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)

Tamko Roofing Products, Inc.
P.O. Box 1404
Joplin, MO 64802

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 High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: TAMKO Modified Bitumen Roof System Over Concrete Decks

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 consists of pages 1 through 20.
The submitted documentation was reviewed by Frank Zuloaga, RRC

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	SBS/APP, Modified Bitumen
Material:	SBS
Deck Type:	Concrete
Maximum Design Pressure	**-622.5 psf**
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
Awaplan 170 FR	Roll weight: 98 lbs.; 33' 11" x 39 $^{3}/_{8}$"	ASTM D 5147 ASTM D 6164 Type I Grade G	A 180 g/m² polyester reinforced SBS modified bitumen membrane surfaced with granules and treated for additional fire resistance. Applied in hot asphalt or cold adhesive.
Awaplan 170™	Roll weight: 98 lbs.; 33' 11" x 39 $^{3}/_{8}$"	ASTM D 5147 ASTM D 6164 Type I Grade G	A 180 g/m² polyester reinforced SBS modified bitumen membrane surfaced with granules. Applied in hot asphalt or cold adhesive.
Awaplan Heat Welding™	Roll weight: 96 lbs.; 25' 5" x 39 $^{3}/_{8}$"	ASTM D 5147 ASTM D 6164 Type II Grade G	A 250 g/m² polyester reinforced SBS modified bitumen membrane surfaced with granules. Applied by torch and also used as a walkway material.
Awaplan Premium FR™	Roll weight: 101 lbs.; 33' 11" x 39 $^{3}/_{8}$"	ASTM D 5147 ASTM D 6164 Type II Grade G	A 250 g/m² polyester reinforced modified bitumen membrane surfaced with granules. Applied by hot asphalt and also used as a walkway material.
Awaplan Premium™	Roll weight: 101 lbs.; 33' 11" x 39$^{3}/_{8}$"	ASTM D 5147 ASTM D 6164 Type II Grade G	A 250 g/m² polyester reinforced SBS modified bitumen membrane surfaced with granules. Applied in hot asphalt or cold adhesive, and also used as a walkway material.
Awaflex	Roll weight: 76 lbs; 35.9' x 36"	ASTM D 5147	SBS modified cap sheet constructed with a 155gm/m² non- woven polyester mat saturated with asphalt, coated on both sides with SBS rubber modified asphalt and surfaced with ceramic granules for UV protection.

Product	Dimensions	Test Specification	Product Description
Awaflex FR	Roll weight: 76 lbs; 35.9' x 36"	ASTM D 5147	SBS FR modified cap sheet constructed with a 155gm/m² non- woven polyester mat saturated with asphalt, coated on both sides with SBS rubber modified asphalt, FR treated, and surfaced with ceramic granules for UV protection.
Awaplan Versa-Smooth	Roll weight: 100 lbs. 33' 11" x $39^3/_8$"	ASTM D 5147 ASTM D 6164 Type I, Grade S	A 180 g/m² polyester reinforced SBS modified bitumen membrane. Applied in hot asphalt, by torch, or mechanically fastened, as a base ply in 2 ply modified systems.
Awaplan Versa-Flex	Roll weight: 76 lbs; 33’ 11” x 39-3/8”	ASTM D 5147 ASTM D 6164 Type I, Grade S	A 170 g/m² nonwoven polyester reinforced SBS modified bitumen membrane. Applied in hot asphalt, as a base ply in 2 ply modified systems.
Base-N-Ply®	Roll weight: 72 lbs.; 97’-6” x $39^3/_8$"	ASTM D 4601 Type II	Asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
Glass-Base™	Roll weight: 72 lbs.; 97’ 6” x $39^3/_8$"	ASTM D 4601 Type II	Asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
Tam-Cap™	Roll weight: 83 lbs.; 32’ 11” x $39^3/_8$"	ASTM D 228 Type I	Asphalt impregnated and coated felt surfaced with mineral granules used as the top ply in conventional built-up roof membranes.
Tam-Glass Premium™	Roll weight: 53 lbs.; 161’ 9” x $39^3/_8$"	ASTM D 2178 Type VI	Asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
Tam-Ply IV™	Roll weight: 44 lbs.; 161’ 9” x $39^3/_8$"	ASTM D 2178 Type IV	Asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
Type 43 Base Sheet	Roll weight: 85 lbs.; 72' x 36"	ASTM D 2626	An organic felt reinforced asphalt base sheet. Applied in hot asphalt or mechanically fastened.
Vapor-Chan™	Roll weight: 86 lbs.; 32' 11” x $39^3/_8$"	ASTM D 4897	Heavy duty fiber glass base sheet impregnated and coated on both sides with asphalt with or without a fine mineral stabilizer. Surfaced on the bottom side with coarse mineral granules embedded in hot asphaltic coating.
Versa-Base FR™	Roll weight: 60 lbs.; 48’ 2” x $39^3/_8$"	ASTM D 5147	Asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
Versa-Base™	Roll weight: 94 lbs.; 48’ 2” x $39^3/_8$"	ASTM D 5147 ASTM D 6163 Type I, Grade S	Asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.

