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Product Approval
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FL #	FL15216-R10
Application Type	Revision
Code Version	2020
Application Status	Approved
Comments	
Archived	<input type="checkbox"/>
Product Manufacturer	Owens Corning Roofing and Asphalt, LLC
Address/Phone/Email	One Owens Corning Parkway Toledo, OH 43645 (740) 321-6345 Greg.Keeler@owenscorning.com
Authorized Signature	Keeler Greg Greg.Keeler@owenscorning.com
Technical Representative	Greg Keeler
Address/Phone/Email	2790 Columbus Road Granville, OH 43023 (740) 321-6345 greg.keeler@owenscorning.com
Quality Assurance Representative	
Address/Phone/Email	

Category	Roofing												
Subcategory	Underlayments												
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer <input type="checkbox"/> Evaluation Report - Hardcopy Received												
Florida Engineer or Architect Name who developed the Evaluation Report	Robert Nieminen												
Florida License	PE-59166												
Quality Assurance Entity	Intertek Testing Services NA, Inc. - QA Entity												
Quality Assurance Contract Expiration Date	12/31/2023												
Validated By	John W. Knezevich, PE <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received												
Certificate of Independence	FL15216 R10 COI 2021 01 COI NIEMINEN.pdf												
Referenced Standard and Year (of Standard)	<table border="0"> <thead> <tr> <th><u>Standard</u></th> <th><u>Year</u></th> </tr> </thead> <tbody> <tr> <td>ASTM D226 (physicals)</td> <td>2009</td> </tr> <tr> <td>ASTM D4533 (tear strength)</td> <td>2015</td> </tr> <tr> <td>ASTM D4798 (weathering)</td> <td>2011</td> </tr> <tr> <td>ASTM D4869 (liquid transmission)</td> <td>2016</td> </tr> <tr> <td>ASTM D5035 (tensile strength)</td> <td>2011</td> </tr> </tbody> </table>	<u>Standard</u>	<u>Year</u>	ASTM D226 (physicals)	2009	ASTM D4533 (tear strength)	2015	ASTM D4798 (weathering)	2011	ASTM D4869 (liquid transmission)	2016	ASTM D5035 (tensile strength)	2011
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ASTM D5035 (tensile strength)	2011												
Equivalence of Product Standards Certified By													
Sections from the Code													
Product Approval Method	Method 1 Option D												
Date Submitted	08/13/2021												
Date Validated	08/16/2021												
Date Pending FBC Approval	08/22/2021												

Date Approved

10/12/2021

Summary of Products

FL #	Model, Number or Name	Description
15216.1	RhinoRoof U10, RhinoRoof U20, ABC Pro Guard 20 and SRS TopShield TS20 Roof Underlayments	Synthetic roof underlayments
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other: See ER Section 5 for Limits of Use.		Installation Instructions FL15216 R10 II 2021 08 13 FINAL ER OWENS CORNING RHINOROOFL15216-R10.pdf Verified By: Robert Nieminen PE-59166 Created by Independent Third Party: Yes Evaluation Reports FL15216 R10 AE 2021 08 13 FINAL ER OWENS CORNING RHINOROOFL15216-R10.pdf Created by Independent Third Party: Yes

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Product Approval Accepts:





NEMO|etc.

Certificate of Authorization #32455
353 Christian Street, Unit #13
Oxford, CT 06478
(203) 262-9245

ENGINEER

EVALUATE

TEST

CONSULT

EVALUATION REPORT

Owens Corning Roofing and Asphalt, LLC
One Owens Corning Parkway
Toledo, OH 43659
(740) 321-6345

Evaluation Report I40510.02.12-R11

FL15216-R10

Date of Issuance: 02/17/2012

Revision 11: 08/13/2021

SCOPE:

This Evaluation Report is issued under **Rule 61G20-3** and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The products described herein have been evaluated for compliance with the **7th Edition (2020) Florida Building Code** sections noted herein.

DESCRIPTION: RhinoRoof U10, RhinoRoof U20, ABC Pro Guard 20 and SRS TopShield TS20 Roof Underlayments

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein and FBC 1507.1.1.

CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance or production facility location(s) changes, or Code provisions that relate to the product(s) change. Acceptance of our Evaluation Reports by the named client constitutes agreement to notify NEMO ETC, LLC of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO ETC, LLC requires a complete review of its Evaluation Report relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words **"NEMO Evaluated"** may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

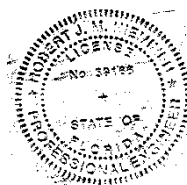
INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 4.

Prepared by:

Robert J.M. Nieminen, P.E.

Florida Registration No. 59166, Florida DCA ANE1983



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 08/13/2021. This does not serve as an electronically signed document.

CERTIFICATION OF INDEPENDENCE:

1. NEMO ETC, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. NEMO ETC, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
5. This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

ROOFING COMPONENT EVALUATION:
1. SCOPE:
Product Category: Roofing

Sub-Category: Underlayment

Compliance Statement: RhinoRoof U10, RhinoRoof U20, ABC Pro Guard 20 and SRS TopShield TS20 Roof Underlayments, as produced by Owens Corning Roofing and Asphalt, LLC, have demonstrated compliance with the following sections of the 7th Edition (2020) Florida Building Code through testing in accordance with applicable sections of the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

Section	Properties	Standard	Year
1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Tear strength	ASTM D4533	2015
1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Tensile strength	ASTM D5035	2011
1507.1.1.1(5) / R905.1.1.1(5)	Liquid water transmission	ASTM D4869	2016
1518.4, RAS 115	Unrolling, Breaking Strength, Pliability	ASTM D226	2009
TAS 110	Accelerated Weathering	ASTM D4798	2011

3. REFERENCES:

Entity	Examination	Reference	Date
ITS (TST1509)	ASTM D226	100539395COQ-006	10/26/2011
ITS (TST1509)	ASTM D4869	100539395COQ-002	10/26/2011
PRI (TST5878)	ASTM D226 / D4798 / D4869	OCF-394-02-07.4	01/06/2020
PRI (TST5878)	ASTM D226 / D4798	OCF-464-02-02.2	01/06/2020
PRI (TST5878)	ASTM D4533 / D5035 / D4798	1378T0109	10/15/2020
PRI (TST5878)	ASTM D4533 / D5035	1378T0127	10/15/2020
PRI (TST5878)	ASTM D8257-20	1378T0138	02/25/2021
PRI (TST5878)	ASTM D8257-20	1378T0139	03/23/2021
ITS (QUA1673)	ITS Audit Manual	3144566COQ-006A	09/10/2020
ITS (QUA1673)	Quality Control	Service Confirmation	08/13/2021
ITS (QUA1673)	Quality Control	Florida BCIS	Current

