



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION

11805 SW 26 Street, Room 208
Miami, Florida 33175-2474

T (786) 315-2590 F (786) 315-2599

www.miamidade.gov/economy

NOTICE OF ACCEPTANCE (NOA)

The Dow Chemical Company Dow Solar
210 Front Street, P.O. Box 429
Monroe, MI. 48161

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: DOW POWERHOUSE™ Solar Shingle

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA 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 NOA revises NOA# 12-0424.02 and consists of pages 1 through 12.
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 14-0121.01
Expiration Date: 08/23/17
Approval Date: 08/07/14
Page 1 of 12

ROOFING COMPONENT APPROVAL

Category: Roofing
Sub-Category: Photovoltaic Devices
Material: Plastic

SCOPE:

This approves “**DOW POWERHOUSE™ Solar Shingle**” as a Built-In Photovoltaic component, manufactured by The Dow Chemical Company Dow Solar, as described in this Notice of Acceptance, designed to comply with the Florida Building Code and the High Velocity Hurricane Zone of the Florida Building Code.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
DOW POWERHOUSE™ Solar Shingle	22.8” x 23.4”	UL 1703	Plastic shingle with an integrated PV panel. Designed to be used with asphalt shingle roof systems.
Starter Integrated Flashing Assembly – Right Hand	23.4” x 8.75”	UL 1703	Plastic accessory used in the right hand side of the DOW POWERHOUSE™ Solar Shingle Assembly.
Starter Integrated Flashing Assembly – Left Hand	23.4” x 8.75”	UL 1703	Plastic accessory used in the left hand side of the DOW POWERHOUSE™ Solar Shingle Assembly.
Through Roof Integrated Flashing Assembly – Right Hand	23.4” x 14.75”	UL 1703	Plastic accessory used in the right hand side of the DOW POWERHOUSE™ Solar Shingle Assembly.
Through Roof Integrated Flashing Assembly – Left Hand	23.4” x 14.75”	UL 1703	Plastic accessory used in the left hand side of the DOW POWERHOUSE™ Solar Shingle Assembly.
Row to Row Integrated Flashing Assembly – Right Hand	33.38” x 14.75”	UL 1703	Plastic accessory used in the right hand side of the DOW POWERHOUSE™ Solar Shingle Assembly.
Row to Row Integrated Flashing Assembly – Left Hand	33.38” x 14.75”	UL 1703	Plastic accessory used in the left hand side of the DOW POWERHOUSE™ Solar Shingle Assembly.
Heilobond 600BT	N/A	TAS 110	Factory applied, adhesive tape manufactured with a clear poly film used in EPDM installations.
Heliobond PVA 900HM	N/A	TAS 110	Factory applied, hot-applied synthetic elastomer based adhesive/sealant.



MANUFACTURING LOCATION

- 1. Midland, MI. (1381 Building)
- 2. Midland, MI. (1870 Building)

EVIDENCE SUBMITTED

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
PRI Construction Materials Technologies	DSS-001-02-01	TAS 100	10/13/09
	DSS-007-02-01	ASTM D 635/ ASTM D 1929	09/23/10
	DSS-007-02-02	ASTM D 635/ ASTM D 1929	12/14/10
	DSS-003-02-01	ASTM G 155	06/24/11
	DSS-006-02-01	ASTM G 155	06/24/11
Underwriters Laboratories Inc.	09CA36880	UL1703	10/13/11
	10NK14247	TAS 107 / ASTM D 3161	03/21/12
	10NK14247	ASTM E 108	03/21/12



INSTALLATION

System (1):	DOW POWERHOUSE™ Solar Shingle
Roof System Types:	New or existing Asphalt Shingle Roof Systems
Deck Type:	Wood, Non-insulated
Deck Description:	New Construction ¹⁹ / ₃₂ " or greater plywood or wood plank, or for re-roofing ¹⁵ / ₃₂ " or greater plywood.
Slope Range:	2": 12" or greater

