



Code Compliance Research Report

CCRR-0101

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1.0 Subject

*AZEK Deck Boards (1 x 3½ and 1 x 5½) and
AZEK Porch Boards (1 x 3½)*

2.0 Research Scope

2.1 Building Codes:

- 2012 International Building Code (IBC)
- 2012 International Residential Code (IRC)

2.2 Properties:

- Structural Performance
- Durability
- Surface Burning

3.0 Description

3.1 General - *AZEK Decking* (Deck and Porch Boards) are intended for use as a walking surface on exterior decks, balconies, porches, and walkways, including stairs.

3.2 Materials and Processes - *AZEK Decking* is manufactured in two different material compositions.

3.2.1. *AZEK Mono Harvest® Deck Boards* are a solid mono-extruded composite utilizing cellular Poly Vinyl Chloride (PVC) and Agrifibre and produced in five colors: Ivory, Brownstone, Slate Gray, Clay, and White.

3.2.2. *AZEK Co-Ex Porch Boards* are a solid co-extruded cellular PVC with a polymer cap, semi-capped (capped on three sides) or fully capped in cross section, produced in five colors: Oyster®, Morado®, Silver Oak®, Slate Gray, and Brownstone.

3.2.3. *AZEK Co-Ex Harvest Deck Boards* are solid co-extruded cellular PVC with a polymer cap, semi-capped (capped on three sides) or fully capped in cross section, produced in four colors: Modena® and the Harvest Collection® colors Brownstone, Clay, and Slate Gray.

3.2.4. *AZEK ARBOR Collection®* and *TERRA Collection®* deck boards are a solid co-extruded cellular PVC with a polymer cap, semi-capped (capped on three sides) or fully capped in cross section, produced in nine colors as follows:

ARBOR Collection®: Acacia®, Cobre®, Morado®, Redland Rose®, and Silver Oak®.

TERRA Collection®: Kona®, Fawn®, Tahoe® and Sedona®.

3.3 The walking surface is embossed with a simulated wood grain.

3.4 *AZEK 1x3½ and 1x5½ Deck Boards* have a rectangular profile 1" thick and either 3.5" or 5.5" wide respectively. Edges are rounded with a 1/8" radius. See Figure 1 and 2.

3.5 *AZEK 1x3½ Mono-Extruded Porch Boards* measure 1" thick and 3½" exposure width (3¾" overall width) and are manufactured in two colors: Brownstone and Slate Gray. The edges are machined with a tongue and groove pattern. See Figure 1.

4.0 Performance Characteristics

4.1 *AZEK Deck Boards* and *Porch Boards* are rated for a uniform live load of 100 lbs/ft² when installed on support framing spaced at 16" on center. This live load rating also applies to deck boards and porch boards installed diagonal to the support framing (45° max.) with 12" on center maximum joist spacing.

4.2 *AZEK 1x5½ Deck Boards* used as stair treads shall be installed on a minimum of a two-span condition and are rated for the code-prescribed concentrated load equal to 300 lbs when installed in accordance with Figures 3, 4 or 5.

4.3 The use of *AZEK 1x3½ Deck Boards* as a stair tread is not within the scope of this report.

4.4 *AZEK 1x3½ Porch Boards* used as stair treads shall be installed on a minimum of a two-span condition and are rated for the code-prescribed concentrated load equal to 300 lbs when installed at a maximum of 11 inches on center in accordance with Figure 3.

4.5 *AZEK Decking* has wind uplift resistance ratings as indicated in Table 1 when installed on support framing spaced at 16 inches on center.

4.6 AZEK Decking has a flame spread index as indicated in Table 1 when tested according to ASTM E 84. The referenced criterion, AC174, requires a flame spread index not exceeding 200.

4.7 AZEK Decking is deemed equivalent to preservative treated or naturally durable wood for resistance to weathering effects, attack from termites and fungus decay.

4.8 AZEK Decking structural performance has been demonstrated for a temperature range of -20° F to 125° F.

5.0 Installation

Installation shall be in accordance with the manufacturer's installation instructions and this report. Where differences occur between this report and the manufacturer's installation instructions, this report shall govern.