Product	Dimensions	Test Specification	Product Description
Versa-Cap FR™	Roll weight: 87 lbs.; 33' x $39^3/_8$"	ASTM D 5147	A fiberglass reinforced, mineral surfaced, SBS modified bitumen top membrane.
Tam-Pro Fibered Emulsion	5 gallon	ASTM D 1227, type IV	Protective coating.
Tam-Pro Primer	5 gallon	ASTM D 41	Asphalt based primer
Tam-Pro Fire Rated Fibered Aluminum Roof Coating	5 gallons	ASTM D2824, type III	Flame Retardant protective coating

APPROVED INSULATIONS:

TABLE 2

Product	Dimensions	Test Specification	Product Description	Manufacturer
ACFoam II, ACFoam Composite	various	PA 110	Polyisocyanurate foam insulation	Atlas Energy Products (with current NOA)
ConPearl	various	PA 110	Expanded perlite mineral fiber	Conglas (with current NOA)
Esgard Fiberboard	various	PA 110	Wood fiber board	EMCO Ltd. (with current NOA)
GAF Permalite	various	PA 110	Expanded mineral fiber	GAF Mat'l. Corp. (with current NOA)
GAF Fiberboard	various	PA 110	Wood fiber board	GAF Mat'l. Corp. (with current NOA)
High Density Wood Fiberboard	various	PA 110	Wood fiber insulation board	Generic (with current NOA)
Perlite Insulation	various	PA 110	Perlite insulation board	Generic (with current NOA)
Dens-Deck	various	PA 110	Gypsum insulation board	Georgia-Pacific (with current NOA)
Armor Board Regular Fiberboard	various	PA 110	Wood fiber board	Honeywell Int'l. Inc. (with current NOA)
Hubert Fiberboard	various	PA 110	Wood fiber board	Huebert Fiberboard, Inc. (with current NOA)
E'NRG'Y-2, PSI-25	various	PA 110	Polyisocyanurate foam insulation	Johns Manville Corp. (with current NOA)
Fesco Board, Retro-Fit	various	PA 110	Expanded mineral fiber	Johns Manville Corp.

Product	Dimensions	Test Specification	Product Description	Manufacturer
Board				(with current NOA)
Kop-R Wood Fiber	various	PA 110	Polyisocyanurate foam insulation	Koppers Industries, Inc. (with current NOA)
Structodek, Structodek FS	various	PA 110	Wood fiber board	Masonitec (with current NOA)