Deck Attachment:	In accordance with applicable Building Code, but in no case shall it be less than 8d annular ring shank nails spaced 6" o.c. In reroofing, where the deck is less than ¹⁹ / ₃₂ " thick (Minimum ¹⁵ / ₃₂ ") The above attachment method must be in addition to existing attachment.
Underlayment:	Over solar array area, apply minimum one layer of GAF Materials Corporation Versashield underlayment installed as per current NOA.
Fire Barrier:	Refer to a current fire directory listing for fire ratings of this roofing system assembly as well as the location of the fire barrier within the assembly. See Limitation # 1.
Starter Shingles:	Install starter course of asphalt shingle and the first two or more rows of shingle along the eave edge as per the shingle Notice of Acceptance.
Flashing: (Transition from Shingles to Solar Array)	<p>Install a 16" wide ASTM D 1970 self-adhered underlayment having a current NOA over the top half of the top row of the starter asphalt shingles and onto the Versashield underlayment.</p> <p>Or</p> <p>Install minimum 14" G-90 26 Gauge Galvanized Steel. One nail per solar shingle installed 2-3" up from the bottom of metal flashing. Fasten the lower corners of the metal flashing with one nail 2" in from the edge, 2-3" up from the bottom. Apply ASTM D4586 roofing cement to the nails and under asphalt shingle tabs 1/16" - 1/8" thick, 8" wide on the sides of the solar array.</p>



Solar Shingle and Accessories:

Install the DOW POWERHOUSE™ Solar Shingle system starting with the Starter Integrated Flashing Assembly installed completely over the Versashield underlayment and flashing with four (4) 1-1/4” or longer corrosion resistant annular ring shank nails in the placement guides in the piece.

Install the DOW POWERHOUSE™ Solar Shingles by removing the release tape and pressing it into the flashing and asphalt shingle. Secure the DOW POWERHOUSE™ Solar Shingle with four (4) 1-1/4” or longer corrosion resistant annular ring shank nails in the placement guides in the piece.

At the end of the run, use the Row-to-Row Integrated Flashing Piece Assembly – Left Hand installed with (4) 1-1/4” or longer corrosion resistant annular ring shank nails in the placement guides in the piece.

The next row of DOW POWERHOUSE™ Solar Shingles is installed in the same manner using the appropriate integrated flashing pieces.

**Flashing:
(Transition from Solar Array to Shingle)**

Install minimum 14” ASTM D 6164 Self adhered cap sheet having a current NOA over solar shingles at the top of the array.

Asphalt Shingles:

All asphalt shingles overlapping the plastic Integrated Flashing Pieces and the DOW POWERHOUSE™ Solar Shingle shall be secured to the 16” wide flashing, using Heilobond 600BT adhesive tape.

Or

Secured to the ASTM D6164 Self adhered cap sheet using ASTM D4586-roofing cement applied under the asphalt shingle tabs. Cover integrated flashing on either side and align with top glass of solar shingles with selvage edge up at the bottom.



System (2):	DOW POWERHOUSE™ Solar Shingle
Roof System Types:	New or existing Slate, Shake, Synthetic or Polymeric Slate & Shake Roof Systems having an NOA
Deck Type:	Wood, Non-insulated
Deck Description:	New Construction ¹⁹ / ₃₂ " or greater plywood or wood plank, or for re-roofing ¹⁵ / ₃₂ " or greater plywood.
Slope Range:	4": 12" or greater

Deck Attachment: In accordance with applicable Building Code, but in no case shall it be less than 8d annular ring shank nails spaced 6" o.c. In reroofing, where the deck is less than ¹⁹/₃₂" thick (Minimum ¹⁵/₃₂") The above attachment method must be in addition to existing attachment.

Underlayment: Over solar array area, apply minimum one layer of GAF Materials Corporation Versashield underlayment installed as per current NOA.

Fire Barrier: Refer to a current fire directory listing for fire ratings of this roofing system assembly as well as the location of the fire barrier within the assembly. See Limitation # 1.

Starter Shingles: Install starter course of asphalt shingle and the first two or more rows of shingle along the eave edge as per the shingle Notice of Acceptance.

Flashing: Install a 16" wide ASTM D 1970 self-adhered underlayment having a current NOA over the top half of the top row of the starter asphalt shingles and onto the Versashield underlayment.

Install Minimum 12" G-90 26 Gauge Galvanized Steel over 16" wide self-adhered underlayment. Apply two nails under each solar shingle 2-3" up from the bottom of the metal flashing.