5.1 AZEK Deck Boards and Porch Boards shall be installed with fastening as indicated in Table 1.

5.2 AZEK 1x3½ Porch Boards used as stair treads shall be installed as shown in Figure 3.

5.3 AZEK 1x5½ Deck Boards used as stair treads shall be installed as shown in Figures 3, 4, and 5.

5.4 AZEK 1x3½ Deck Boards shall not be used as a stair tread

5.5 AZEK Deck Boards and Porch Boards may be installed diagonal to support framing up to maximum of 45° with 12" o.c. maximum joist spacing.

6.0 Supporting Evidence

6.1 Manufacturer's drawings and installation instructions.

6.2 Reports of testing demonstrating compliance with ICC-ES AC174, Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails), approved January 2012.

6.3 Testing in accordance with ICC-ES AC174 is deemed equivalent to ASTM D 7032 for compliance with the 2012 IRC.

6.4 Quality control manual in accordance with ICC-ES AC10, Acceptance Criteria for Quality Control Documents, dated January 2014.

7.0 Conditions of Use

The AZEK Decking applications identified in this report are deemed to comply with the intent of the provisions of the referenced building codes subject to the following conditions.

7.1 AZEK Decking is limited to exterior use in Type V-B (5B) construction, dwellings regulated by the IRC, and Types II-B and III-B construction where combustible construction is permitted in accordance with IBC Section 1406.3.

7.2 The wind uplift resistance rating recognized in this report is based on attachment to treated Southern Pine framing (specific gravity, G=0.55). Installation on wood framing with a lesser specific gravity may result in a lower wind uplift rating.

7.3 AZEK Decking shall be fastened directly to supporting construction. Conventional wood supporting structure is not within the scope of this report and is subject to the evaluation and approval by the building official. Design and construction of supporting structure must satisfy the design load requirements of Chapter 16 of the IBC.

7.4 Where required by the building official, engineering calculations and details shall be provided. The calculations shall verify that the anchorage complies with the building code for the type of framing and condition of the supporting construction.

7.5 The compatibility of all fasteners with supporting structure, including chemically treated wood, is not within the scope of this report and subject to approval by the code official.

7.6 AZEK Deck Boards and Porch Boards are manufactured in Foley, AL and Moosic, PA in accordance with the manufacturer's approved quality control system with inspections by Architectural Testing (IAS AA-676).

Exceptions: The capped, cellular PVC deck boards are manufactured in Foley, AL only. The semi-capped co-extruded porch boards are manufactured in Moosic, PA only

8.0 Identification

AZEK Decking produced in accordance with this report shall be identified with labeling on the individual deck boards that includes the following information:

8.1 Name and/or trademark of manufacturer

8.2 The following statement: "Complies with ASTM D7032. See CCRR-0101 at www.ati-es.com for uses and performance levels."

8.3 The Architectural Testing Code Compliance Research Report mark and number (CCRR-0101)

9.0 Code Compliance Research Report Use

9.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

9.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product or manufacturer by Architectural Testing.

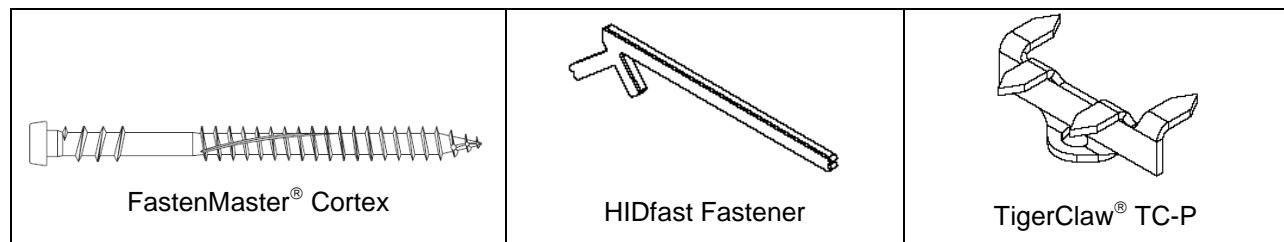
9.3 Reference to the Architectural Testing internet web site address at www.ati-es.com is recommended to ascertain the current version and status of this report.