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Dekfast Fasteners #14 & #15	Insulation fastener for wood, steel and concrete decks		Construction Fasteners Inc.
2.	Dekfast Hex Plate	Galvalume hex stress plate.	2 7/8" x 3 1/4"	Construction Fasteners Inc.
3.	#14 & #15 Roofgrip Fasteners	Insulation fastener for wood, steel and concrete decks.		ITW Buildex Corp.
4.	Metal Plate	Galvalume stress plate.	3” round 3” square	ITW Buildex Corp.
5.	Olympic Fastener #14	Insulation fastener		Olympic Manufacturing Group, Inc.
6.	Olympic G-2	3.5" round galvalume AZ55 steel plate	3.5" round	Olympic Manufacturing Group, Inc.
7.	Olympic Standard	3" round galvalume AZ50 steel plate	3" round	Olympic Manufacturing Group, Inc.
8.	#14 HD Insul-Fixx Fastener	Insulation fastener for wood, steel and concrete decks		SFS Stadler, Inc.
9.	Insul-Fixx S Plate	3" round galvalume AZ50 steel plate	3" round	SFS Stadler, Inc.
10.	Tru-Fast HD	Insulation fastener for wood, steel and concrete decks		The Tru-Fast Corp.
11.	Tru-Fast Plates	3" round galvalume AZ55 steel plate	3" round	The Tru-Fast Corp.

EVIDENCE SUBMITTED:

Test Agency/Identifier	Name	Report	Date
Underwriters Laboratories	Wind Uplift	93NK8375	02.17.94
Factory Mutual Research Corporation	Comparitive Rupture Testing	J.I. 4D0A7.AM	10.21.98
	Class 1 Fire	J.I. 0Z4A3.AM	08.27.97
	Class 1 Fire; I-90 Windstorm Classification	J.I.1D4A7.AM	10.20.97
	Class 1 Fire; I-90 Windstorm Classification	J.I. 3B5A9.AM	08.27.98
Dynatech Engineering Corporation	Wind Uplift Testing	4440.05.95-2	05.01.95
	Wind Uplift Testing	4440.05.95-1	05.01.95
Exterior Research & Design, LLC.	Wind Uplift Testing	4444.06.98-1	06.15.98
Exterior Research & Design, LLC.	Wind Uplift Testing	4441.04.99-1	04.09.99
Factory Mutual Research Corporation	Class 4470	3010612	04.16.01

APPROVED ASSEMBLIES:

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type A: One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam II Minimum 1.2" thick	**N/A**	**N/A**
UltraGard Gold Minimum 1.3" thick	**N/A**	**N/A**
E"NRG"Y-2, PSI-25 Minimum 1.4" thick	**N/A**	**N/A**

Top or Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ConPerl, GAFTEMP Permalite, Fesco Board, High Density Wood Fiberboard, Structodek FS, Retro-Fit Minimum ½" thick	**N/A**	**N/A**
ACFoam Composite, E'NRG'Y-2 Composite Minimum 1.5" thick	**N/A**	**N/A**

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) One ply of Glass-Base, Base-N-Ply, Versa-Base, Versa-Smooth, Awaplan VersaFlex, or Vapor-Chan adhered to the substrate with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: One or more plies of Tam-Glass Premium, Tam-Ply IV, Glass-Base, Base-N-Ply, Awaplan VersaFlex, Versa-Smooth, or Versa-Base adhered with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. Versa-Smooth may be adhered by torch.

Membrane: Awaplan Premium, Awaplan Premium FR, Awaplan 170, Awaflex, Awaflex FR,, Awaplan 170 FR, Awaplan Versa-Smooth, Awaplan VersaFlex, or Versa-Cap FR adhered with a full mopping of approved asphalt applied at 400° F at the point of contact and at a rate of 20-40 lbs./sq.; or Awaplan Heat Welding or Versa-Smooth adhered by torch.

Surfacing: Optional to mineral surfaced Membranes. Required for smooth surfaced membranes:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq..
2. Tam-Pro FR Aluminum Coating applied at 1½ gal./sq. or Tam-Pro Fibered Emulsion at 3 gal./sq.

