MIAMI-DADE

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

NOTICE OF ACCEPTANCE (NOA)

Dow Roofing Systems, LLC.
Nine Sullivan Road
Holyoke, MA 01040

SCOPE:
This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) 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 Division (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. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division 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 TPO Single Ply Roofing System over Concrete Deck

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 consists of pages 1 through 11.
The submitted documentation was reviewed by Alex Tigera.

MIAMI-DADE COUNTY APPROVED

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply
Material:	TPO
Deck Type:	Concrete
Maximum Design Pressure	-217.5 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
DOW TIEMPO+ 2000 TPO 045	45 mils thick	ASTM D 6878	Polyester reinforced Thermoplastic Olefin single ply membrane.
DOW TIEMPO+ 2000 TPO 060	60 mils thick	ASTM D 6878	Polyester reinforced Thermoplastic Olefin single ply membrane.
DOW TIEMPO+ 2000 TPO 080	80 mils thick	ASTM D 6878	Polyester reinforced Thermoplastic Olefin single ply membrane.
Dow 2000 Insulation Adhesive	5 gal.		A one part, cold-applied adhesive
Dow 2000 Insulation Adhesive (2-Part Urethane)	5 gal.		A two-component, cold-applied adhesive
TACC FA-141 adhesive	5 gal.		
Dow 2000 Membrane Adhesive (Solvent Based)	5 gal.		A synthetic rubber-based adhesive used on single ply roofing membranes.
Dow 2000 Membrane Adhesive (Low VOC)	5 gal.		A synthetic rubber-based adhesive used with fully or partially adhered TPO roofing membrane systems.
Dow 2000 Membrane Adhesive (Water based)	5 gal.		A polymeric, wet laying (single side application), low-VOC adhesive.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Dow Termico Polyisocyanurate Insulation, ValuTherm, JM ISO 3	Polyisocyannurate insulation	Dow Roofing Systems, LLC.
Dow Termico Polyisocyanurate Insulation Plus	Isocyanurate Insulation with wood fiberboard facer	Dow Roofing Systems, LLC.
Invinsa Roof Board	High density polyisocyannurate board	Johns Manville
Dens Deck	Silicone treated gypsum	G-P Products
Securock	Fiber reinforced coverboard	USG Corp.
High Density Fiberboard	High Density Polyisocyanurate board	Johns Manville

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1	Dow 2000 Insulation Fasteners #12	Insulation and membrane fastener	Various	Dow Roofing Systems, LLC.
2	Dow 2000 Metal Insulation Plates 3"	Insulation Plate	3" diameter	Dow Roofing Systems, LLC.
3	UltraFast Square Recessed Metal Plates	Insulation Plate	N/A	Johns Manville
4	Dow 2000 Fasteners #15	Insulation and membrane fastener	Various	Dow Roofing Systems, LLC.
5	Dow 2000 Fasteners #21	Insulation and membrane fastener	Various	Dow Roofing Systems, LLC.
6	Dow 2000 Metal Seam Plates 2-3/8"	Insulation Plate	Various	Dow Roofing Systems, LLC.
7	Dow 2000 Metal Seam Plates 3"	Insulation Plate	Various	Dow Roofing Systems, LLC.

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Factory Mutual Research Corporation	3032235	FM 4470	06/27/08
	3030259	FM 4470	06/02/08
	3030383	FM 4470	05/13/08
	3033700	FM 4470	10/10/08
Momentum Technologies	RX10A8A	Physical Properties	08/15/08
	RX14C8A	Physical Properties	09/15/05
	RX10A8B	Physical Properties	09/23/08
Underwriters Laboratories, Inc.	02NK47751	Fire Classification	10/10/03
	04NK04226	Fire Classification	11/12/04
	07NK09830	Fire Classification	04/18/08

APPROVED ASSEMBLIES:

Membrane Type: Single Ply, Thermoplastic, TPO

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(1): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Insulation for Base Layer	Fastener Type (Table 3)	Fastener Density/ft^2
DOW TERMICO POLYISOCYANURATE INSULATION, DOW TERMICO POLYISOCYANURATE PSI-25 INSULATION, JM ISO 3 or ValuTherm		
Minimum 1.5" thick	N/A	N/A

Insulation for Top Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Invinsa Board, DensDeck or high Density Fiberboard		
Minimum 1/2" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" wide ribbons of JM Urethane Insulation Adhesive or JM Two Part Urethane Insulation Adhesive, spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: DOW TIEMPO+ 2000 TPO adhered to insulation using TACC FA-141 adhesive, Dow 2000 Membrane Adhesive (Solvent-Based), or Dow 2000 Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq.

