rating of the walls.

**5.0 CONDITIONS OF USE**

The Azek Straight and Staggered Edge Shingle Siding and the Azek Board and Batten Siding described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Termite resistance is outside the scope of the report. Therefore, the siding must be installed a minimum 6 inches (152 mm) or more above grade.
- 5.2 The product must be installed over an approved solid backing material and an approved water-resistant barrier complying with the applicable requirements of the applicable code.
- 5.3 Wood studs and wood sheathing capacities are outside the scope of the report and shall be designed by a registered design professional.
- 5.4 Use of fasteners installed in treated wood (preservative or fire-retardant) is outside the scope of this report.
- 5.5 Corrosion resistance of fasteners is outside the scope of this report.
- 5.6 The siding is manufactured in Scranton, Pennsylvania, under a quality-control program with inspections by ICC-ES.

**6.0 EVIDENCE SUBMITTED**

- 6.1 Exterior weather resistance (UV, Freeze-thaw, and Water absorption) data per ICC-ES Acceptance Criteria for Rigid Cellular PVC Nonload-bearing Exterior Trim (AC227), dated December 2019.
- 6.2 Flame Spread data per ASTM E84.
- 6.3 Rate of burn, heat shrinkage, impact resistance, coefficient of linear expansion, and surface distortion data per ASTM D3679.
- 6.4 Wind resistance data is per ASTM D5206.
- 6.5 Fire-resistance-rated data per ASTM E119.
- 6.6 Ignition Resistance data per NFPA 268.

**7.0 IDENTIFICATION**

- 7.1 Each package of the Azek Straight and Staggered Edge Shingle Siding and the Azek Board and Batten Siding products described in this report are identified, with the manufacturer's name (AZEK Building Products) and address, the product designation, the manufacturing date code, and the evaluation report number (ESR-4508).
- 7.2 The report holder's contact information is the following:

**AZEK BUILDING PRODUCTS LLC**  
**894 PRAIRIE AVENUE**  
**WILMINGTON, OHIO 45177**  
**(866) 862-7832**  
[www.azekexteriors.com](http://www.azekexteriors.com)

**TABLE 1—AZEK STRAIGHT AND STAGGERED EDGE SHINGLE SIDING<sup>1</sup>  
 ALLOWABLE (ASD) DESIGN NEGATIVE (SUCTION) WIND LOAD (psf)**

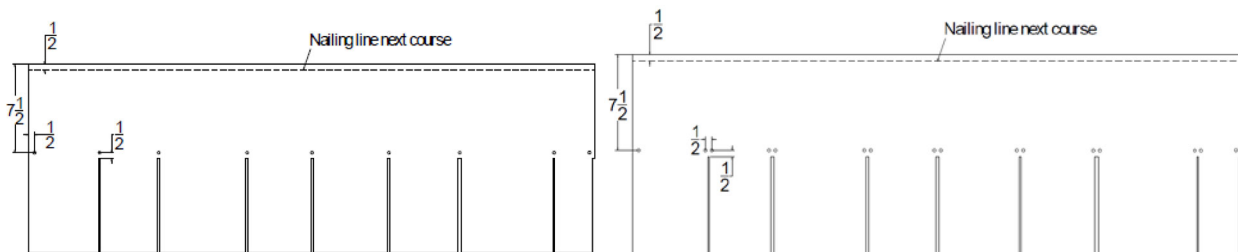
FASTENER <sup>2</sup>	FASTENER INSTALLATION			ALLOWABLE (ASD) DESIGN NEGATIVE (SUCTION) WIND LOAD (psf)
	END AND EDGE DISTANCE (inch)	VERTICAL SPACING (inches)	HORIZONTAL SPACING	
Single	1/2	7 1/2	Above each keyway, but no greater than 8 inches center.	135
Double <sup>3</sup>	1/2	7 1/2	Above each keyway, but no greater than 8 inches center.	180

For SI: 1 inch = 25.4 mm; 1psf = 6.89 kPa

<sup>1</sup>Based on installation over solid sheathing.

<sup>2</sup>Based on fasteners with a shank diameter of 0.08 inch and a head diameter of 0.210 inch. Other size of fasteners may be used provided an equal or greater bearing area is provided to support the siding. The fastener strength and withdrawal capacity when installed into the specific sheathing shall be checked and the allowable design loads shall be reduced, if applicable, but not increased.

