



MoistureShield, Inc. Deck Boards and Stair Treads

Initial Acceptance Date: June 19, 2017

Expiration Date: June 19, 2022

Revision Date: June 25, 2020

TYPE OF ACCEPTANCE:

Product Material – Wood and Plastics

CSI Specification Division Section 065000 (Structural Plastics) and 065300 (Plastic Decking)

MANUFACTURER IDENTIFICATION:

MoistureShield, Inc.
914 North Jefferson Street
Springdale, AR 72764
1-479-756-7400
www.moistureshield.com

RESEARCH REPORT SUBJECT:

MoistureShield, Inc., Deck Boards and Stair Treads for Exterior Applications Installation on construction complying with the International Residential Code® (IRC) or with the International Building Code® (IBC).

DESCRIPTION OF BUILDING COMPONENTS:

A. Deck Boards

MoistureShield, Inc., deck boards are wood thermoplastic composite lumber product consisting of plastic, wood filler plus additives and color. The product specifications are listed in the approved quality control manual. MoistureShield, Inc., deck board components are manufactured in several colors by the mono-extrusion process (except for the **MoistureShield® Pro**, **MoistureShield Refine**, **MoistureShield Infuse** and **Elevate™** deck boards that are co-extruded). **MoistureShield Pro**, **Lifecycle® Basics**, **MoistureShield Infuse**, **MoistureShield Refine**, **ChoiceDek®** and **Elevate** deck boards can have capping covering three sides of the deck board.

1. Deck Boards: Solid

- (a) The **MoistureShield** deck board is rectangular (1" x 5") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **ModernView™**, **MoistureShield Vision** and **Essential Collection®**.
- (b) The **MoistureShield** deck board is rectangular (1" x 5.4") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **Vantage Collection®**, **Vantage Collection FR**, **Lifecycle Vantage**, **LifeCycle MoistureShield** and **MoistureShield Vision**.
- (c) The **MoistureShield** deck board is rectangular (1.10" x 5.4") in shape, has rounded edges, is completely solid. See attached drawing in Table 1. This deck board is also named **MoistureShield FR**, **Elite Collection®**, and **ChoiceDek FR**.

- (d) The **MoistureShield** deck board is rectangular (1.5" x 3.5") in shape, has rounded edges and is completely solid. This deck board is also used as a guardrail profile. See attached drawing in Table 1. This deck board is also named **ChoiceDek, ChoiceDek Foundations, ChoiceDek Premium, MoistureShield Vision, MoistureShield Vantage Collection®, MoistureShield Elite** and **Lifecycle® Basics**.
- (e) The **MoistureShield** deck board is rectangular (1.4" x 5.4") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **Lifecycle Basics, ChoiceDek, MoistureShield Vision, MoistureShield Vantage Collection, ChoiceDek Premium, ChoiceDek FR, MoistureShield Elite** and **MoistureShield FR**.
- (f) The **MoistureShield** deck board is rectangular (1.4" x 7.25") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **ChoiceDek, ChoiceDek Premium, MoistureShield Vision, MoistureShield Vantage Collection, MoistureShield Elite** and **Lifecycle Basics**.
- (g) The **MoistureShield** deck board is rectangular (1" x 5.4") in shape, has rounded edges, is completely solid and has a proprietary polymer capstock that covers three sides of the deck board. See attached drawing in Table 1. This deck board is also named **ChoiceDek, MoistureShield Refine, MoistureShield Infuse** and **MoistureShield Pro**.
- (h) The **MoistureShield** deck board is rectangular (0.83" x 5.4") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **ModernView, MoistureShield Vision, LifeCycle by MoistureShield** and **LifeCycle Elite by MoistureShield**.

2. Deck Boards: Solid with Lobes (Oval and Square)

- (a) The **MoistureShield** deck board with three oval lobes on the bottom is rectangular (1' x 5") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **MoistureShield Vision, LifeCycle Premium, MoistureShield Basics** and **LifeCycle Basics**.
- (b) The **ChoiceDek** deck board with three oval lobes is rectangular (1" x 5.4") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **ChoiceDek Foundations**, and **ChoiceDek Premium**.
- (c) The **ChoiceDek®** deck board with three oval lobes is rectangular (1.175" x 5.4") in shape, has rounded edges and is completely solid. See attached drawing in Table 1.
- (d) The **MoistureShield** deck board with three square lobes is rectangular (1.175" x 5.4") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **Lifecycle Basics**.
- (e) The **MoistureShield** deck board with three square lobes is rectangular (1.5" x 5.5") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **Lifecycle Basics**.
- (f) The **MoistureShield** deck board with seven oval lobes is rectangular (0.83" x 5.4") in shape, has rounded edges and is completely solid. See attached drawing in Table 1. This deck board is also named **ModernView, MoistureShield Vision, LifeCycle by MoistureShield** and **LifeCycle Euro by MoistureShield**.
- (g) The **Elevate** deck board with four oval lobes is rectangular (1" x 5.4") in shape, has rounded edges and is completely solid. This deck board is also named **MoistureShield Elevate**. See attached drawing in Table 1.