4. PRODUCT DESCRIPTION:

	Product	Specification	Plant(s)	Description
4.2	RhinoRoof U10	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Qingdao, China	Multilayered polymer woven coated synthetic roof underlayment
4.1	RhinoRoof U20	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Qingdao, China Silvassa, India	Multilayered polymer woven coated synthetic roof underlayment
4.2	ABC Pro Guard 20	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Silvassa, India	Multilayered polymer woven coated synthetic roof underlayment
4.3	SRS TopShield TS20	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Silvassa, India	Multilayered polymer woven coated synthetic roof underlayment

5. LIMITATIONS:

- 5.1 This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.
- 5.2 This Evaluation Report pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.
- 5.3 This Evaluation Report does not include evaluation of fire classification. Refer to **FBC 1505** or **FBC HVHZ 1516** for requirements and limitations regarding roof assembly fire classification. Refer to **FBC 2603** for requirements and limitations concerning the use of foam plastic insulation.
- 5.4 **RhinoRoof U10, RhinoRoof U20, ABC Pro Guard 20 and SRS TopShield TS20 Roof Underlayments** may be used with any prepared roof cover where the product is specifically referenced within FBC approval documents. If not listed, a request may be made to the Authority Having Jurisdiction for approval based on this evaluation combined with supporting data for the prepared roof covering.
- 5.5 Allowable roof covers:

TABLE 1: ROOF COVER OPTIONS					
FBC NON-HVHZ:	1507.2	1507.3	1507.4 & 1507.5	1507.7	1507.8 & 1507.9
FBC HVHZ:	TAS 110(S10), RAS 115	TAS 110(S11), RAS 118, 119 & 120	RAS 133	TAS 110(S11)	RAS 130
Underlayment	Asphalt Shingles	Clay and Concrete Tile	Metal	Slate or Slate-Type Shingles	Wood
RhinoRoof U10	Yes	No	Yes	No	NON-HVHZ: No HVHZ: Yes
RhinoRoof U20	Yes	No	Yes	No	NON-HVHZ: No HVHZ: Yes
ABC Pro Guard 20	Yes	No	Yes	No	NON-HVHZ: No HVHZ: Yes
SRS TopShield TS20	Yes	No	Yes	No	NON-HVHZ: No HVHZ: Yes

5.6 Exposure Limitations:

TABLE 2: EXPOSURE LIMITATIONS	
Underlayment	Maximum Exposure (days)
RhinoRoof U10	90
RhinoRoof U20	90
ABC Pro Guard 20	30
SRS TopShield TS20	30

6. INSTALLATION:

6.1 **RhinoRoof U10, RhinoRoof U20, ABC Pro Guard 20 and SRS TopShield TS20 Roof Underlayments** shall be installed in accordance with the manufacturer's published installation instructions subject to the Limitations set forth in Section 5 herein and the specifics noted below.

6.2 Re-fasten any loose decking panels, and check for protruding nail heads. Sweep the substrate thoroughly to remove any dust and debris prior to application.

6.3 RhinoRoof U10, RhinoRoof U20, ABC Pro Guard 20 and SRS TopShield TS20 Roof Underlayments:

6.3.1 NON-HVHZ Jurisdictions:

6.3.1.1 Shall be installed in compliance with requirements for a synthetic underlayment in **FBC 1507.1.1.1(2, Exception), 1507.1.1.1(3, Exception) or 1507.1.1.1(5)** or **FBC Residential R905.1.1.1(2, Exception), R905.1.1.1(3, Exception) or R905.1.1.1(5)** for the type of prepared roof covering to be installed, and the manufacturer's installation instructions. FBC requirements take precedence over the manufacturer's installation instructions.

6.3.1.2 Fasteners:

Minimum fasteners shall be corrosion resistant, ring-shank cap nails shall be as set forth in **FBC 1507.1.1.1 or 1507.1.1.3 or FBC Residential R905.1.1.1 or R905.1.1.3**.

6.3.2 HVHZ Jurisdictions:

6.3.2.1 Shall be installed in a shingle fashion with minimum 4-inch wide side (horizontal) laps and minimum 6-inch wide end laps, and fastened in accordance with FBC HVHZ 1518.2:

- grid pattern of 12 inches between the overlaps, with 6-inch spacing at the overlaps

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction to properly evaluate the installation of this product.

8. MANUFACTURING PLANTS:

Contact the named QA entity for manufacturing facilities covered by **F.A.C. Rule 61G20-3** QA requirements. Refer to Section 4 herein for products and production locations having met codified material standards.

9. QUALITY ASSURANCE ENTITY:

Intertek Testing Services NA Inc. – QUA1673; (312) 906-7779; maura.norlander@intertek.com

- END OF EVALUATION REPORT -



Product Approval
USER: Public User

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FL #	FL18355-R6								
Application Type	Revision								
Code Version	2020								
Application Status	Approved								
	*Approved by DBPR. Approvals by DBPR shall be reviewed and ratified by the POC and/or the Commission if necessary.								
Comments									
Archived	<input type="checkbox"/>								
Product Manufacturer	TAMKO Building Products LLC								
Address/Phone/Email	PO Box 97 Galena, KS 66739 (417) 624-6644 Ext 2305 kerri_eden@tamko.com								
Authorized Signature	Kerri Eden kerri_eden@tamko.com								
Technical Representative	Kerri Eden								
Address/Phone/Email	PO Box 1404 Joplin, MO 64802 (417) 624-6644 Ext 2305 kerri_eden@tamko.com								
Quality Assurance Representative									
Address/Phone/Email									
Category	Roofing								
Subcategory	Asphalt Shingles								
Compliance Method	Evaluation Report from a Product Evaluation Entity								
Evaluation Entity	UL LLC								
Quality Assurance Entity	UL LLC								
Quality Assurance Contract Expiration Date	06/29/2023								
Validated By	Robert Nieminen, PE								
	<input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received								
Certificate of Independence	FL18355_R6_COI_UL_Standards of Business Conduct - Independence.pdf								
Referenced Standard and Year (of Standard)	<table> <thead> <tr> <th>Standard</th><th>Year</th></tr> </thead> <tbody> <tr> <td>ASTM D3161</td><td>2016</td></tr> <tr> <td>ASTM D3462</td><td>2010</td></tr> <tr> <td>ASTMD D7158</td><td>2019</td></tr> </tbody> </table>	Standard	Year	ASTM D3161	2016	ASTM D3462	2010	ASTMD D7158	2019
Standard	Year								
ASTM D3161	2016								
ASTM D3462	2010								
ASTMD D7158	2019								
Equivalence of Product Standards Certified By									
Sections from the Code									

Product Approval Method

Method 1 Option C

Date Submitted

11/20/2020

Date Validated

11/23/2020

Date Pending FBC Approval

Date Approved

11/24/2020

Summary of Products

FL #	Model, Number or Name	Description
18355.1	TAMKO Asphalt Shingles	ASTM D3462 asphalt shingles and hip and ridge shingles
Limits of Use Approved for use in HVHZ: No Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other: See evaluation report for limits of use.		Installation Instructions FL18355_R6_II_2020_11_18_TAMKO_UL_ER2919-01.pdf Verified By: UL LLC Created by Independent Third Party: Evaluation Reports FL18355_R6_AE_2020_11_18_TAMKO_UL_ER2919-01.pdf

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Product Approval Accepts:



UL Evaluation Report

UL ER2919-01

Issued: May 21, 2013

Revised: March 29, 2022

Visit UL, LLC's [Product iQ™ database](#) for the status of this Report.