Maximum Design Pressures: -217.5 psf. (See General Limitation #9)

Membrane Type:	Single Ply, Thermoplastic, TPO
Deck Type 3I:	Concrete, Insulated
Deck Description:	Min. 2500 psi structural concrete or concrete plank
System Type A(2):	One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Insulation for Base Layer	**Fastener Type (Table 3)**	**Fastener Density/ft^2**
DOW TERMICO POLYISOCYANURATE INSULATION, DOW TERMICO POLYISOCYANURATE PSI-25 INSULATION, JM ISO 3 or ValuTherm Minimum 1.5" thick	N/A	N/A

Insulation for Top Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Invinsa Board, DensDeck or high Density Fiberboard Minimum 1/4" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" wide ribbons of JM Two Part Urethane Insulation Adhesive, spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane:	DOW TIEMPO+ 2000 TPO adhered to insulation using TACC FA-141 adhesive, Dow 2000 Membrane Adhesive (Solvent-Based) or Dow 2000 Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. JM TPO adhered to insulation using Dow 2000 Membrane Adhesive (Water-Based) can also be applied to substrate at a rate of 0.84 gal/sq.
Maximum Design Pressures:	-105 psf. (See General Limitation #9)

Membrane Type:	Single Ply, Thermoplastic, TPO
Deck Type 3I:	Concrete, Insulated
Deck Description:	Min. 2500 psi structural concrete or concrete plank
System Type A(3):	One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Insulation for Base Layer	**Fastener Type (Table 3)**	**Fastener Density/ft^2**
DOW TERMICO POLYISOCYANURATE INSULATION, DOW TERMICO POLYISOCYANURATE PSI-25 INSULATION, JM ISO 3 or ValuTherm Minimum 1.5" thick	N/A	N/A

Insulation for Top Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Invinsa Board, DensDeck or high Density Fiberboard Minimum 1/4" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in ¾" wide ribbons of JM Urethane Insulation Adhesive, or JM Weather Tite One Step Foamable Adhesive, spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane:	DOW TIEMPO+ 2000 TPO adhered to insulation using TACC FA-141 adhesive, Dow 2000 Membrane Adhesive (Solvent-Based) or Dow 2000 Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Dow 2000 Membrane Adhesive (Water-Based) can also be applied to substrate at a rate of 0.84 gal/sq.
Maximum Design Pressures:	-75 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, TPO

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type C(1): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Insulation for Base Layer	Fastener Type	Fastener Density/ft^2
DOW TERMICO POLYISOCYANURATE INSULATION, DOW TERMICO POLYISOCYANURATE PSI-25 INSULATION, JM ISO 3 or ValuTherm Minimum 1.5" thick	1, 2, 3	1:1.78 ft^2

Insulation for Top Layer (Optional over OSB)	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Invinsa Board, Dens Deck or high Density Fiberboard Minimum 1/2" thick	1, 2, 3	1:1.78 ft^2

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: DOW TIEMPO+ 2000 TPO adhered to insulation using TACC FA-141 adhesive, Dow 2000 Membrane Adhesive (Solvent-Based), or Dow 2000 Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq.

Maximum Design Pressures: -52.5 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, TPO

Deck Type 2I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type C(2): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Insulation for Base Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DOW TERMICO POLYISOCYANURATE INSULATION, DOW TERMICO POLYISOCYANURATE PSI-25 INSULATION, JM ISO 3 or ValuTherm		
Minimum 1.5" thick	N/A	N/A

Insulation for Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
OSB		
Minimum 7/16" thick	1, 2, 3	1:1.78 ft^2

Insulation for Top Layer (Optional over OSB)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Dens Deck or Securock		
Minimum 1/4" thick	1, 2, 3	1:1.78 ft^2

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: DOW TIEMPO+ 2000 TPO adhered to insulation using Dow 2000 Membrane Adhesive (Solvent-Based) applied to both the membrane and substrate for a combined rate of 1.67 gal/sq.

Maximum Design Pressures: -75 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, TPO

Deck Type 2I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type C(3): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Insulation for Base Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
DOW TERMICO POLYISOCYANURATE INSULATION, DOW TERMICO POLYISOCYANURATE PSI-25 INSULATION, JM ISO 3 or ValuTherm Minimum 1.5" thick	1, 2, 3	1:2 ft^2

Insulation for Top Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Invinsa Board, Dens Deck or high Density Fiberboard Minimum 1/2" thick	1, 2, 3	1:2 ft^2

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: DOW TIEMPO+ 2000 TPO adhered to insulation using TACC FA-141 adhesive, Dow 2000 Membrane Adhesive (Solvent-Based) or Dow 2000 Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Dow 2000 Membrane Adhesive (Water-Based) can also be applied to substrate at a rate of 0.84 gal/sq.

Maximum Design Pressures: -45 psf. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, TPO

Deck Type 2I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type C(4): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Insulation for Base Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
DOW TERMICO POLYISOCYANURATE INSULATION, DOW TERMICO POLYISOCYANURATE PSI-25 INSULATION, JM ISO 3 or ValuTherm		
Minimum 2" thick	1, 2, 3	1:4 ft^2

Insulation for Top Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Invinsa Board, Dens Deck or high Density Fiberboard		
Minimum 1/2" thick	1, 2, 3	1:4 ft^2

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: Apply DOW TIEMPO+ 2000 TPO adhered with Dow 2000 Membrane Adhesive (Solvent-Based), Dow 2000 Membrane Adhesive (Low VOC), TACC FA-141applied to both the membrane and substrate for a combined rate of 1.67 gal/sq (0.68 L/m^2).

Maximum Design Pressures: -45 psf. (See General Limitation #9)

CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**

END OF THIS ACCEPTANCE