3. Deck Boards: Solid with Side Grooves

- (a) The **MoistureShield** deck board is rectangular (1" x 5.0") in shape, has rounded edges, is completely solid and has a groove on each side of the board. See attached drawing in Table 1. This deck board is also named **MoistureShield Vision, ModernView** and **Essential Collection**.

- (b) The **MoistureShield** deck board is rectangular (1" x 5.4") in shape, has rounded edges, is completely solid and has a groove on each side of the board. See attached drawing in Table 1. This deck board is also named **MoistureShield Vision**, **Vantage Collection** and **MoistureShield Infuse**.
- (c) The **MoistureShield** deck board is rectangular (1" x 5.4") in shape, has rounded edges, is completely solid, has a groove on each side of the board and has a proprietary polymer capstock on the top of the board. See attached drawing in Table 1. This deck board is also named **MoistureShield Pro**, **MoistureShield Refine** and **ChoiceDek**.
- (d) The **MoistureShield** deck board is rectangular (0.83" x 5.4") in shape, has rounded edges, is completely solid and has a groove on each side of the board. See attached drawing in Table 1. This deck board is also named **ModernView**, **MoistureShield Vision**, **LifeCycle by MoistureShield** and **LifeCycle Elite by MoistureShield**.
- 4. Deck Boards: Solid with Side Grooves and Lobes (Oval and Square)**
- (a) The **MoistureShield** deck board is rectangular (1" x 5.0") in shape, has rounded edges, is completely solid, has three lobes on the bottom and has a groove on each side of the board. See attached drawing in Table 1. This deck board is also named **ModernView**, **MoistureShield Vision** and **Essential Collection**.
- (b) The **MoistureShield** deck board is rectangular (1" x 5.4") in shape, has rounded edges, is completely solid, has three lobes on the bottom and has a groove on each side of the board. See attached drawing in Table 1. This deck board is also named **MoistureShield Vision**, **ChoiceDek**, **ChoiceDek Foundations**, **CD Premium**, and **Lifecycle Basics**.
- (c) The **MoistureShield** deck board is rectangular (0.83" x 5.4") in shape, has rounded edges, is completely solid, has seven lobes on the bottom and has a groove on each side of the board. See attached drawing in Table 1. This deck board is also named **ModernView**, **MoistureShield Vision**, **LifeCycle by MoistureShield** and **LifeCycle Euro by MoistureShield**.
- (d) The **Elevate** deck board with four oval lobes is rectangular (1" x 5.4") in shape, has rounded edges and is completely solid and has a groove on each side of the board. This deck board is also named **MoistureShield Elevate**. See attached drawing in Table 1.
- 5.** MoistureShield, Inc., deck boards can be used as stair treads and must be installed perpendicular to the supporting construction. Deck boards and stair treads must be installed over at least two spans. The decking and stair treads must be installed with a minimum gap of 3/16 inch between parallel boards for drainage and decking must be installed with a minimum clearance of 1/8-inch at each end of the board. See manufacturer's installation instructions noted item 6 below.
- 6.** For additional decking installation details see manufacturer's published installation instructions as follows: MoistureShield decking dated June 2015, MoistureShield decking clips dated April 2015, ChoiceDek decking dated May 2013 and LifeCycle decking dated June 2011.

APPLICABLE CODES:

- *International Building Code (IBC)* - 2006, 2009, 2012, 2015, and 2018 editions
- *International Residential Code (IRC)* - 2006, 2009, 2012, 2015, and 2018 editions

APPLICABLE CHARACTERISTICS REVIEWED:

B. Deck Board(s) – See Section A - 1 thru 4 above for list of all the names and descriptions of the deck boards reviewed.