Solar Shingle and Accessories: Install the DOW POWERHOUSE™ Solar Shingle system starting with the Starter Integrated Flashing Assembly installed completely over the Versashield underlayment and flashing with four (4) 1-1/4" or longer corrosion resistant annular ring shank nails in the placement guides in the piece.

Install the DOW POWERHOUSE™ Solar Shingles by removing the release tape and pressing it into the flashing. Secure the DOW POWERHOUSE™ Solar Shingle with four (4) 1-1/4" or longer corrosion resistant annular ring shank nails in the placement guides in the piece.

At the end of the run, use the Row-to-Row Integrated Flashing Piece Assembly – Left Hand installed with (4) 1-1/4" or longer corrosion resistant annular ring shank nails in the placement guides in the piece.

The next row of DOW POWERHOUSE™ Solar Shingles is installed in the same manner using the appropriate integrated flashing pieces.

All approved roof overlapping the plastic Integrated Flashing Pieces or the DOW POWERHOUSE™ Solar Shingle shall be secured to the minimum 16" wide ASTM D6164 Self adhered cap sheet with nails.



BUILDING PERMIT REQUIREMENTS:

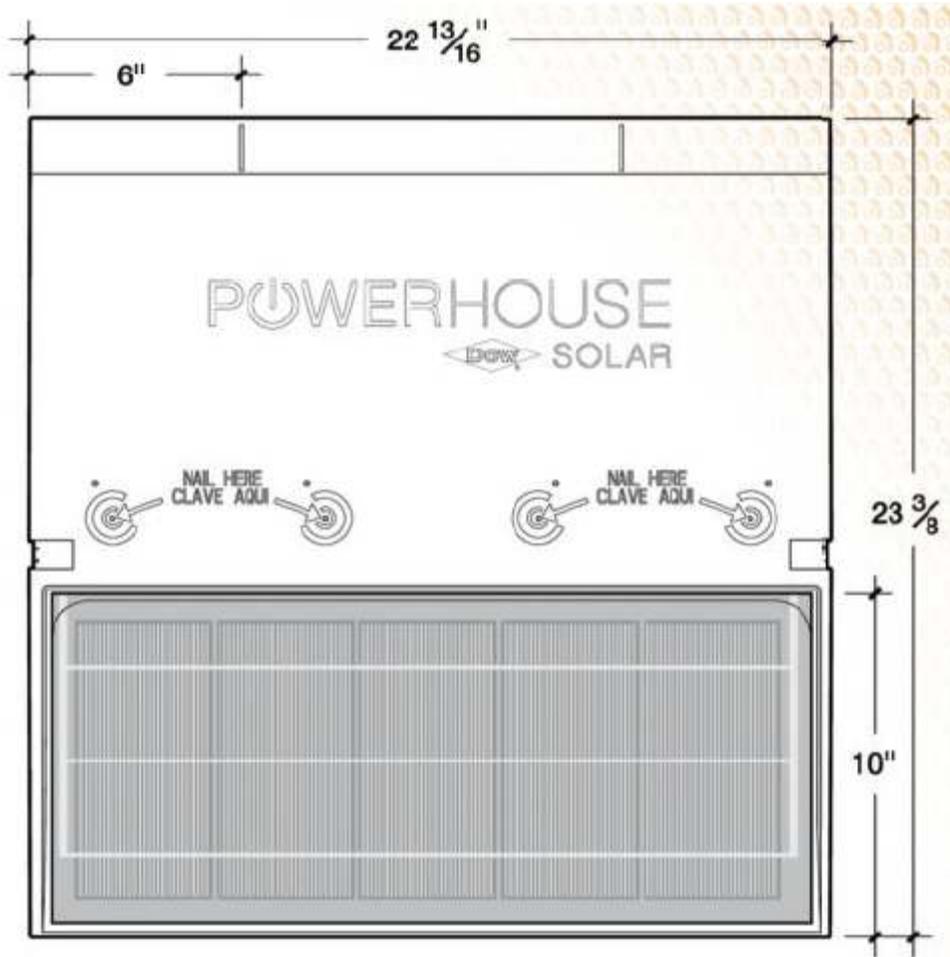
1. Any other documents required by the Building Official or applicable Building Code in order to properly evaluate the installation of this system.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire rating of this product.
2. DOW POWERHOUSE™ Solar Shingles and Integrated Flashing Pieces shall be applied in strict accordance with manufacturer's published application instructions and with the conditions and limitations specified herein.
3. DOW POWERHOUSE™ Solar Shingles and Integrated Flashing Pieces shall only be used with Miami-Dade Approved Asphalt Shingle Roof Systems.
4. Shall not be installed on roof mean heights in excess of 33 ft.
5. DOW POWERHOUSE™ Solar Shingles shall be installed a minimum distance of 33-3/8" away from any roof ridges, rakes, or valleys
6. All projects have to be reviewed and approved by The Dow Chemical Company Dow Solar before installation begins. Any defects in the roofing substrates shall be corrected by contractor.
7. All electrical components and wiring installations shall be in compliance with applicable Building Code Requirements.
8. Location of installation is limited to the areas within the roof system that provides adequate drainage and does not pond water.
9. DOW POWERHOUSE™ Solar Shingle shall not be installed in areas where drains or roof penetrations exist.
10. This NOA is limited to the use of the DOW POWERHOUSE™ Solar Shingle as a roof covering; the electrical and solar performance of this system is outside the scope of this approval.
11. All products listed herein shall have an unannounced follow-up quality control program from an approved listing agency. Follow up test results shall be made available to Miami-Dade Product Control upon request.
12. Change in materials, use, or manufacture of any of the products listed herein shall be cause for termination of the NOA.
13. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 61G20-3 of the Florida Administrative Code.
14. DOW POWERHOUSE™ Solar Shingles and Trim Pieces shall be properly labeled for manufacturing traceability.
15. All approved products listed herein shall bear the imprint or identifiable marking of the manufacturer's name or logo and following statement: "Miami-Dade County Product Control Approved" or the Miami-Dade County Product Control Seal as shown below.

