City of Belle Isle Job Site Card Roof PERMIT 2020-04-030

PERMIT MUST BE POSTED ON SITE - A permit expires in 6 months if approved inspections are not recorded /scheduled within that time frame. You are responsible for scheduling and keeping track of all your inspections -

Site Address: 6838 Seminole Dr, 32809
Class: Residential
Description of Work: Partial re-roof – 1500 SF tile
Number of Stories: 2

Parcel #: 29-23-30-4389-02-090
Subdivision: na

Issued To: GOLD KEY ROOFING LLC
Name: HEWITT, JEFFREY ALLAN
Business Phone: 407 851-0680
Roof Contractor License: CCC1329157
Issued on Payment Date & Method: 4 / 10 / 2020 ☐ Picked up by email ☐ Emailed
☑ Visa ☐ Master Card ☐ Amex ☐ Discover ☐ Check / Money Order # 0767

Schedule Inspections via Email at: BIDscheduling@universalengineering.com
SCHEDULE INSPECTIONS BY 3:00 PM CUT OFF TIME
Inspection Results Will Be Sent Out the Following Business Day

"WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT."

ROOF	INSPECTOR	DATE	COMMENTS
NEW ROOFS ONLY Code 700 Deck Nailing, Dry-In, Flashing			This inspection only applies for a brand new roof only!
Both new & re-roof Code 710 In - Progress			This inspection consists of all underlayment/black paper coverage and only **25% shingle coverage.**
Both new & re-roof Code 720 Final			After the In Progress has been passed, then the **entire roof is covered with shingles.**

Inspection requests are to be emailed to BIDscheduling@UniversalEngineering.com; a confirmation email will be sent back to you upon scheduling. **Next-Day Inspection requests must be made by 3:00 p.m.** Please include the following in your request: Permit #, project address, type of inspection, date of the requested inspection, a contact name & a contact phone number. AM or PM may be requested but cannot be guaranteed. **OSHA Approved Access to the Roof must be made Available to the Inspector.**

City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

RECEIVED APR 08 2020 BY

APPLICATION FOR ROOFING PERMIT

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

DATE OF APPLICATION: 4-8-2020 **ROOF PERMIT NUMBER** 2020-04-030

PLEASE PRINT. The undersigned hereby applies for a permit to make installations as indicated below:

Project Address 6838 Seminole Dr, Belle Isle, FL ___32809 X 32812

Property Owner Daniel Barnes Phone (630) 675-0356

Property Owner's Mailing Address 6838 Seminole Dr City Orlando

State FL Zip Code 32812 **Parcel Id Number:** 29-23-30-4389-02-090

REQUIRED! To obtain this information, please visit http://www.ocpafl.org/Searches/ParcelSearch.aspx

Class of Building: Old [x] New [ ] **Type of Building:** Residential [x] Commercial [ ] Other [ ]
Type of Work: New Roof [ ] ReRoof [x]

- **REQUIRED! Florida Product Approval Form – NOTE: installation instructions must be posted on-site before your first inspection!!**

Please indicate the nature of work by completing the information below:

Roof Square Footage: 15 **Number of Stories:** 2 **Job Valuation: $** 15,750.00 315

Type: Asphalt Shingles [ ] Metal [ ] Modified Bitumen [ ] Other: Partial TILE Re-roof

I hereby certify that the above is true and correct to the best of my knowledge and make Application for Permit as outlined above, and if same is granted I agree to conform to all Florida Building Code Regulations and City Ordinances regulating same and in accordance with plans submitted. The issuance of this permit does not grant permission to violate any applicable Town and/or State of Florida codes and/or ordinances. By signing below, I recognize Republic Services is by legal contract the sole authorized provider of garbage, recycling, yard waste, and commercial garbage and construction debris collection and disposal services with the city limits of the City. Contractors, homeowners and commercial businesses may contact Republic Services at 407-293-8000 to setup accounts for Commercial, Construction Roll Off, or other services needed. Rates are fixed by contract and are available at City Hall or from Republic Services. The City enforces the contract through its code enforcement office. Failure to comply will result in a stop work order.