UL Category Code: ULEZ

CSI MasterFormat®

DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION

Sub-level 2: 07 30 00 – Steep Slope Roofing

Sub-level 3: 07 31 00 – Shingles and Shakes

Sub-level 4: 07 31 13 – Asphalt Shingles

COMPANY:

TAMKO BUILDING PRODUCTS LLC

198 FOUR STATES DRIVE

GALENA, KANSAS 66739

(417) 624-6644

www.tamko.com

1. SUBJECT: Asphalt Shingles

ELITE GLASS-SEAL,

HERITAGE, HERITAGE IR, HERITAGE PREMIUM, HERITAGE WOODGATE, HERITAGE VINTAGE,
HERITAGE PROLINE STORMFIGHTER IR, AND HERITAGE PROLINE TITAN XT

HERITAGE VINTAGE 12 X 12 HIP AND RIDGE, 12-1/4 X 12 HIP AND RIDGE, AND 12-1/4 X 12 HERITAGE
HIP AND RIDGE IR

HERITAGE VINTAGE STARTER, TAMKO 10-INCH STARTER, TAMKO PERFORATED STARTER,
TAMKO SHINGLE STARTER

2. SCOPE OF EVALUATION

- 2021, 2018, 2015, and 2012 *International Building Code*® (IBC)
- 2021, 2018, 2015, and 2012 *International Residential Code*® (IRC)
- 2020 Florida Building Code – Building
- 2020 Florida Building Code – Residential
- ICC ES Acceptance Criteria for Quality Documentation (AC10)



The products were evaluated for the following properties:

- Exterior Fire Exposure (UL 790)
- Wind Resistance (ASTM D3161; ASTM D7158)
- Physical Properties (ASTM D3462)
- Impact Resistance (UL 2218)

3. REFERENCED DOCUMENTS

- UL 790, Standard Test Methods for Fire Tests of Roof Coverings
- UL 2218, Standard Test Methods for Impact Resistance of Prepared Roof Covering Materials
- ASTM D3161, Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method)
- ASTM D7158, Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method)
- ASTM D3462, Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
- UL Subject 2375 Issue No. 2, Outline of Investigation for Hip and Ridge Shingles (UL Fire and Wind Tests)
- ICC-ES Acceptance Criteria for Quality Documentation (AC10)

4. USES

TAMKO asphalt shingles are used as roof coverings for new and existing roofs.

5. PRODUCT DESCRIPTION

TAMKO asphalt shingles are roof covering materials complying with the following properties when installed as described in this report. The products are three-tab shingles, laminated shingles, starter shingles, and hip & ridge shingles.

Fire Classification: TAMKO asphalt shingles covered under this Report have been tested for fire classification Class A in accordance with UL 790. Shingles tested in accordance with UL 790 qualify for use under Section 1505.1 of the 2020 Florida Building Code - Building, IBC, Section R902.1 of the IRC and 2020 Florida Building Code - Residential.

Wind Resistance: TAMKO asphalt shingles covered under this Report have been tested for wind resistance in accordance with ASTM D3161 or ASTM D7158.

Shingles tested in accordance with ASTM D3161 are classified as Class F and qualify for use under the exception to Section 1504.2 of the 2021 IBC, Section 1504.1.1 of the 2018 and 2015 IBC, Section 1507.2.7.1 of the 2012 IBC and 2020 Florida Building Code - Building, the exception to Section R905.2.4.1 of the IRC, and Section R905.2.4 of 2020 Florida Building Code - Residential.

Shingles tested in accordance with ASTM D7158 are classified as Class H and qualify for use in locations as shown in Table 1504.2 of the 2021 IBC, Table 1504.1.1 of 2018 and 2015 IBC, Table 1507.2.7.1 of the 2012 IBC and 2020 Florida Building Code - Building, Table R905.2.4.1 of the IRC, or Table R905.2.6.1 of the 2020 Florida Building Code - Residential, where the maximum basic wind speed is 150 mph (67 m/s) or less with exposure category of B or C (ASCE 7) and a maximum building height of 60 feet (18.3 m). Installation must be in accordance with Section 1507.2 of the 2021 and 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.7 of the 2015, and 2012 IBC, or Section R905.2 of the IRC and 2020 Florida Building Code - Residential, as applicable.

Physical Properties: TAMKO asphalt shingles covered under this Report have been tested for physical properties in accordance with ASTM D3462. Shingles tested in accordance with ASTM D3462 qualify for use under Section 1507.2.4 of the 2021 and 2018 IBC, Section 1507.2.5 of the 2015 and 2012 IBC, Section 1507.2.5 of the 2020 Florida Building Code - Building, or Section R905.2.4 of the IRC and 2020 Florida Building Code - Residential. When installed on new construction in accordance with this report and the TAMKO Building Products LLC installation instructions, the shingles are a Class A roof covering. When the shingles are installed over existing roof coverings, the Class A fire classification is maintained.

5.1 Three-Tab Shingles – Elite Glass-Seal:

Elite Glass-Seal shingles are three-tab shingles manufactured with a single fiberglass mat, coated on both sides with asphalt, and surfaced on the weather-exposed side with mineral granules. The shingles are self-sealing and have beads of thermal-tab sealing adhesive above the shingle butt on the weather side. See [Table 2](#) for product dimensions and manufacturing locations.

5.2 Laminated Shingles – Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, Heritage Vintage, Heritage Proline Stormfighter IR, and Heritage Proline Titan XT:

Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, Heritage Vintage, Heritage Proline Stormfighter IR, and Heritage Proline Titan XT shingles are laminated shingles manufactured with a double layer of fiberglass mats coated with asphalt on all sides and surfaced on the weather-exposed side with mineral granules. See [Table 3](#), [Table 4](#), [Table 5](#), [Table 6](#), [Table 7](#), [Table 10](#), [Table 13](#), and [Table 13A](#) for product dimensions and manufacturing locations.