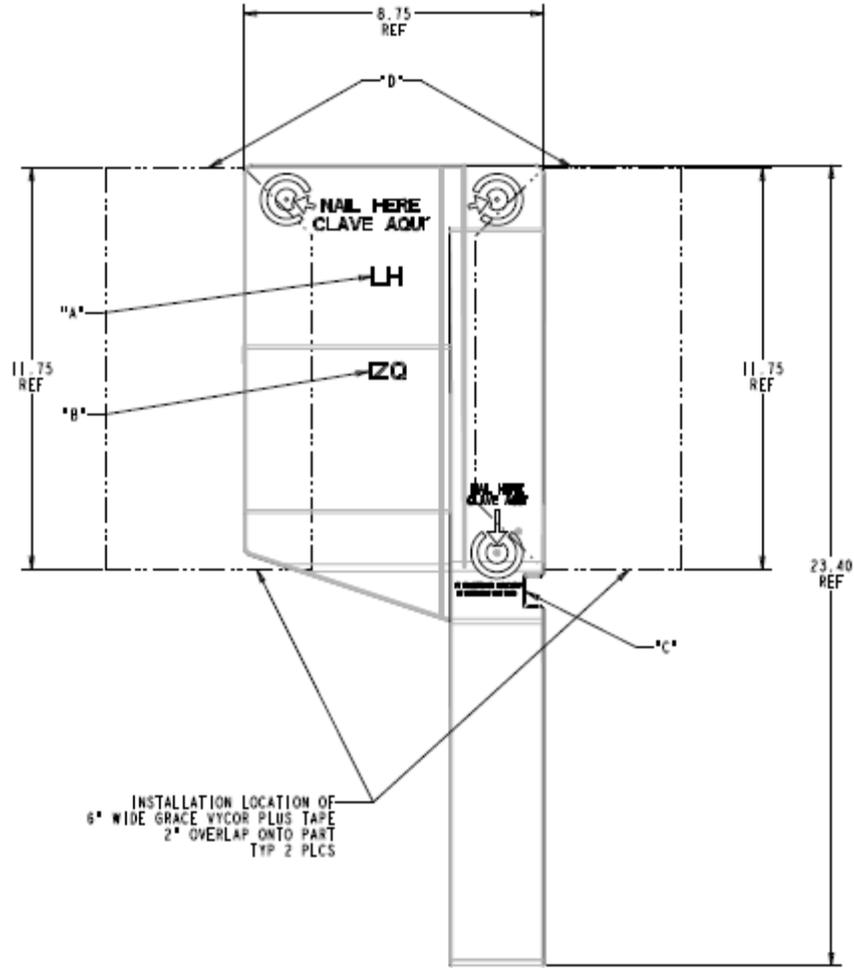


DETAIL DRAWINGS

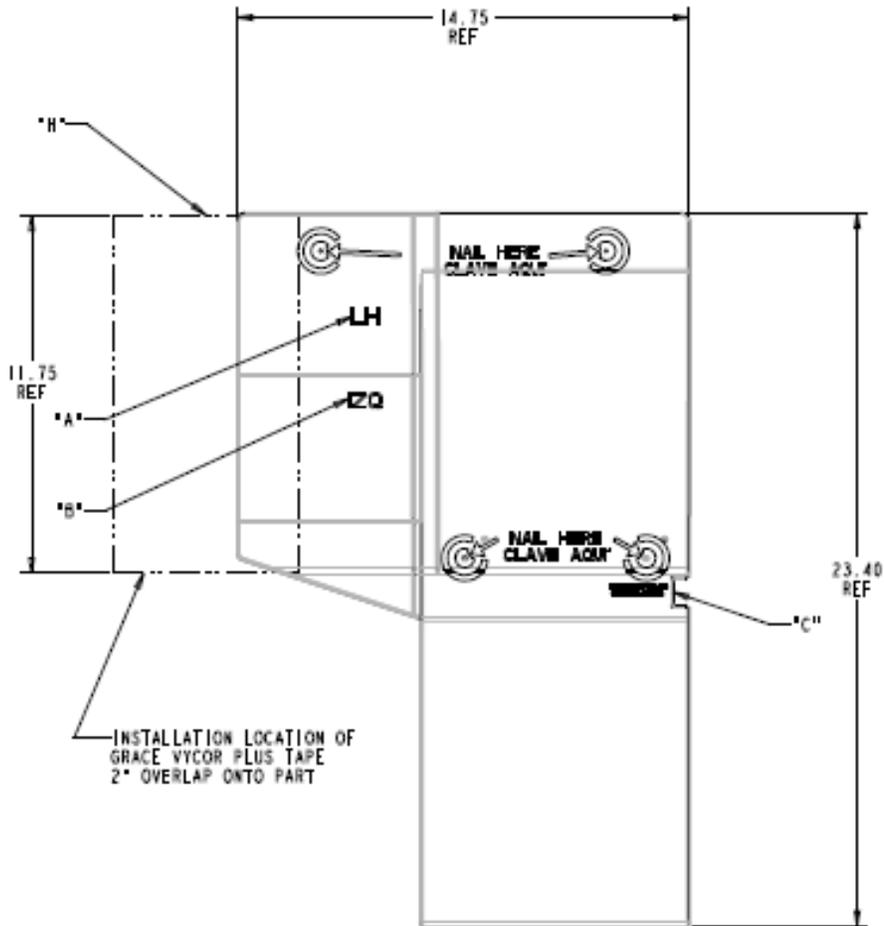


DOW POWERHOUSE™ SOLAR SHINGLE

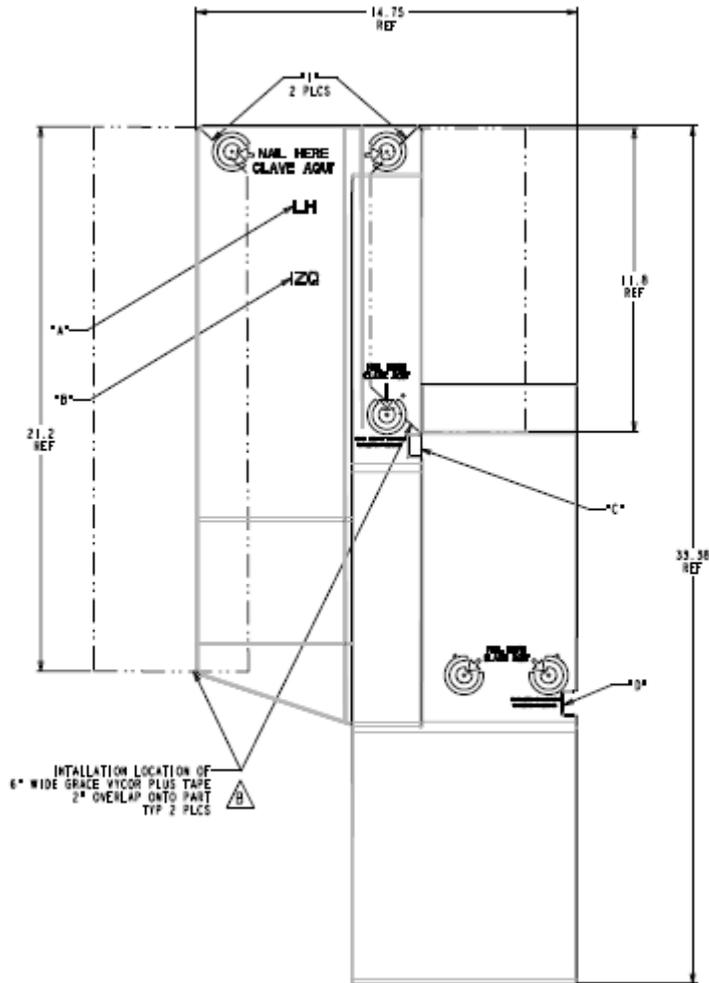