LICENSE HOLDER SIGNATURE _____ LICENSE # CCC1329157

LICENSE HOLDER NAME Jeffrey Hewitt COMPANY NAME Gold Key Roofing

Street Address 4874 S Orange Ave

City Orlando State FL Zip Code 32806 Phone Number 407-851-0680

Email Address Receptionist@goldkeyroofing.com

PAID 4-10-20 VISA 0767

Building Official: OTC **Date** 4.9.20

Verified Contractor's Licenses & Insurance are on file OK Date 4-9-20

Zoning Fee	$ 30.-
Building Fee	$ 100.-
Review Fee	$ 0
1% BCAIB Fee	$ 2 min
1.5% DCA Fee	$ 2 min
Total Permit Fee	$ 134.-

NOTE: The Building Permit Number is required if the Roof Installation is associated with any construction or alteration where a Building Permit has been issued. Building Permit Number _____

15 1K
5x15

25
75
100

Permit Number: 2020-04-030
Folio/Parcel ID #: 29-23-30-4389-02-090
Prepared by: Gold Key Roofing
4874 S Orange Ave
Orlando, Fl 32806
Return to: Gold Key Roofing
4874 S Orange Ave
Orlando, Fl 32806

DOC # 20200218123
04/06/2020 13:30 PM Page 1 of 1
Rec Fee: $10.00
Deed Doc Tax: $0.00
Mortgage Doc Tax: $0.00
Intangible Tax: $0.00
Phil Diamond, Comptroller
Orange County, FL
Ret To: SIMPLIFILE LC

NOTICE OF COMMENCEMENT

State of Florida, County of Orange

The undersigned hereby gives notice that improvement will be made to certain real property, and in accordance with Chapter 713, Florida Statutes, the following information is provided in this Notice of Commencement.

1. **Description of property** (legal description of the property, and street address if available)
LAKE CONWAY PARKS G/138 TH PART OF... 6838 SEMINOLE DR
2. **General description of improvement**
ReRoof
3. **Owner information or Lessee information if the Lessee contracted for the improvement**
Name DANIEL F. BARNES
Address 6838 SEMINOLE DR ORLANDO FL 32812
Interest in Property OWNER
Name and address of fee simple titleholder (if different from Owner listed above)
Name N/A
Address N/A
4. **Contractor**
Name Gold Key Roofing Telephone Number 407-851-0680
Address 4874 S Orange Ave Orlando, Fl 32806
5. **Surety** (if applicable, a copy of the payment bond is attached)
Name N/A Telephone Number N/A
Address N/A Amount of Bond $ N/A
6. **Lender**
Name N/A Telephone Number N/A
Address N/A
7. **Persons within the State of Florida designated by Owner upon whom notices or other documents may be served as provided by §713.13(1)(a)7, Florida Statutes.**
Name N/A Telephone Number N/A
Address N/A
8. **In addition to himself or herself, Owner designates the following to receive a copy of the Lienor's Notice as provided in §713.13(1)(b), Florida Statutes.**
Name N/A Telephone Number N/A
Address N/A
9. **Expiration date of notice of commencement** (the expiration date may not be before the completion of construction and final payment to the contractor, but will be 1 year from the date of recording unless a different date is specified) N/A

WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.

Signature of Owner or Lessee, or Owner's or Lessee's Authorized Officer/Director/Partner/Manager — Owner (Signatory's Title/Office)

The foregoing instrument was acknowledged before me this 6 day of 4/2020 (month/year) by Daniel F. Barnes (name of person)

as owner (Type of authority, e.g., officer, trustee, attorney in fact) for owner (Name of party on behalf of whom instrument was executed)

Signature of Notary Public – State of Florida

Rachel A. Krantz Crane
Print, type, or stamp commissioned name of Notary Public

Personally Known ____ OR Produced ID
Type of ID Produced FL DL

RACHEL ANN KRANTZ CRANE
Notary Public - State of Florida
Commission # GG 258552
My Comm. Expires Sep 18, 2022
Bonded through National Notary Assn.

Form content revised: 10/17/12

State of FLORIDA. County of ORANGE.
Per §668.50, F.S., which defines and permits electronic signatures, I certify that this is a true copy of the document as reflected in the Official Records.
PHIL DIAMOND, COUNTY COMPTROLLER

By Renee Simmons at 2:16 pm, Apr 06, 2020

Deputy Comptroller Date

COUNTY COMPTROLLER SEAL ORANGE COUNTY, FLORIDA

City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

Product Approval Form

DATE: 4-8-2020 PERMIT # 2020-04-030

PROJECT ADDRESS 6838 Seminole Drive, Belle Isle, FL ___32809 X 32812

As required by Florida Statue 553.842 and Florida Administrative Code 9B-72m, please provide the information and approval numbers of the building components listed below if they will be utilized on the building or structure. FL Approved products are listed online at www.floridabuilding.org or can be obtained from the local product supplier. The following information must be turned in with permit application and available onsite for inspections:

- **NOTE: The installation instructions must be posted on-site before your first inspection!!**

Product Type	Manufacturer	Model/Series	FL Product Approval #
EXTERIOR DOORS			
Swinging			
Sliding			
Sectional/Rollup			
Other			
WINDOWS			
Single/Dbl Hung			
Horizontal Slider			
Casement			
Fixed			
Mullion			
Skylights			
Other			
STRUCTURAL COMPONENTS			
Wood Connectors			
Wood Anchors			
Truss Plates			
Insulation Forms			
Lintels			
Other			

Product Type	Manufacturer	Model/Series	FL Product Approval #
WALL PANELS			
Sliding			
Soffits			
Storefront			
Glass Block			
Other			
ROOFING PRODUCTS			
Asphalt Shingles			
Non Struct Metal			
Roofing Tiles	EAGLE	7473.1	FL7473-R8
Single Ply Roof			
Underlayment	Polyglass TUMAX		FL5259-R08
Other			
OTHER			

It is the applicant's responsibility to verify that specific products have been installed in accordance with their limitations and with the minimum required design pressures for the structure. Specific compliance will be verified during field inspections.