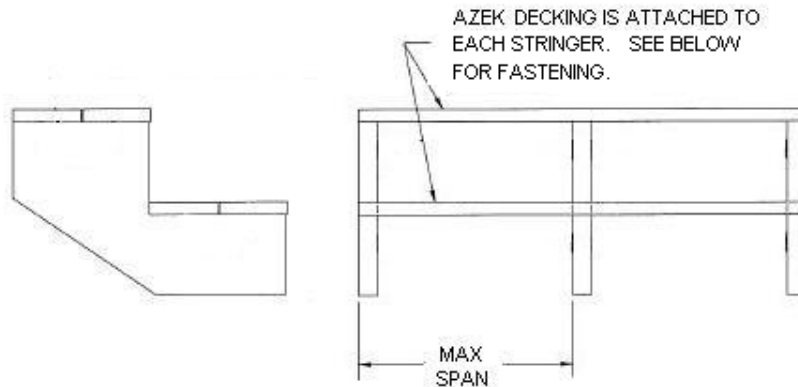
Table 1 – Flame Spread Indexes

AZEK Decking	Flame Spread Index
<i>Mono Harvest[®] Deck Boards and Porch Boards (mono-extruded)</i>	40
<i>Co-Ex Harvest[®] Deck Boards, ARBOR Collection[™] and TERRA Collection[™] (semi-capped or fully capped, co-extruded)</i>	50 (Capped Surface)
	20 (Non-Capped Surface)
<i>Co-Ex Porch Boards (co-extruded)</i>	25 (Semi-Capped Surface)

Table 2 - Fastening Schedule and Wind Rating

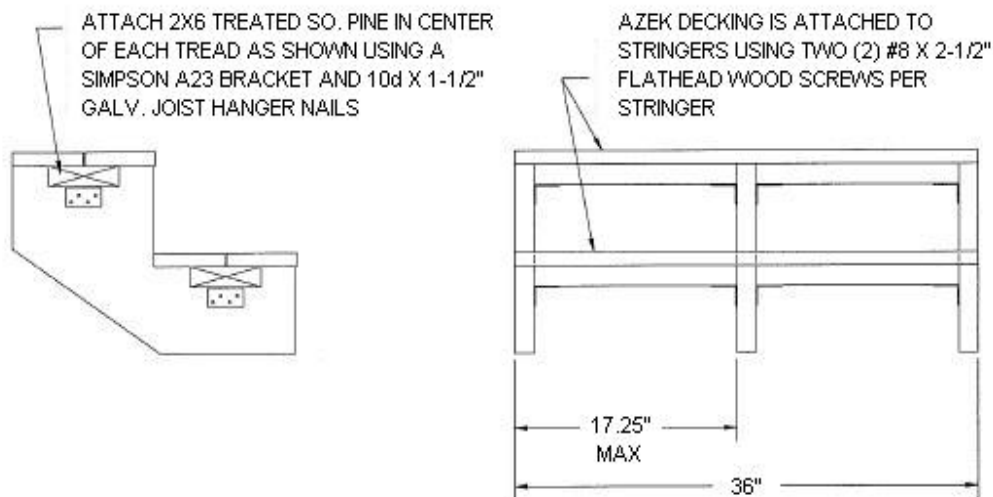
Board Type	Fastening	Wind Uplift Resistance
1" x 5 1/2" and 1" x 3 1/2" AZEK Mono Harvest® Deck Boards	(2)#7 x 2 1/4" SS trim-head screws into each joist	160 psf
	FastenMaster® Cortex FMCTX3 (3") concealed fastener: (2) screws each joist	234 psf
	HIDfast HF 2.5 hidden fastener with (1) #10 x 2 1/2" deck screw each joist for the starter (edge) board.	105 psf
	TigerClaw® TC-P hidden fastener with #7 x 1 5/8" screws. Starter board (edge) face-fastened with (1) #10 x 2 1/2" deck screw each joist.	177 psf
1" x 3 1/2" T&G Porch Board (Mono-Extruded)	(1) #7 x 2" trim-head screw @ 30° - 45° through root of tongue into each joist with (1) screw face-fastened each joist for the starter board (edge).	240 psf
1" x 3 1/2" T&G Porch Board (Co-Extruded)	(1) #8 x 2" trim-head screw @ 30° - 45° through root of tongue into each joist with (1) screw face-fastened each joist for the starter board (edge).	225 psf
1" x 3 1/2" T&G Porch Board (Co-Extruded)	16 GA x 2" Simpson Strong-Tie L Series Stainless Steel Flooring Cleats 16.0 Span	63 psf
1" x 5 1/2" Capped Cellular PVC Deck Board: Co-Ex Harvest®, ARBOR Collection®, and TERRA Collection	(2) #8 x 2 1/2" SS trim-head Headcote® screw into each joist	234 psf
	(2) #10 x 2 1/2" SS flat-head screw into each joist	234 psf
	OMG FastenMaster® Cortex concealed fastener: (2) #8 x 3" screws each joist	234 psf
	HIDfast HF 3 hidden fastener with (1) #8 x 2 1/2" trim-head screw each joist for the starter (edge) board.	147 psf
	TigerClaw® TC-P hidden fastener with #7 x 1 5/8" screws. Starter board (edge) face-fastened with (1) #8 x 2 1/2" deck screw each joist.	183 psf