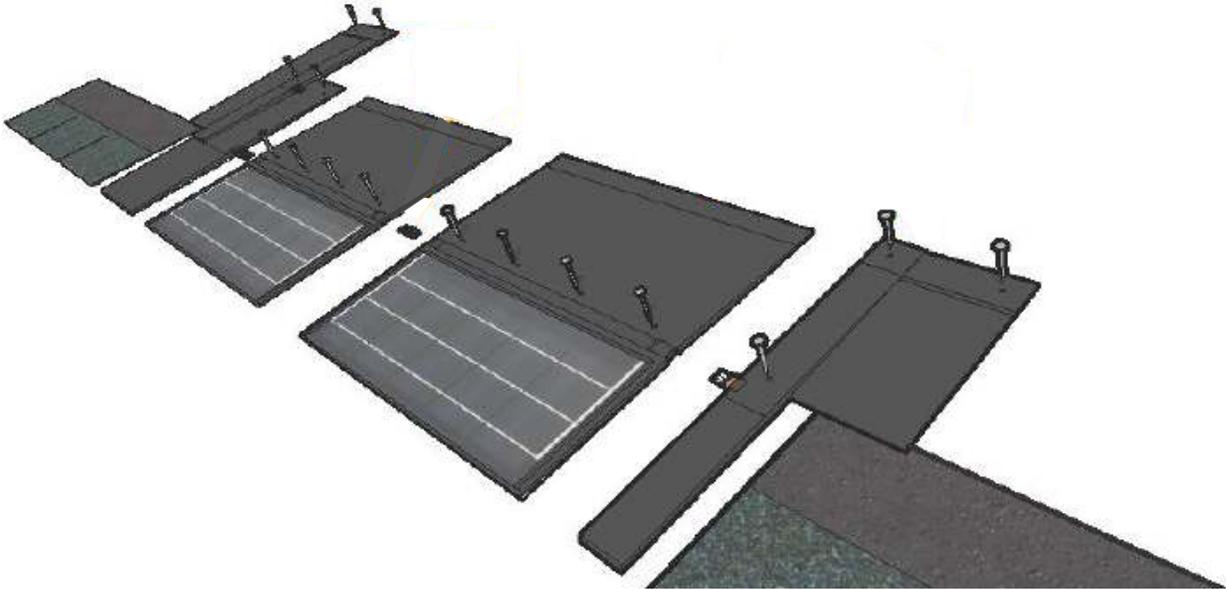
**STARTER INTEGRATED FLASHING PIECE ASSEMBLY – LEFT HAND (SHOWN)
RIGHT HAND SYMMETRICALLY OPPOSITE**



**THROUGH ROOF INTEGRATED FLASHING ASSEMBLY – LEFT HAND (SHOWN)
RIGHT HAND SYMMETRICALLY OPPOSITE**



**ROW TO ROW INTEGRATED FLASHING ASSEMBLY – LEFT HAND (SHOWN)
RIGHT HAND SYMMETRICALLY OPPOSITE**



END OF THIS ACCEPTANCE