5.3 Hip & Ridge Shingles – 12-¼ X 12 Hip and Ridge, Heritage Vintage 12 X 12 Hip and Ridge, 12-¼ X 12 Heritage Hip and Ridge IR:

Hip and Ridge are prefabricated hip and ridge shingles available as 12-¼ X 12 Hip and Ridge and 12-¼ x 12 Heritage Hip and Ridge IR. Heritage Vintage Hip and Ridge are prefabricated hip and ridge shingles available as 12 X 12 Hip and Ridge. As an alternative, Elite Glass-Seal shingles are cut into three 12-¼ inch by 12-inch (305 mm by 305 mm) hip and ridge shingles. See [Table 8](#), [Table 9](#), and [Table 11](#) for product dimensions and manufacturing locations.

6. INSTALLATION

TAMKO asphalt shingles must be installed in accordance with the applicable code, this report and the manufacturer's published installation instructions. The shingles must be installed in accordance with Section 1507.2 of the IBC and 2020 Florida Building Code - Building, or Section R905.2 of the IRC and 2020 Florida Building Code - Residential, as applicable, except as noted in this report.

The manufacturer's published installation instructions must be available at all times on the jobsite during installation.

Minimum roof slopes must be 2:12 (16.67% slope) for the three-tab shingles described under 5.1 of this Report and for the laminated shingles described under 5.2 of this Report.

6.1 Underlayment and Ice Barriers:

For roof slopes 4:12 and greater, the roof deck must be covered with a minimum of one layer of underlayment as described in Sections 7.2 and 7.3 of this Report. Underlayment application must be in accordance with Table 1507.1.1 of the 2021 and 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.8 of the 2015 and 2012 IBC or Table R905.1.1(2) of the 2021 IRC, Section R905.2.7 of the 2018, 2015, and 2012 IRC, and Section 905.2.3 of the 2020 Florida Building Code - Residential, as applicable.

For roof slopes 2:12 and up to but less than 4:12, two layers of the underlayment described in Section 7.2 or one layer of the self-adhering polymer modified bitumen sheet in described in Section 7.3 of this Report are required. Underlayment application must be in accordance with Section 1507.1.1 of the 2021 and 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.8 of the 2015 and 2012 IBC, Section R905.1.1 of the IRC, and 2020 Florida Building Code - Residential, as applicable.

In areas where there has been a history of ice forming along the eaves, causing a backup of water, an ice barrier must be provided in accordance with Section 1507.1.2 of the 2021 and 2018 IBC and Section 1507.2.8.2 of the 2020 Florida Building Code - Building, 2015 and 2012 IBC or Section R905.1.2 of the 2021 and 2018 IRC, 2020 Florida Building Code - Residential, Section R905.16.4.1 of the 2015 IRC, and Section R905.2.7.1 of the 2012 IRC, as applicable.

6.2 Starter Shingle:

A starter course, as described in Section 7.4 of this Report, must be attached to the eave edge using fasteners described in Section 7.5 of this Report, located 1-½ to 3 inches (38.1 to 76.2 mm) from the eave edge and spaced 1 inch (25.4 mm) and 12 inches (305 mm) from each end, for a total of four fasteners per shingle. Starter strips must overhang the eave and rake edges ¼ to ¾ inch (6.4 to 19.1 mm) if no drip edge flashing is present. If drip edge flashing is present, install shingles even with the drip edge or overhang the drip edge up to ¾ inch.

6.3 Asphalt Shingles:

The first course of field shingles must be installed over the starter course described in Section 7.4 of this Report.

Shingles must be installed with vertical joints offset a minimum of 4 inches (102 mm) from adjacent courses.

6.3.1 Three-Tab Shingles – Elite Glass-Seal:

For roof slopes 2:12 up to but less than 21:12 (16.67% to 175% slope), each shingle must be fastened to the roof deck using a minimum of four fasteners, spaced as shown in Table 2.

For roof slopes equal to or greater than 21:12 (175% slope), six fasteners must be used, spaced as shown in Table 2.

Fasteners must be in a nail area between 5-⁵/₈ inches and 6-⁷/₈ inches from the butt edge of the shingle.

Maximum exposure to the weather must be 5-¹/₈ inches (130 mm).

In colder climates or wind regions where it is questionable whether the thermal-sealing adhesive will activate to seal the shingles, the shingles can be hand-sealed. A 1-in diameter (25.4 mm) spot of asphalt cement complying with ASTM D4586, Type I, Class I, should be placed under the corner of each tab (two spots per tab).

6.3.2 Laminated Shingles – Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, Heritage Proline Stormfighter IR, and Heritage Proline Titan XT:

For roof slopes 2:12 up to but less than 21:12 (16.67% to 175% slope), each shingle must be fastened to the roof deck using a minimum of four fasteners, spaced as shown in Tables 3, 4, 5, 6, 10, 13, and 13A.

For roof slopes equal to or greater than 21:12 (175% slope), six fasteners must be used, spaced as shown in Tables 3, 4, 5, 6, 10, 13, and 13A.

Maximum exposure to the weather must be 5-⁵/₈ inches (143 mm).

In colder climates or wind regions where it is questionable whether the thermal-sealing adhesive will activate to seal the shingles, the shingles can be hand-sealed. Four evenly spaced 1-inch diameter (25.4 mm) spots of cement should be placed under the exposed portion of the shingle, approximately 1 inch (76 mm) above the butt edge.

6.3.3 Laminated Shingles – Heritage Vintage:

For roof slopes 2:12 up to but less than 21:12 (16.67% to 175% slope), each shingle must be fastened to the roof deck using a minimum of five fasteners, spaced as shown in Table 7.

For roof slopes equal to or greater than 21:12 (175% slope), nine fasteners must be used, spaced as shown in [Table 7](#).

Fasteners must be located 6 and 11-¹/₂ inches (152 and 292 mm) above the butt edge of the shingles.

Maximum exposure to the weather must be 5 inches (127 mm).

In colder climates or wind regions where it is questionable whether the thermal-sealing adhesive will activate to seal the shingles, the shingles must be hand-sealed. Four evenly spaced 1-inch diameter (25.4 mm) spots of cement should be placed under the exposed portion of the shingle, approximately 1 inch (127 mm) above the butt edge.

6.4 Valley Construction and Other Flashing:

Valleys must consist of woven, open valley or closed-cut construction and must be flashed in accordance with Section 1507.2.8.2 of the 2021 and 2018 IBC, and Section 1507.2.9.2 of the 2020 Florida Building Code - Building, 2015 and 2012 IBC or Section R905.2.8.2 of the IRC and 2020 Florida Building Code - Residential. Other flashings must be in accordance with Sections 1503.2 and 1507.2.8 of 2020 Florida Building Code - Building, 2021 and 2018 IBC, Section 1507.2.9 of the 2015 and 2012 IBC, or Section R905.2.8 of the IRC and 2020 Florida Building Code - Residential, as applicable.