Maximum Design Pressure:

-222.5 psf	(for minimum 1.5" thick Approved polyisocyanurate followed by minimum ¾" thick Approved perlite applied in hot asphalt.) (See General Limitation #9)
-230 psf	(for minimum 1.5" thick Approved polyisocyanurate followed by minimum ¼" thick Dens Deck or minimum ½" Approved High Density Wood Fiberboard applied in hot asphalt.) (See General Limitation #9)
-265 psf	(for minimum 1.5" thick Approved polyisocyanurate followed by minimum ½" thick Approved High Density Wood Fiberboard applied in hot asphalt.) (See General Limitation #9)
-200 psf	(for minimum 1.5" thick ACFoam II Composite or E'NRG'Y-2 Composite applied in hot asphalt.) (See General Limitation #9)
-230 psf	(for minimum ¼" thick Dens Deck applied in hot asphalt with no underlying insulation.) (See General Limitation #9)
-80 psf	(minimum ½" thick any combination of approved isocyanurate, perlite, or wood fiber applied in hot asphalt.) (See General Limitation #9)
-240 psf	(for minimum ½" thick Retrofit applied in hot asphalt with no underlying insulation. Requires one of Versa Base.) (See General Limitation #9)
-382.5 psf	(for minimum ½" thick Approved High Density Wood Fiberboard applied in hot asphalt with no underlying insulation. Requires one ply of Versa Base.) (See General Limitation #9)
-45 psf	(for all other applications) (See General Limitation #9)

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(1): Base layer of insulation mechanically fastened; top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam II, White Line Minimum 1.2" thick	**1, 3, 5 or 10**	**1:2 ft.^{2}**
ACFoam II Minimum 1.4" thick	**1, 3, 5 or 10**	**1:4 ft.^{2}**
ACFoam Composite Minimum 1.5" thick	**1, 3, 5 or 10**	**1:4 ft.^{2}**
E"NRG"Y-2, PSI-25 Minimum 1.4" thick	**1, 3, 5 or 10**	**1:2 ft.^{2}**
UltraGard Gold Minimum 1.3" thick	**1, 3, 5 or 10**	**1:2 ft.^{2}**
ConPerl, GAFTEMP Permalite, Fesco Board, Armor Board Regular, Esgard, Celotex Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard, Kop-R Wood Fiber, Structodek Minimum 1" thick	**1, 3, 5 or 10**	**1:2 ft.^{2}**

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

(Optional) Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ConPerl, GAFTEMP Permalite, Fesco Board, Retrofit Minimum ½" thick	**N/A**	**N/A**
ACFoam Composite Minimum 1.5" thick	**N/A**	**N/A**

Note: Apply top layer of insulation in a full mopping of any approved mopping hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet:	(Optional) One ply of Glass-Base, Base-N-Ply, Versa-Base, Versa-Smooth, Awaplan VersaFlex, or Vapor-Chan adhered to the substrate with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Ply Sheet:	One or more plies of Glass Base, Tam-Glass Premium, Tam-Ply IV, Base-N-Ply, Awaplan VersaFlex, Versa-Smooth, or Versa-Base adhered with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.. Versa-Smooth may be adhered by torch.
Membrane:	Awaplan Premium, Awaplan Premium FR, Awaplan 170, Awaflex, Awaflex FR,, Awaplan 170 FR, Awaplan Versa-Smooth, Awaplan VersaFlex, or Versa-Cap FR adhered with a full mopping of approved asphalt applied at 400° F at the point of contact and at a rate of 20-40 lbs./sq.; or Awaplan Heat Welding or Versa-Smooth adhered by torch.
Surfacing:	Optional to mineral surfaced Membranes. Required for smooth surfaced membranes: 1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq.. 2. Tam-Pro FR Aluminum Coating applied at 1½ gal./sq. or Tam-Pro Fibered Emulsion at 3 gal./sq.
Maximum Design Pressure:	**-45 psf** (See General Limitation #9.)

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(2): Base layer of insulation mechanically fastened; top layer adhered with approved asphalt.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam II, E'NRG'Y-2, PSI-25 Minimum 1.5" thick	**5 or 8**	**1:1.33 ft.^{2}**

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiberboard Minimum ½" thick	**N/A**	**N/A**

Note: Apply top layer of insulation in a full mopping of any approved mopping hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) One ply of Glass-Base, Base-N-Ply, Versa-Base, Versa-Smooth, Awaplan VersaFlex, or Vapor-Chan adhered to the substrate with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: One or more plies of Glass Base, Tam-Glass Premium, Tam-Ply IV, Base-N-Ply, Awaplan VersaFlex, Versa-Smooth, or Versa-Base adhered with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. Versa-Smooth may be adhered by torch.