<sup>3</sup>Double fasteners must be spaced 1/4 inch off each keyway (i.e. 1/2-inch space between fasteners).



**TABLE 2—AZEK BOARD AND BATTEN SIDING<sup>1</sup>**  
**ALLOWABLE (ASD) DESIGN NEGATIVE (SUCTION) WIND LOAD (psf)**

Product		FASTENER INSTALLATION				ALLOWABLE (ASD) NEGATIVE (SUCTION) WIND LOAD (psf)
		END AND EDGE DISTANCE (inch)	VERTICAL EDGE SPACING (inches)	VERTICAL FIELD SPACING (inches)	MAXIMUM HORIZONTAL SPACING (inches)	
Board Only	Installation of Boards <sup>2,4</sup>	1/2	8	12	16	55
Board and Batten	Installation of Boards <sup>2,4</sup>	1/2	12	12	48	145
	Installation of Battens <sup>3,4</sup>	1/2	12	12	16	

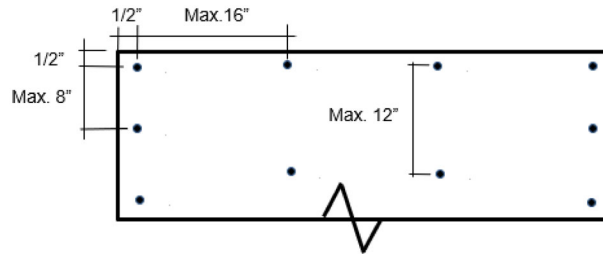
For SI: 1 inch = 25.4 mm; 1psf = 6.89 kPa

<sup>1</sup>Based on installation over solid sheathing.

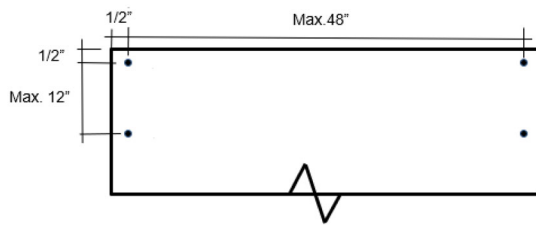
<sup>2</sup>Based on fasteners with a shank diameter of 0.092 inch and a head diameter of 0.266 inch.

<sup>3</sup>Based fasteners with a shank diameter of 0.190 inch and a head diameter of 0.260 inch.

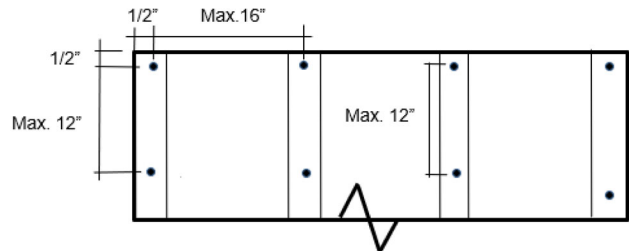
<sup>4</sup>Other size of fasteners may be used provided an equal or greater bearing area is provided to support the siding. In any case, the fastener strength and withdrawal capacity when installed into the specific sheathing shall be checked and the allowable design loads shall be reduced, if applicable, but not increased.



**Installation of Board Only**



**Installation of Board**



**Installation of Battens**

**TABLE 3—AZEK STRAIGHT AND STAGGERED EDGE SHINGLE SIDING  
ULTIMATE ( $V_{ult}$ ) DESIGN WIND SPEEDS (mph) <sup>1,2,3,4</sup>**

BUILDING HEIGHT (feet)	EXPOSURE		
	B	C	D
<b>Single Fasteners</b>			
15	200	182	165
20	200	177	161
25	200	172	158
30	200	169	156
40	192	164	152
50	186	160	149
60	181	157	146
<b>Double Fasteners</b>			
15	210	210	210
20	210	210	210
25	210	210	210
30	210	210	208
40	210	210	203
50	210	210	199
60	210	210	196

For **SI**: 1 foot = 0.3048 m; 1 mph = 1.61 kph

<sup>1</sup>Installation in accordance with Table 1.