6.5 Hip and Ridge Application:

Hip and ridge shingles must be placed evenly over hips and ridges and must be fastened to the roof deck using two fasteners, one located on either side of the shingle, 5-¹/₂ inches (140 mm) or 5-⁵/₈ inches (143 mm) from the exposed end, and 1 inch (25.4 mm) in from the edge as shown in Tables 8, 9, and 11. Fasteners must be a minimum ¹/₄ inch (6.4 mm) longer than those used in the field of the roof, as specified in Section 7.5 of this report. The 12-¹/₄ X 12 Hip and Ridge and 12-¹/₄ x 12 Heritage Hip and Ridge IR prefabricated hip and ridge shingles must be applied with a maximum exposure of 5-¹/₈ inches. (130 mm). Heritage Vintage 12 X 12 Hip and Ridge prefabricated hip and ridge shingles must be installed with a maximum exposure of 5 inches (127 mm). Hip and ridge shingles are installed starting at the bottom of the hip or from the end of the ridge opposite the direction of the prevailing wind.

6.6 Reroofing:

The existing asphalt shingle roof covering must be inspected in accordance with the provisions and limitations of Section 1512 of the 2021 IBC, Section 1511 of the 2018 and 2015 IBC, and Section 1510 of the 2012 IBC, Section 1511 of the 2020 Florida Building Code - Building, Section R908 of the IRC, or Section 901.1 of the 2020 Florida Building Code - Residential, as applicable. Prior to the reroofing, hip and ridge coverings must be removed.

Except as noted in this section, the shingles must be installed in accordance with Section 6.3 and 6.5 of this Report. Fasteners must be of sufficient length to penetrate $\frac{3}{4}$ inch (19.1 mm) into the sheathing, or through the sheathing where the sheathing is less than $\frac{3}{4}$ inch (19.1 mm) thick. Flashing and edging must comply with Section 6.4 and with Section 1512.5 of the 2021 IBC, 1511.6 of the 2018 and 2015 IBC and 2020 Florida Building Code - Building, Section 1510.6 of the 2012, IBC and Section R908.6 of the 2021, 2018 and 2015 IRC, 2020 Florida Building Code - Residential, and R907.6 of the 2012 IRC, as applicable.

7. INSTALLATION MATERIALS

7.1 Sheathing:

The roof deck must be code-complying, minimum $\frac{3}{8}$ -inch thick (9.5 mm), exterior plywood complying with DOC PS-1; rated sheathing complying with DOC PS-2; or solid sheathing using minimum nominally 1 by 6 lumber.

7.2 Underlayment:

Under the IBC or IRC, underlayment must comply with ASTM D226, Type I (minimum), ASTM D4869, Type I (minimum), ASTM D1970, or ASTM D6757 as specified in Section 1507.2.3 of the IBC or Section 905.1.1 of the IRC. Under the 2020 Florida Building Code – Building, underlayment must comply with ASTM D226, ASTM D4869, ASTM D1970, or ASTM D6757 as specified in Section 1507.1.1. Under the IRC and 2020 Florida Building Code – Residential, underlayment must comply with ASTM D226, Type I (minimum), ASTM D4869, Type I (minimum), ASTM D1970 or ASTM D6757 as specified in Section R905.1.1.

7.3 Self-adhering Polymer Modified Bitumen Sheet:

The self-adhering polymer modified bitumen sheet must comply with ASTM D1970.

7.4 Starter Shingles:

The starter course shingle consists of either TAMKO 10-inch starter, TAMKO Shingle Starter, TAMKO Perforated Starter, or a self-sealing three-tab shingle. If self-sealing three-tab shingles are used, remove the exposed tab portion and install with factory-applied sealant adjacent to the eaves.

Heritage Vintage requires a Heritage Vintage Starter shown in [Table 12](#) is to be installed over the starter course at the eave edge.

TAMKO Shingles require a TAMKO Shingle Starter as shown as in [Table 14](#), [Table 15](#), or [Table 16](#) which must be installed over the starter course at the eave edge.

7.5 Fasteners:

Fasteners must be minimum No. 12 gage [0.105 inch (2.7 mm)], $\frac{3}{8}$ -inch diameter head (9.5 mm), galvanized, stainless steel, aluminum or copper corrosion-resistance nails. Fasteners must be of sufficient length to penetrate into the sheathing $\frac{3}{4}$ -inch (19.1 mm), or through the sheathing, where the sheathing is less than $\frac{3}{4}$ -inch (19.1 mm) thick. Fasteners must be compliant with ASTM F1667.

7.6 Asphalt Cement:

Asphalt cement must comply with ASTM D4586, Type I, Class I.

8. CONDITIONS OF USE

The TAMKO Asphalt Shingles described in this Report comply with, or are suitable alternatives to, what is specified in those codes listed in Section 2 of this Report, subject to the following conditions:

- 8.1** Materials and methods of installation shall comply with this Report and the manufacturer's published installation instructions. In the event of a conflict between the installation instructions and this Report, this Report governs.
- 8.2** The products are manufactured at the locations listed in [Table 1](#) of this Report under the UL LLC Classification and Follow-Up Service Program, which includes regular audits in accordance with quality elements of ICC-ES Acceptance Criteria for Quality Documentation, AC10.
- 8.3** See UL [Product iQ™ database](#) for Prepared Roof-Covering Materials (TFWZ).

9. SUPPORTING EVIDENCE

- 9.1** Manufacturer's descriptive product literature, including installation instructions.
- 9.2** See UL [Product iQ™ database](#) for the following:
 - 9.2.1** UL test reports and Classification in accordance with UL 790, Class A and UL Subject 2375 for Roof-Covering Materials ([TFWZ](#)).
 - 9.2.2** UL test reports and Classification in accordance with ASTM D3462 for Prepared Roof-Covering Materials ([TFWZ](#)).
 - 9.2.3** UL test reports and Classification in accordance with ASTM D7158, Class H for Prepared Roof-Covering Materials ([TGAH](#)).
 - 9.2.4** UL test reports and Classification in accordance with ASTM D3161, Class F Prepared Roof-Covering Materials ([TFWZ](#)).
 - 9.2.5** UL test reports and Classification in accordance with UL 2218A Roof-covering Materials, Impact Resistance ([TGAM](#)).
- 9.3** Quality Documentation in accordance with ICC-ES Acceptance Criteria for Quality Documentation, AC10.

10. IDENTIFICATION

TAMKO asphalt shingles described in this Evaluation Report are identified by a marking on each package bearing the report holder's name (TAMKO Building Products LLC), the plant identification, the product name, the UL Listing/Classification Mark and the evaluation report number UL ER2919-01. The validity of this Evaluation Report is contingent upon this identification appearing on the package.