Membrane: Awaplan Premium, Awaplan Premium FR, Awaplan 170, Awaflex, Awaflex FR, Awaplan 170 FR, Awaplan Versa-Smooth, Awaplan VersaFlex, or Versa-Cap FR adhered with a full mopping of approved asphalt applied at 400° F at the point of contact and at a rate of 20-40 lbs./sq.; or Awaplan Heat Welding or Versa-Smooth adhered by torch.

Surfacing: Optional to mineral surfaced Membranes. Required for smooth surfaced membranes:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq.
2. Tam-Pro FR Aluminum Coating applied at 1½ gal./sq. or Tam-Pro Fibered Emulsion at 3 gal./sq.

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

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type C: All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam II, White Line Minimum 1.2" thick	**N/A**	**N/A**
UltraGard Gold Minimum 1.3" thick	**N/A**	**N/A**
E"NRG"Y-2, PSI-25 Minimum 1.4" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously attached; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ConPerl, GAFTEMP Permalite, Fesco Board, Armor Board Regular, Esgard, Celotex Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard, Kop-R Wood Fiber, Structodek Minimum 1" thick	**1, 3, 5 or 10**	**1:2 ft.^{2}**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The 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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) One ply of Glass-Base, Base-N-Ply, Versa-Base, Versa-Smooth, Awaplan VersaFlex, or Vapor-Chan adhered to the substrate with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: One or more plies of Glass Base, Tam-Glass Premium, Tam-Ply IV, Base-N-Ply, Awaplan VersaFlex, Versa-Smooth, or Versa-Base adhered with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. Versa-Smooth may be adhered by torch.

Membrane: Awaplan Premium, Awaplan Premium FR, Awaplan 170, Awaflex, Awaflex FR, Awaplan 170 FR, Awaplan Versa-Smooth, Awaplan VersaFlex, or Versa-Cap FR adhered with a full mopping of approved asphalt applied at 400° F at the point of contact and at a rate of 20-40 lbs./sq.; or Awaplan Heat Welding or Versa-Smooth adhered by torch.

Surfacing: Optional to mineral surfaced Membranes. Required for smooth surfaced membranes:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq.
2. Tam-Pro FR Aluminum Coating applied at 1½ gal./sq. or Tam-Pro Fibered Emulsion at 3 gal./sq.

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

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type D: Base sheet attached over insulation.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam II, White Line Minimum 1.2" thick	**N/A**	**N/A**
UltraGard Gold Minimum 1.3" thick	**N/A**	**N/A**
E"NRG"Y-2, PSI-25 Minimum 1.4" thick	**N/A**	**N/A**
ConPerl, GAFTEMP Permalite, Fesco Board Minimum ¾" thick	**N/A**	**N/A**
Armor Board Regular, Esgard, Celotex Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard, Kop-R Wood Fiber, Structodek Minimum ½" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Tamko Glass-Base, Vapor-Chan or Base-N-Ply fastened to the deck as described in Option #1 or #2, below, or One ply of Tamko Awaplan Versa-Smooth fastened to the deck as described in Option #3, below.

Fastening: ***(Option #1)*** Attach anchor sheet using CF #14 OR #15 Dekfast Fasteners with CF Hex Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(–60 psf, See General Limitation #7.)***

(Option #2) Attach anchor sheet using SFS HD Insulfixx S, or Buildex #14 OR #15 Roofgrip Fasteners and 3" Square Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(–75 psf, See General Limitation #7.)***

(Option #3 – Awaplan Versa-Smooth only) Attach anchor sheet using Buildex #14 or #15 Roofgrip Fasteners and 3" Square Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(–120 psf, See General Limitation #7.)***

Ply Sheet: (Optional) One or more plies of Glass Base, Tam-Glass Premium, Tam-Ply IV, Base-N-Ply, Awaplan VersaFlex, Versa-Smooth, or Versa-Base adhered with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. Versa-Smooth may be adhered by torch.