1. Deck Board: Structural Performance

- (a) The deck boards have been reviewed for uniform load, maximum span and deck board direction when installed on support framing members. See attached Table 1.
- (b) The deck boards have been reviewed for wind uplift resistance and have an uplift load rating when installed as indicated in Table 1 in this Report.
- (c) The deck boards used as stair treads meet the code prescribed load requirements including the concentrated load of 300 lbf when installed in accordance with the manufacturers' installation instructions and Table 1 in this Report.

2. Deck Board: Fastening

- (a) The deck boards must be fastened to the structural supporting members in accordance with the manufacturer's installation instructions and Table 1 of this Report. When manufacturer's installation instructions differ from this Report, this Report governs.
- (b) When deck boards are used as stair treads, they must be installed in accordance with the manufacturer's installation instructions and Table 1 in this Report. When the manufacturer's installation instructions differ from this Report, this Report governs. Review of the structural design for code compliance of supporting members has not been evaluated and is not a part of this research Report.

3. Deck Board Durability: Temperature

- (a) The deck boards have been reviewed for the temperature range of -20 to 125 °F (-29 to 52 °C).

4. Deck Board Flame Spread Index:

- (a) The flame spread rating for the deck boards described in this Report was less than 200 when tested with ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*.

5. Deck Board Decay Resistance:

- (a) The deck boards reviewed for this Report have been deemed comparable to naturally durable wood for resistance to fungal decay.

6. Deck Board Termite Resistance:

- (a) The deck boards reviewed for this Report have been deemed comparable to preservative treated wood for resistance to termite attack.

7. UV Testing:

- (a) The UV testing was conducted, and an appropriate adjustment factor was applied, in accordance with ASTM D7032 *Standard for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails)*.

APPLICABLE USES:

MoistureShield, Inc., deck boards evaluated in this Report are limited to exterior applications for balconies, porches, stair treads, walking surfaces and decks.

LIMITATIONS OF ACCEPTANCE:

MoistureShield, Inc., deck boards described in this Report comply with those codes listed in the Applicable Codes section above and are subject to the following conditions:

1. The deck board products must be limited to Type V-B (IBC) and residential construction in accordance with the IRC for exterior use as deck boards for balconies, porches, decks and stair treads.
2. Installation of the deck boards must comply with this Report, the manufacturer's published installation instructions (see section A-6 above), and the applicable codes. When deck board manufacturer's installation instructions differ from this Report, this Report governs.
3. The fasteners described in this Report have been evaluated for the installation of the MoistureShield, Inc., deck boards only. Compatibility of the fasteners to the treated supporting construction has not been evaluated.
4. MoistureShield, Inc., deck boards indicated in the Report must be fastened to the supporting construction as indicated in the manufacturer's installation manual and outlined in this Report. When deck board manufacturer's fastening instructions differ from this Report, this Report governs.
5. When required, the structural deck board layout must be designed by a professional and submitted to the authority having jurisdiction for final acceptance.
6. MoistureShield, Inc., deck boards have not been evaluated as a member of a fire-resistance-rated assembly.
7. MoistureShield, Inc., has a third-party inspection program provided by PFS TECO.

DOCUMENTATION SUBMITTED:

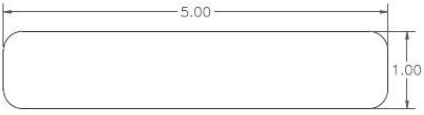
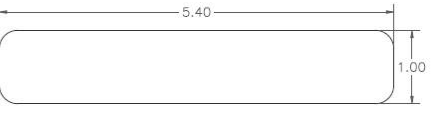
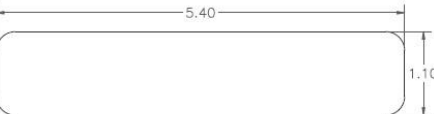
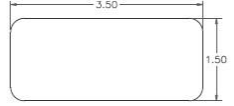
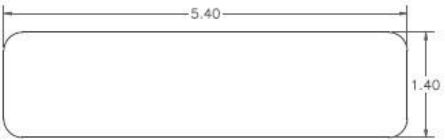
Submitted data was provided in accordance with PFS TECO 1601 (Quality control manual, Specifications, Manufacturer's installation instructions, Test data and Descriptive information). The tests were done in accordance with ICC-ES AC174, *Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails)*.