<sup>2</sup>Fasteners: Ring Shank Nails with a 0.08" Shank Diameter, a 0.210" Head Diameter, and 1½ inch Long (minimum penetration = 0.42 inch)

<sup>3</sup>Wood Sheathing: 7/16 inch OSB with a minimum specific gravity of 0.62.

<sup>4</sup>ASCE 7-16/-10 design input values:  $G_{Cp}$  = -1.40;  $G_{Cpi}$  = 0.18;  $K_{zt}$  = 1.0; and  $K_d$  = 0.85

**TABLE 4—AZEK BOARD AND BATTEN SIDING  
ULTIMATE ( $V_{ult}$ ) DESIGN WIND SPEEDS (mph) <sup>1,2,3,4,5</sup>**

BUILDING HEIGHT (feet)	EXPOSURE		
	B	C	D
<b>Board Only</b>			
15	184	167	152
20	184	162	148
25	184	159	145
30	184	156	143
40	177	151	139
50	171	147	137
60	167	145	135
<b>Board and Batten</b>			
15	210	210	210
20	210	210	210
25	210	210	210
30	210	210	210
40	210	210	210
50	210	210	210
60	210	210	210

For **SI**: 1 foot = 0.3048 m; 1 mph = 1.61 kph

<sup>1</sup>Installation in accordance with Table 3.

<sup>2</sup>Fasteners:

Installation of Boards - Ring Shank Nails with a 0.08" Shank Diameter, a 0.210" Head Diameter, and 1-1/2- inch Long (minimum penetration into wood sheathing = 0.42 inch)

Installation of Battens – Wood Screws with a 0.90" Shank Diameter, a 0.260" Head Diameter, and 2" long (through wood sheathing and minimum penetration into wood studs = 1.25")

<sup>3</sup>Wood Sheathing: 7/16 inch OSB with a minimum specific gravity of 0.62.

<sup>4</sup>Wood Studs: 2x4 SPF with a minimum specific gravity of 0.42.

<sup>5</sup>ASCE 7-16/-10 design input values:  $G_{Cp}$  = -1.40;  $G_{Cpi}$  = 0.18;  $K_{zt}$  = 1.0; and  $K_d$  = 0.85.

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**REPORT HOLDER:**

AZEK BUILDING PRODUCTS LLC

**EVALUATION SUBJECT:**

AZEK STRAIGHT AND STAGGERED EDGE SHINGLE SIDING AND AZEK BOARD AND BATTEN SIDING

**1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that Azek Straight and Staggered Edge Shingle Siding and the Azek Board and Batten Siding products, described in ICC-ES evaluation report ESR-4508, have also been evaluated for compliance with the codes noted below.

**Applicable code editions:**

- 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.

- 2019 *California Residential Code* (CRC)

**2.0 CONCLUSIONS****2.1 CBC:**

The Azek Straight and Staggered Edge Shingle Siding and the Azek Board and Batten Siding products, described in Sections 2.0 through 7.0 of the evaluation report ESR-4508, comply with CBC Chapters 8 and 14, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 8 and 14, as applicable.

**2.1.1 OSHPD:**

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

**2.1.2 DSA:**

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

**2.2 CRC:**

The Azek Straight and Staggered Edge Shingle Siding and the Azek Board and Batten Siding products, described in Sections 2.0 through 7.0 of the evaluation report ESR-4508, comply with CRC Chapter 7, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Chapter 7, as applicable.

This supplement expires concurrently with the evaluation report, reissued April 2022.

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## 1.0 REPORT PURPOSE AND SCOPE

**Purpose:**

The purpose of this evaluation report supplement is to indicate that Azek Straight and Staggered Edge Shingles and Azek Board and Batten Siding sheets, described in ICC-ES evaluation report ESR-4508, has also been evaluated for compliance with the codes noted below.

**Applicable code editions:**

- 2020 *Florida Building Code—Building*
- 2020 *Florida Building Code—Residential*

## 2.0 CONCLUSIONS

The Azek Straight and Staggered Edge Shingles and Azek Board and Batten Siding sheets, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-4508, complies with the *Florida Building Code—Building* or the *Florida Building Code—Residential*. The design requirements shall be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-4508 for the 2018 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable, with the following conditions:

Use of the Azek Straight and Staggered Edge Shingles and Azek Board and Batten Siding sheets 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).

This supplement expires concurrently with the evaluation report, reissued April 2022.