Membrane: Awaplan Premium, Awaplan Premium FR, Awaplan 170, Awaflex, Awaflex FR, Awaplan 170 FR, Awaplan Versa-Smooth, Awaplan VersaFlex, or Versa-Cap FR adhered with a full mopping of approved asphalt applied at 400° F at the point of contact and at a rate of 20-40 lbs./sq.; or Awaplan Heat Welding or Versa-Smooth adhered by torch.

Surfacing: Optional to mineral surfaced Membranes. Required for smooth surfaced membranes:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq.
2. Tam-Pro FR Aluminum Coating applied at 1½ gal./sq. or Tam-Pro Fibered Emulsion at 3 gal./sq.

Maximum Design Pressure: ***See Base Sheet Fastening Options above.***

Deck Type 3: Concrete Decks, Non-insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type E: Base sheet mechanically attached.

All General and System Limitations apply.

Base Sheet: One ply of Tamko Glass-Base, Vapor-Chan or Base-N-Ply fastened to the deck as described in Option #1 or #2, below, or One ply of Tamko Awaplan Versa-Smooth fastened to the deck as described in Option #3, below.

Fastening: ***(Option #1)*** Attach anchor sheet using CF #14 OR #15 Dekfast Fasteners with CF Hex Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(–60 psf, See General Limitation #7.)***

(Option #2) Attach anchor sheet using SFS HD Insulfixx S, or Buildex #14 OR #15 Roofgrip Fasteners and 3" Square Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(–75 psf, See General Limitation #7.)***

(Option #3 – Awaplan Versa-Smooth only) Attach anchor sheet using Buildex #14 or #15 Roofgrip Fasteners and 3" Square Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(–120 psf, See General Limitation #7.)***

Ply Sheet: (Optional) One or more plies of Glass Base, Tam-Glass Premium, Tam-Ply IV, Base-N-Ply, Awaplan VersaFlex, Versa-Smooth, or Versa-Base adhered with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. Versa-Smooth may be adhered by torch.

Membrane: Awaplan Premium, Awaplan Premium FR, Awaplan 170, Awaflex, Awaflex FR, Awaplan 170 FR, Awaplan Versa-Smooth, Awaplan VersaFlex, or Versa-Cap FR adhered with a full mopping of approved asphalt applied at 400° F at the point of contact and at a rate of 20-40 lbs./sq.; or Awaplan Heat Welding or Versa-Smooth adhered by torch.

Surfacing: Optional to mineral surfaced Membranes. Required for smooth surfaced membranes:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq.
2. Tam-Pro FR Aluminum Coating applied at 1½ gal./sq. or Tam-Pro Fibered Emulsion at 3 gal./sq.

Maximum Design Pressure: ***See Base Sheet Fastening Options above.***

Deck Type 3: Concrete Decks, Non-Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type F: Membrane adhered with approved asphalt.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of anchor sheet.

Base Sheet: (Optional) One ply of Glass-Base, Base-N-Ply, Versa-Base, Versa-Flex or Versa-Smooth adhered to the substrate with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or Versa-Smooth adhered by torch.

Ply Sheet: One or more plies of Glass Base, Tam-Glass Premium, Tam-Ply IV, Base-N-Ply, Awaplan VersaFlex, Versa-Smooth, or Versa-Base adhered with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. Versa-Smooth may be adhered by torch.

Membrane: Awaplan Premium, Awaplan Premium FR, Awaplan 170, Awaflex, Awaflex FR, Awaplan 170 FR, Awaplan Versa-Smooth, Awaplan VersaFlex, or Versa-Cap FR adhered with a full mopping of approved asphalt applied at 400° F at the point of contact and at a rate of 20-40 lbs./sq.; or Awaplan Heat Welding or Versa-Smooth adhered by torch.

Surfacing: Optional to mineral surfaced Membranes. Required for smooth surfaced membranes:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq.
2. Tam-Pro FR Aluminum Coating applied at 1½ gal./sq. or Tam-Pro Fibered Emulsion at 3 gal./sq.

Maximum Design Pressure: **-622.5 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 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 Professional Engineer, Registered 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 Professional Engineer, Registered 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