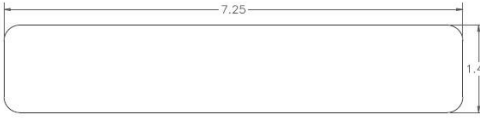
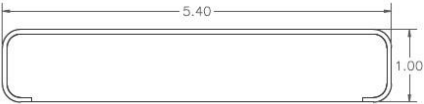
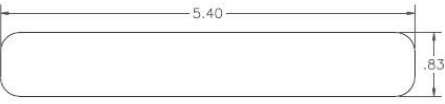
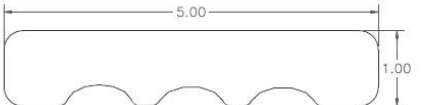
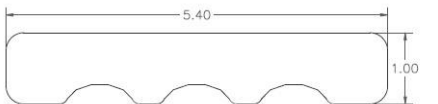
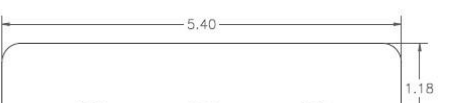
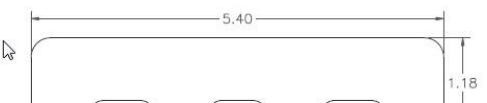
PRODUCT IDENTIFICATION:

MoistureShield, Inc., deck boards evaluated in this Research Report must be identified with a label, stamp, or laser imprint on every deck board. The information that is required is as follows: MoistureShield, Inc., product identification, compliance to ASTM D7032 including the maximum deck board span (inches on center spacing of supports) and loading (psf), the Research Report number (RR 0110), and PFS Certification Mark for use in the United States (see image below). Deck boards without this information are not covered under this Report.



Table 1: Span Table and Fastening Schedule for Deck Boards

Product Trade Name	Deck Board Profile	Nominal Size	Shape	Maximum Span Rating (in) for Allowable Load (psf)			Fastening Schedule ¹ and Uplift Values	Maximum Stair Tread Span (in)
				100	150	200		
A.1. Deck Boards: Solid								
MoistureShield, ModernView, MoistureShield Vision, Essential Collection		1x5	Solid	16	12	10	114 lbf per #7x2-1/4" SS Deck Screw	9
MoistureShield, Vantage Collection, Vantage Collection FR, LifecycleVantage, LifeCycleMoistureShield, MoistureShield Vision		1x5-1/2	Solid	16	12	10	114 lbf per #7x2-1/4" SS Deck Screw	9
MoistureShield, MoistureShield FR, EliteCollection, ChoiceDek FR		5/4x6	Solid	18	16	12	114 lbf per #7x2-1/4" SS Deck Screw	12
MoistureShield, ChoiceDek, ChoiceDek Foundations, ChoiceDekPremium, MoistureShield Vision, MoistureShield Vantage Collection, MoistureShield Elite, Lifecycle Basics		2x4	Solid	20	18	16	114 lbf per #7x2-1/4" SS Deck Screw	14
MoistureShield, Lifecycle Basics, ChoiceDek, MoistureShield Vision, MoistureShield Vantage Collection, ChoiceDek Premium, ChoiceDek FR, MoistureShield Elite, MoistureShield FR		2x6	Solid	24	18	16	114 lbf per #7x2-1/4" SS Deck Screw	16

MoistureShield, ChoiceDek, ChoiceDek Premium, MoistureShield Vision, MoistureShield Vantage Collection, MoistureShield Elite, Lifecycle Basics		2x8	Solid	24	18	16	114 lbf per #7x2-1/4" SS Deck Screw	18
MoistureShield, ChoiceDek, MoistureShield Refine, MoistureShield Infuse, MoistureShield Pro		1x5-1/2	Solid	16	12	10	114 lbf per #7x2-1/4" SS Deck Screw	9
MoistureShield, ModernView, MoistureShield Vision, LifeCycle by MoistureShield, LifeCycle Elite by MoistureShield		7/8x5-1/2	Solid	16	12	10	114 lbf per #7x2-1/4" SS Deck Screw	8
A.2. Deck Boards: Solid with Lobes (Oval and Square)								
MoistureShield, MoistureShield Vision, LifeCycle Premium, MoistureShield Basics, LifeCycle Basics		1x5	Oval Fluted	16	12	10	114 lbf per #7x2-1/4" SS Deck Screw	9
ChoiceDek, ChoiceDek Foundations, ChoiceDek Premium		1x5-1/2	Oval Fluted	16	12	10	114 lbf per #7x2-1/4" SS Deck Screw	9
ChoiceDek		5/4x6	Oval Fluted	18	16	12	114 lbf per #7x2-1/4" SS Deck Screw	12
MoistureShield, Lifecycle Basics		5/4x6	Square Fluted	18	16	12	114 lbf per #7x2-1/4" SS Deck Screw	12