11. USE OF UL EVALUATION REPORT

- 11.1** The approval of building products, materials or systems is under the responsibility of the applicable authorities having jurisdiction.
- 11.2** UL Evaluation Reports shall not be used in any manner that implies an endorsement of the product, material or system by UL.

- 11.3 The status of this report, as well as a complete directory of UL Evaluation Reports may be found at UL.com via the [Product iQ™ database](#).

Table 1 – Manufacturing Locations

LISTEE	LOCATION	FACTORY ID
TAMKO BUILDING PRODUCTS LLC	7910 S CENTRAL EXPY DALLAS TX 75216	D
TAMKO BUILDING PRODUCTS LLC	4500 TAMKO DR FREDERICK MD 21704	F
TAMKO BUILDING PRODUCTS LLC	601 N HIGH ST JOPLIN MO 64801	J
TAMKO BUILDING PRODUCTS LLC	1598 HWY 183 PHILLIPSBURG KS 67661	P
TAMKO BUILDING PRODUCTS LLC	KAUL INDUSTRIAL PARK 2300 35TH ST TUSCALOOSA AL 35401	T

Table 2 – Elite Glass-Seal

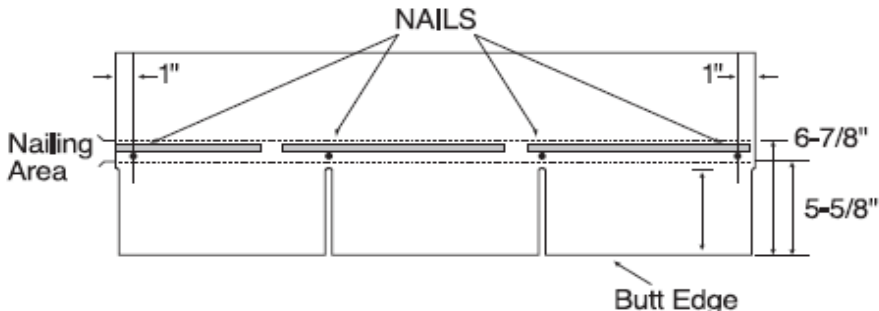
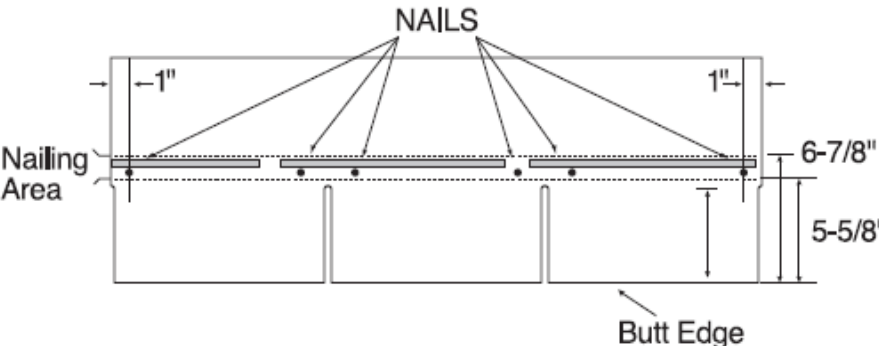
Dimensions:	12-1/4" x 36"
Plant Location(s):	Frederick, Joplin
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p> 
Fastening Pattern:	<p>For slopes equal to or greater than 21:12</p> 

Table 3 – Heritage

Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Dallas, Frederick, Joplin, Phillipsburg
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p>
Fastening Pattern:	<p>For slopes equal to or greater than 21:12</p>

Table 4 – Heritage

Dimensions:	13- $\frac{1}{4}$ " x 39- $\frac{3}{8}$ "
Plant Location(s):	Tuscaloosa
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p> <p>1" 12-$\frac{1}{2}$" 12-$\frac{3}{8}$" 12-$\frac{1}{2}$" 1"</p> <p>PAIN T LINE</p> <p>7-$\frac{7}{8}$"</p> <p>6-$\frac{1}{8}$"</p> <p>PREFERRED FASTENER LOCATIONS</p> <p>NAIL ZONE</p> <p>EDGE OF COMMON BOND</p> <p>EXPOSURE 5-$\frac{5}{8}$"</p> <p>ACCEPTABLE FASTENER LOCATION</p> <p>DO NOT FASTEN ALONG EDGE OF COMMON BOND</p> <p>PREFERRED FASTENER LOCATION</p>
Fastening Pattern:	<p>For slopes equal to or greater than 21:12</p> <p>FASTENERS</p> <p>NAIL ZONE COMMON BOND</p> <p>6-$\frac{1}{8}$"</p> <p>1" 7-$\frac{1}{2}$" 7-$\frac{1}{2}$" 7-$\frac{3}{8}$" 7-$\frac{1}{2}$" 7-$\frac{1}{2}$" 1"</p> <p>EXPOSURE 5-$\frac{5}{8}$"</p>

Table 5 – Heritage Premium

Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Phillipsburg, Frederick
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p>
Fastening Pattern:	<p>For slopes equal to or greater than 21:12</p>

Table 6 – Heritage Woodgate

Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Dallas, Frederick
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p>
Fastening Pattern:	<p>For slopes equal to or greater than 21:12</p>

Table 7 – Heritage Vintage

Dimensions:	17-1/2" x 40"
Plant Location(s):	Phillipsburg
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p> <p>For slopes equal to or greater than 21:12</p> <p>Apply under each tab 1" diameter asphalt adhesive cement.</p>

Table 8 – Heritage Vintage 12 X 12 Hip and Ridge

Dimensions:	12" x 12"
Plant Location(s):	Phillipsburg
Fastening Pattern:	<p>The diagram illustrates the fastening pattern for a 12" x 12" Heritage Vintage Hip and Ridge. It shows a square section with a horizontal ridge line. The total width is 12". The distance from the top edge to the ridge line is 5" (labeled 'Exposure'). The distance from the ridge line to the bottom edge is 5 1/2". The distance from the left edge to the first nail is 1 in., and the distance from the last nail to the right edge is 1 in. The total width is 12".</p>

Table 9 – 12-1/4 X 12 Hip and Ridge

Dimensions:	12-1/4" x 12"
Plant Location(s):	Frederick, Joplin
Fastening Pattern:	<p>12-1/4"</p> <p>5 1/8" Exposure</p> <p>1 in.</p> <p>Nails</p> <p>5 5/8"</p> <p>1 in.</p> <p>12"</p>

