MIAMI-DADE

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

BUILDING CODE COMPLIANCE OFFICE
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CONTRACTOR ENFORCEMENT DIVISION
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PRODUCT CONTROL DIVISION
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PRODUCT CONTROL NOTICE OF ACCEPTANCE

Tamko Roofing Products, Inc.
220 West Fourth Street
Joplin ,MO 64804

Your application for Notice of Acceptance (NOA) of:
Tamko BUR Roof System over Lightweight Concrete Deck
under Chapter 8 of the Code of Miami-Dade County governing the use of Alternate Materials and Types of Construction, and completely described herein, has been recommended for acceptance by the Miami-Dade County Building Code Compliance Office (BCCO) under the conditions specified herein.

This NOA shall not be valid after the expiration date stated below. BCCO reserves the right to secure this product or material at any time from a jobsite or manufacturer's plant for quality control testing. If this product or material fails to perform in the approved manner, BCCO may revoke, modify, or suspend the use of such product or material immediately. BCCO reserves the right to revoke this approval, if it is determined by BCCO that this product or material fails to meet the requirements of the South Florida Building Code.

The expense of such testing will be incurred by the manufacturer.

ACCEPTANCE NO.: 01-0509.06
EXPIRES: 09/06/2006

Raul Rodriguez
Chief Product Control Division

THIS IS THE COVERSHEET, SEE ADDITIONAL PAGES FOR SPECIFIC AND GENERAL CONDITIONS
BUILDING CODE & PRODUCT REVIEW COMMITTEE

This application for Product Approval has been reviewed by the BCCO and approved by the Building Code and Product Review Committee to be used in Miami-Dade County, Florida under the conditions set forth above.

Francisco J. Quintana, R.A.
Director
Miami-Dade County
Building Code Compliance Office

APPROVED: 09/06/2001

ROOFING ASSEMBLY APPROVAL

Category:	Roofing	Approval Date:**September 6, 2001**
Sub-Category:	Built-up Roofing	Expiration Date:**September 6,2006**
Deck Type:	Lightweight Concrete	
Maximum Design Pressure	-52.5 psf	
Fire Classification:	See General Limitation #1	

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

Product	Dimensions	Test Specification	Product Description
Awaplan 170 FR	Roll weight: 98 lbs.; 33' 11" x 39 $^3/_8$"	ASTM D 6164 Type I	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 6164 Type I	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 6164 Type II	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 6164 Type II	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 6164 Type II	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; 33' x 39-3/8"		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.
Awaflex FR	Roll weight: 76 lbs; 33' x 39-3/8"		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.

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Roofing Product Control Examiner

Product	Dimensions	Test Specification	Product Description
Awaplan Versa-Smooth	Roll weight: 100 lbs. 33' 11" x $39^3/_8$"	ASTM D 6164 Type I	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 6164 Type II	A 190 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.; 97.5' 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.; 97.5' 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.;	ASTM D 3909	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	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	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 Type II	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™	Roll weight: 94 lbs.; 48' 2" x 39-3/8"	ASTM D 6163 Type I	Asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
Versa-Cap FR™	Roll weight: 87 lbs.; 33' x 39-3/8"	ASTM D 6164	A fiberglass reinforced, mineral surfaced, SBS modified bitumen top membrane.
Tam-Pro Fibered Emulsion	5 gallon	ASTM D 1227, Type II	Protective coating.
Tam-Pro Primer	5 gallon	ASTM D 41	Asphalt based primer
Tam-Pro Fire Rated Aluminum Coating	5 gallons	ASTM D2824, type III	Flame retardant protective coating

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EVIDENCE SUBMITTED

Test Agency/Identifier	Name	Report	Date
Factory Mutual Research Corporation	Class 1 Fire; 1-90 Windstorm Classification	J.I. 0Q8A7.AM	10.04.90
	Class 1 Fire; 1-90 Windstorm Classification	J.I. 1X1A5.AM	07.19.93
	Comparative Rupture Testing	J.I. 4D0A7.AM	10.21.98
	Class 1 Fire	J.I. 0Z4A3.AM	08.27.97
	Class 1 Fire; 1-90 Windstorm Classification	J.I. 1D4A7.AM	10.20.97
	Class 1 Fire; 1-90 Windstorm Classification	J.I. 3B5A9.AM	08.27.97
Underwriters Laboratories, Inc.	Fire Classification -- see current directory	R3225	Published Annually
	Wind Uplift Resistance	R3225-1 through 13	02.17.94
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

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APPROVED ASSEMBLIES:

Deck Type 4I: Lightweight Concrete, Insulated, New Construction

Deck Description: Cellular or Aggregate Lightweight Concrete

System Type A: Anchor sheet mechanically fastened; all layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

Anchor Sheet: One ply of Tamko Vapor-Chan or Versa-Base fastened to the deck as described below:

Fastening: ***(Option #1)*** Attach anchor sheet using Olympic CR Base Ply Fasteners, ES Products FM-90 Fasteners or Buildex Lite Weight Concrete Fasteners spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet.