MoistureShield, Lifecycle Basics		2x6	Square Fluted	20	18	16	114 lbf per #7x2-1/4" SS Deck Screw	16
MoistureShield, ModernView, MoistureShield Vision, LifeCycle by MoistureShield, LifeCycle Euro by MoistureShield		7/8x5-1/2	Oval Fluted	14	12	10	114 lbf per #7x2-1/4" SS Deck Screw	8
Elevate, MoistureShield Elevate		1x5-1/2	Oval Fluted	16	12	10	114 lbf per #7x2-1/4" SS Deck Screw	8
A.3. Deck Boards: Solid with Side Grooves								
MoistureShield, ModernView, MoistureShield Vision, Essential Collection		1x5	Grooved	16	12	10	100 psf with MoistureShield Deck Clip hidden fastening system	9
MoistureShield, MoistureShield Vision, Vantage Collection, MoistureShield Infuse		1x5-1/2	Grooved	16	12	10	100 psf with MoistureShield Deck Clip hidden fastening system	9
MoistureShield, MoistureShield Pro, MoistureShield Refine, ChoiceDek		1x5-1/2	Grooved	16	12	10	100 psf with MoistureShield Deck Clip hidden fastening system	9
MoistureShield, ModernView, MoistureShield Vision, LifeCycle by MoistureShield, LifeCycle Elite by MoistureShield		7/8x5-1/2	Grooved	16	12	10	100 psf with MoistureShield Deck Clip hidden fastening system	8

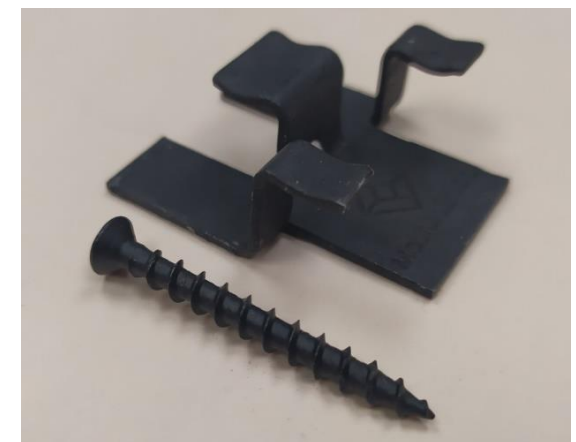
A.4. Deck Boards: Solid with Side Grooves and Lobes (Oval and Square)								
MoistureShield, ModernView, MoistureShield Vision, Essential Collection		1x5	Oval Fluted–Grooved	16	12	10	100 psf with MoistureShield Deck Clip hidden fastening system	9
MoistureShield, MoistureShield Vision, ChoiceDek, ChoiceDek Foundations, CD Premium, Lifecycle Basics		1x5-1/2	Oval Fluted – Grooved	16	12	10	100 psf with MoistureShield Deck Clip hidden fastening system	9
MoistureShield, ModernView, MoistureShield Vision, LifeCycle by MoistureShield, LifeCycle Euro by MoistureShield		7/8x5-1/2	Oval Fluted – Grooved	14	12	10	100 psf with MoistureShield Deck Clip hidden fastening system	8
Elevate, MoistureShield Elevate		1x5-1/2	Oval Fluted – Grooved	16	12	10	150 psf with MoistureShield Deck Clip hidden fastening system	8

for SI conversion: 1 in = 25.4 mm, 1 psf = 47.9 Pa, 1 lbf = 0.0044 kN

¹ Deck boards installed with screws must be attached to each joist with two #7 x 2-1/4-in. stainless steel deck screws. All fasteners installed with an end/edge distance closer than 1-1/2 in. must be predrilled. Deck boards with side grooves installed with hidden fasteners (MoistureShield Deck Clip – see image below) must be attached to each joist with a fastener according to the manufacturer’s installation instructions.

The joists to which the deck boards are attached must have a minimum specific gravity of 0.50 or better (Southern Pine) or the fastening must be designed. Deck boards and stair treads must be installed over at least two (2) spans. Stair treads must be installed perpendicular to supporting members.

No duration of load increase is allowed for the uplift values noted in Table 1 in this Report.



MoistureShield Deck Clip Hidden Fastener