Table 10 – Heritage IR

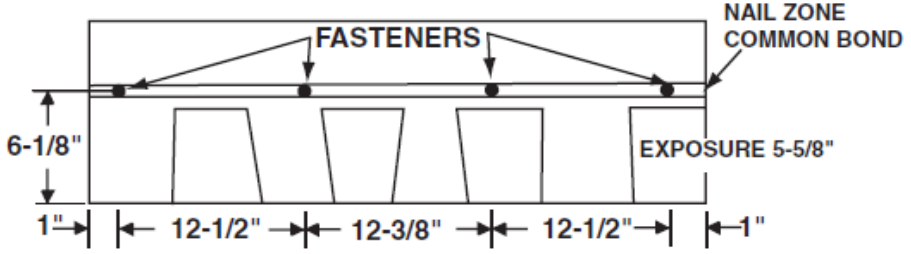
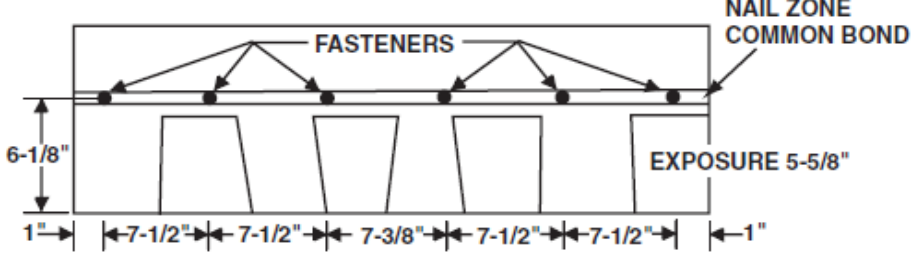
Dimensions:	13- $\frac{1}{4}$ " x 39- $\frac{3}{8}$ "
Plant Location(s):	Joplin, Philipsburg
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p>  <p>6-$\frac{1}{8}$"</p> <p>1"</p> <p>12-$\frac{1}{2}$"</p> <p>12-$\frac{3}{8}$"</p> <p>12-$\frac{1}{2}$"</p> <p>1"</p> <p>FASTENERS</p> <p>NAIL ZONE COMMON BOND</p> <p>EXPOSURE 5-$\frac{5}{8}$"</p>
Fastening Pattern:	<p>For slopes equal to or greater than 21:12</p>  <p>6-$\frac{1}{8}$"</p> <p>1"</p> <p>7-$\frac{1}{2}$"</p> <p>7-$\frac{1}{2}$"</p> <p>7-$\frac{3}{8}$"</p> <p>7-$\frac{1}{2}$"</p> <p>7-$\frac{1}{2}$"</p> <p>1"</p> <p>FASTENERS</p> <p>NAIL ZONE COMMON BOND</p> <p>EXPOSURE 5-$\frac{5}{8}$"</p>

Table 11 Heritage Hip and Ridge IR

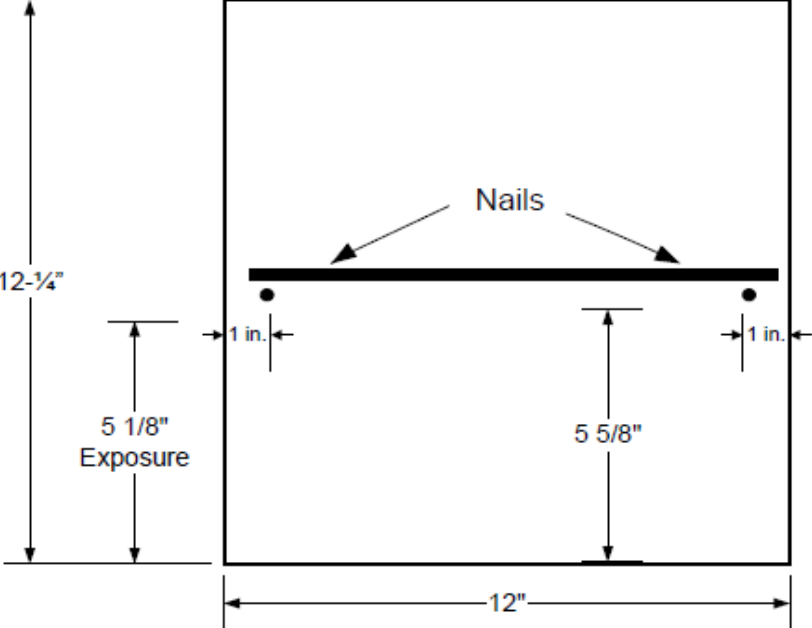
Dimensions:	12- ¹ / ₄ " x 12"
Plant Location(s):	Joplin
Fastening Pattern:	