BOARD TYPE	MAX. SPAN	FASTENING
1X5½ Deck Board	9 Inches	Two #7 x 2¼" deck screws
1x3¾ Porch Board	11 Inches	One #7 x 2" trim head screw through tongue. End boards receive an extra screw through face.

**Figure 4 - Stair Tread Installation with no additional support
(Minimum tread length is 36")**



**Figure 5 - Alternate 1 X 5½ Stair Tread Installation
(2X6 additional support – Max span = 17.25")**

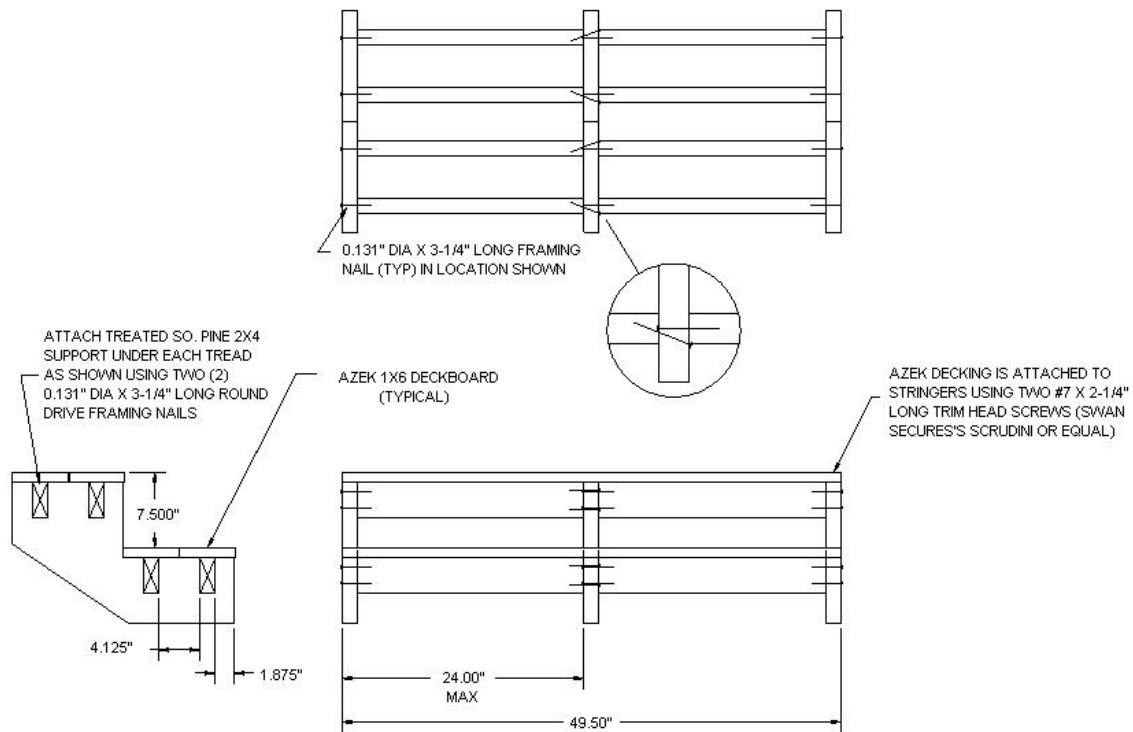


Figure 6 – Alternate 1 X 5½ Stair Tread Installation (2X4 additional supports – Max span = 24.0")