(Option #2) Attach anchor sheet using Simplex Base-Lok or SFS Stadler Base-Lok Fasteners spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

Insulation Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
One or more layers of any of the following insulations:				
Approved Type(s): **AC-Foam II, E'NRG'Y 2, E'NRG'Y 2 Plus, IsoTherm R, E'NRG'Y 2 Composite, ISO 95+, ISO 95+ Composite, ISO-Roc, UltraGard Gold, AC-Foam Composite, Pyrox**				
Minimum: 1" x 3' x 4'	N/A	N/A	N/A	N/A
Approved Type(s): **Multi-Max FA**				
Minimum: 1" x 3' x 4'	N/A	N/A	N/A	N/A
Approved Type(s): **ConPerl, GAFTEMP Permalite, Fesco Board**				
Minimum: ½" x 2' x 4'	N/A	N/A	N/A	N/A
Approved Type(s): **Foamglas**				
Minimum: 1" x 2' x 4'	N/A	N/A	N/A	N/A
Approved Type(s): **High Density Wood Fiberboard, Structodek FS**				
Minimum: ½" x 4' x 4'	N/A	N/A	N/A	N/A
Approved Type(s): **Fiberglas**				
Minimum: $^{15}/_{16}$" x 4' x 4'	N/A	N/A	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved 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.

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Base Sheet:	(Optional) Install one ply of Type 43 coated base sheet, Glass-Base, Tam-Ply IV, Tam-Glass Premium® or Base-N-Ply® base sheet directly over the top layer of insulation. Adhere in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped applicaiton as detailed in this approval is approved; see General Limitation #4.
Ply Sheet:	Two or more plies of Tam-Glass Premium® or Tam-Ply IV ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Cap Sheet:	(Optional) One ply of Tam-Cap® adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. (See Tamko application instructions for approved method of installation).
Surfacing:	(Required if no cap sheet is used) Install one of the following: 1. 1-1½ gallons fibered aluminum coating per square (Tropical Asphalt Products AlumaBrite 120, Tam-Pro FR Aluminum Roof Coating), 3 gallons emulsion roof coating per square, or asphalt surface at an application rate of 20-25 lbs./sq.. Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering. 2. Flood coat with an application rate of 60 lbs./sq.; plus gravel or slag with an application rate of 400 or 300 lbs./sq. respectively..
Maximum Design Pressure:	-52.5 psf (See General Limitation #7.)

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Deck Type 4: Lightweight Concrete, Non-insulated, New Construction

Deck Description: Cellular or Aggregate Lightweight Concrete

System Type E: Base sheet mechanically fastened.

All General and System Limitations apply.

Anchor Sheet: One ply of Tamko Vapor-Chan or Versa-Base fastened to the deck as described below:

Fastening: ***(Option #1)*** Attach anchor sheet using Olympic CR Base Ply Fasteners, ES Products FM-90 Fasteners or Buildex Lite Weight Concrete Fasteners spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet.

(Option #2) Attach anchor sheet using Simplex Base-Lok or SFS Stadler Base-Lok Fasteners spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: Two or more plies of Tam-Glass Premium® or Tam-Ply IV ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Cap Sheet: (Optional) One ply of Tam-Cap® adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. (See Tamko application instructions for approved method of installation).

Surfacing: (Required if no cap sheet is used) Install one of the following:

1. 1-1½ gallons fibered aluminum coating per square (Tropical Asphalt Products AlumaBrite 120, Tam-Pro FR Aluminum Roof Coating), 3 gallons emulsion roof coating per square, or asphalt surface at an application rate of 20-25 lbs./sq.. Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
2. Flood coat with an application rate of 60 lbs./sq.; plus gravel or slag with an application rate of 400 or 300 lbs./sq. respectively.

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

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LIGHTWEIGHT INSULATING CONCRETE 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 Engineer, Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.
3. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 300 psi.

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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. **(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.)**

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NOTICE OF ACCEPTANCE STANDARD CONDITIONS

1 Renewal of this Acceptance (approval) shall be considered after a renewal application has been filed and the original submitted documentation, including test supporting data, engineering documents, are no older than eight (8) years.

2 Any and all approved products shall be permanently labeled with the manufacturer's name, city, state, and the following statement: "Miami-Dade County Product Control Approved", or as specifically stated in the specific conditions of this Acceptance.

3 Renewals of Acceptance will not be considered if:
   a) There has been a change in the South Florida Building Code affecting the evaluation of this product and the product is not in compliance with the code changes;
   b) The product is no longer the same product (identical) as the one originally approved;
   c) If the Acceptance holder has not complied with all the requirements of this acceptance, including the correct installation of the product;
   d) The engineer who originally prepared, signed and sealed the required documentation initially submitted, is no longer practicing the engineering profession.

4 Any revision or change in the materials, use, and/or manufacture of the product or process shall automatically be cause for termination of this Acceptance, unless prior written approval has been requested (through the filing of a revision application with appropriate fee) and granted by this office.

5 Any of the following shall also be grounds for removal of this Acceptance:
   a) Unsatisfactory performance of this product or process;
   b) Misuse of this Acceptance as an endorsement of any product, for sales, advertising or any other purposes.

6 The Notice of Acceptance 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 Notice of Acceptance is displayed, then it shall be done in its entirety.

7 A copy of this Acceptance as well as approved drawings and other documents, where it applies, shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at all times. The copies need not be resealed by the engineer.

8 Failure to comply with any section of this Acceptance shall be cause for termination and removal of Acceptance.

9 This Acceptance contains pages 1 through 10.

END OF THIS ACCEPTANCE

Frank Zuloaga, RRC
Roofing Product Control Examiner