Table 12 Heritage Vintage Starter

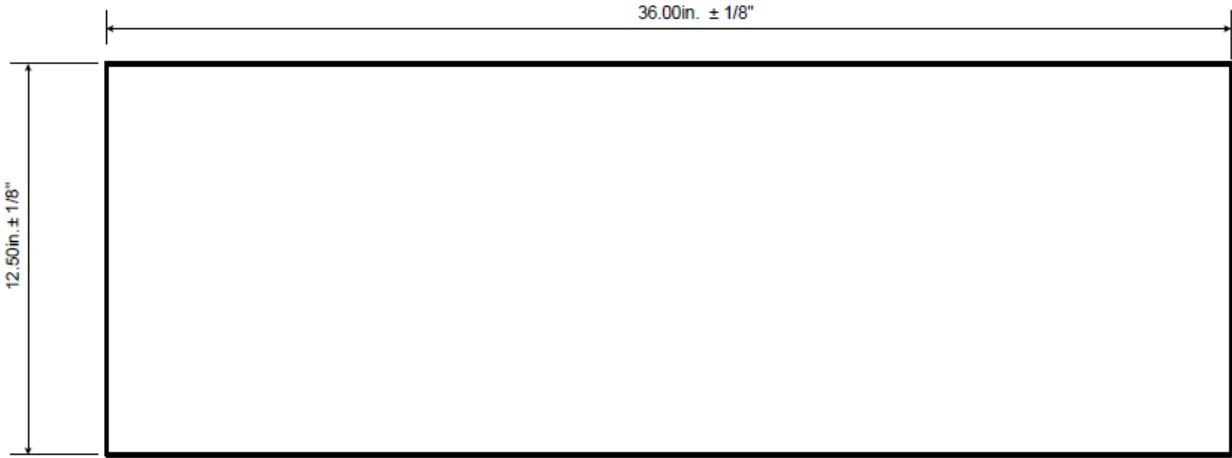


Table 13– Heritage Proline Titan XT

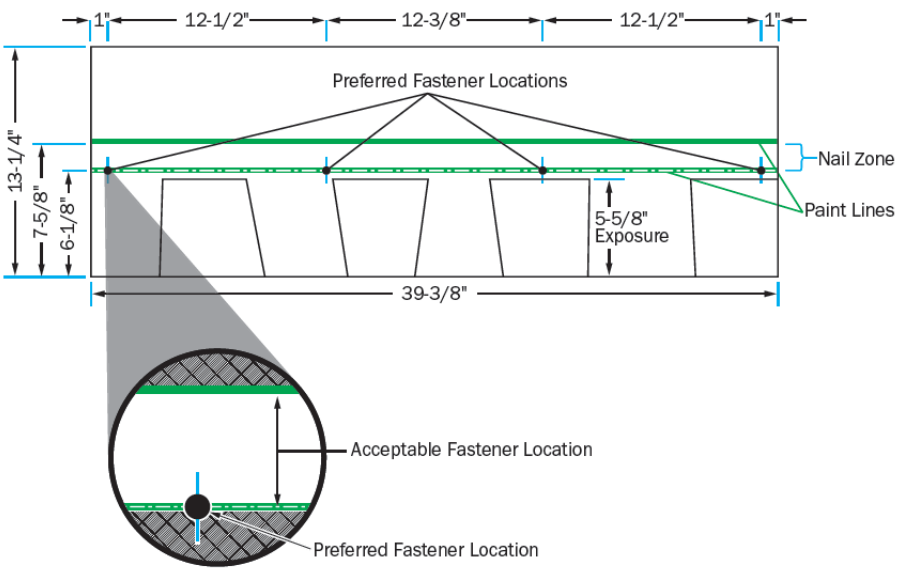
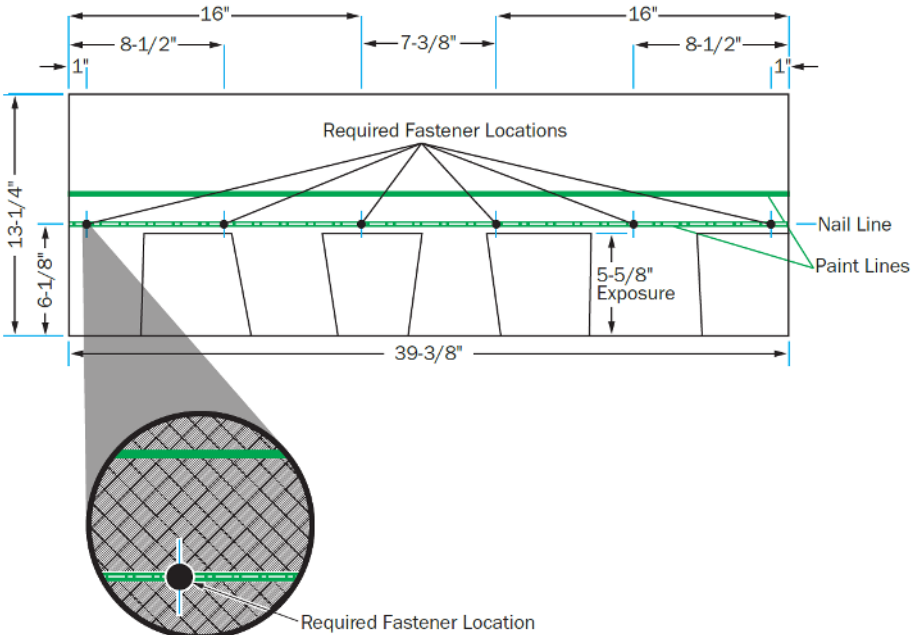
Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Frederick, Joplin, Tuscaloosa, Philipsburg
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p>  <p>For slopes equal to or greater than 21:12</p> 

Table 13A– Heritage Proline Stormfighter IR

Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Joplin, Philipsburg
Fastening Pattern:	<p>For slopes 2:12 up to but less than 21:12</p> <p>For slopes equal to or greater than 21:12</p>

Table 14– TAMKO 10-Inch Starter

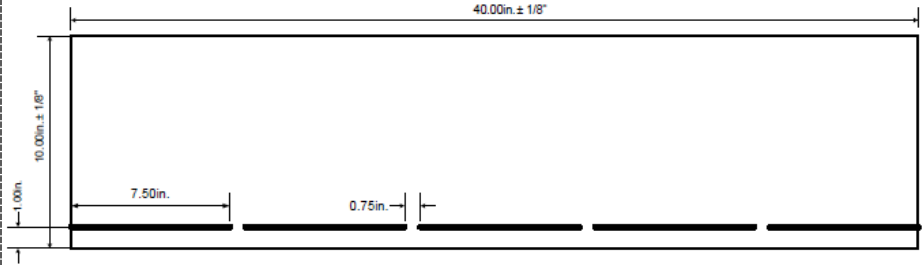
Dimensions:	10" x 40"
Plant Location:	Philipsburg
	For slopes 2:12 and greater 

Table 15– TAMKO Perforated Starter

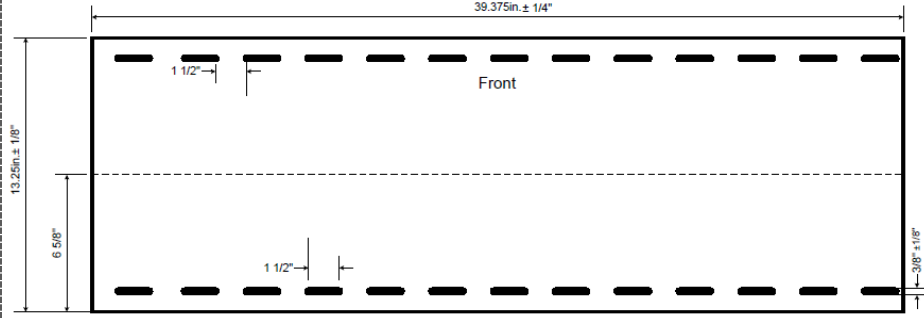
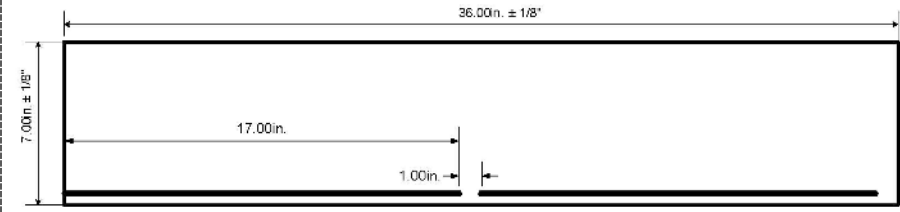
Dimensions:	13-1/4" x 39-3/8"
Plant Location:	Frederick
	For slopes 2:12 and greater 

Table 16– TAMKO Shingle Starter

Dimensions:	7" x 36"
Plant Location:	Joplin
	For slopes 2:12 and greater 

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