Applicant Signature _____ **Date** 4-6-2020

FL #	FL7473-R8
Application Type	Revision
Code Version	2017
Application Status	Approved
Comments	
Archived	
Product Manufacturer	EAGLE ROOFING PRODUCTS FLORIDA LLC
Address/Phone/Email	1575 East CR 470 Sumterville, FL 33858 (800) 400-3245 annettes@eagleroofing.com
Authorized Signature	Annette Sindar annettes@eagleroofing.com
Technical Representative	Tyler Allwood
Address/Phone/Email	1575 East Country Road 470 Sumterville, FL 33585 (941) 302-7826 tylera@eagleroofing.com
Quality Assurance Representative	
Address/Phone/Email	
Category	Roofing
Subcategory	Roofing Tiles
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Robert Nieminen
Florida License	PE-59166
Quality Assurance Entity	Architectural Testing, Inc., an Intertek Company
Quality Assurance Contract Expiration Date	12/31/2020
Validated By	John W. Knezevich, PE ✓ Validation Checklist - Hardcopy Received
Certificate of Independence	FL7473_R8_COI_2017_01_COI_Nieminen.pdf

Referenced Standard and Year (of Standard)

Standard	Year
ASTM C1492	2009
FRSA/TRI April 2012	2012
SSTD 11	1997

Equivalence of Product Standards Certified By

Sections from the Code

Product Approval Method	Method 1 Option D
Date Submitted	10/16/2017
Date Validated	10/18/2017
Date Pending FBC Approval	10/19/2017
Date Approved	12/12/2017

Summary of Products

FL #	Model, Number or Name	Description
7473.1	Eagle Roof Tiles	Low (flat), medium and high profile concrete roof tiles
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 Section 5 of Evaluation Report for Limits of Use. Tile roofs are analyzed for wind resistance through overturning moment. Refer to FRSA/TRI 07320 for overturning moment limitations of mechanically attached tile systems and the tile adhesive manufacturers' Product Approvals for adhesive set tile systems.		**Installation Instructions** FL7473_R8_II_2017_10_FINAL_ER_EAGLE_NON-HVHZ_FL7473-R8.pdf Verified By: Robert J. M. Nieminen PE - 59166 Created by Independent Third Party: Yes **Evaluation Reports** FL7473_R8_AE_2017_10_FINAL_ER_EAGLE_NON-HVHZ_FL7473-R8.pdf Created by Independent Third Party: Yes

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EXTERIOR RESEARCH & DESIGN, LLC.
Certificate of Authorization #9503
353 CHRISTIAN STREET, UNIT #13
OXFORD, CT 06478
(203) 262-9245

EVALUATION REPORT

Eagle Roofing Products Florida LLC.
1575 East Country Road 470
Sumterville, FL 33585
(800) 400-3245

Evaluation Report E1322.09.06-R5
FL7473-R8
Date of Issuance: 02/24/2009
Revision 5: 10/16/2017

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 and Florida Building Code, Residential Volume. The products described herein have been evaluated for compliance with the **6th Edition (2017) Florida Building Code (NON-HVHZ)** sections noted herein.

DESCRIPTION: Eagle Roof Tiles

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

CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. if the product changes or the referenced Quality Assurance documentation changes. Trinity|ERD requires a complete review of this Evaluation Report relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Evaluation Report number preceded by the words "Evaluated by Robert Nieminen, P.E." 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 5.

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 10/16/2017. This does not serve as an electronically signed document. Signed, sealed hardcopies have been transmitted to the Product Approval Administrator and to the named client

CERTIFICATION OF INDEPENDENCE:
1. Trinity|ERD 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. Trinity|ERD 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 Trinity|ERD 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 SYSTEM EVALUATION:

1. **SCOPE:**

Product Category: Roofing
Sub-Category: Roofing Tiles
Compliance Statement: **Eagle Roof Tiles**, as produced by **Eagle Roofing Products Florida LLC**, have demonstrated compliance with the following sections of the **6th Edition (2017) Florida Building Code (NON-HVHZ)** through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. **STANDARDS:**

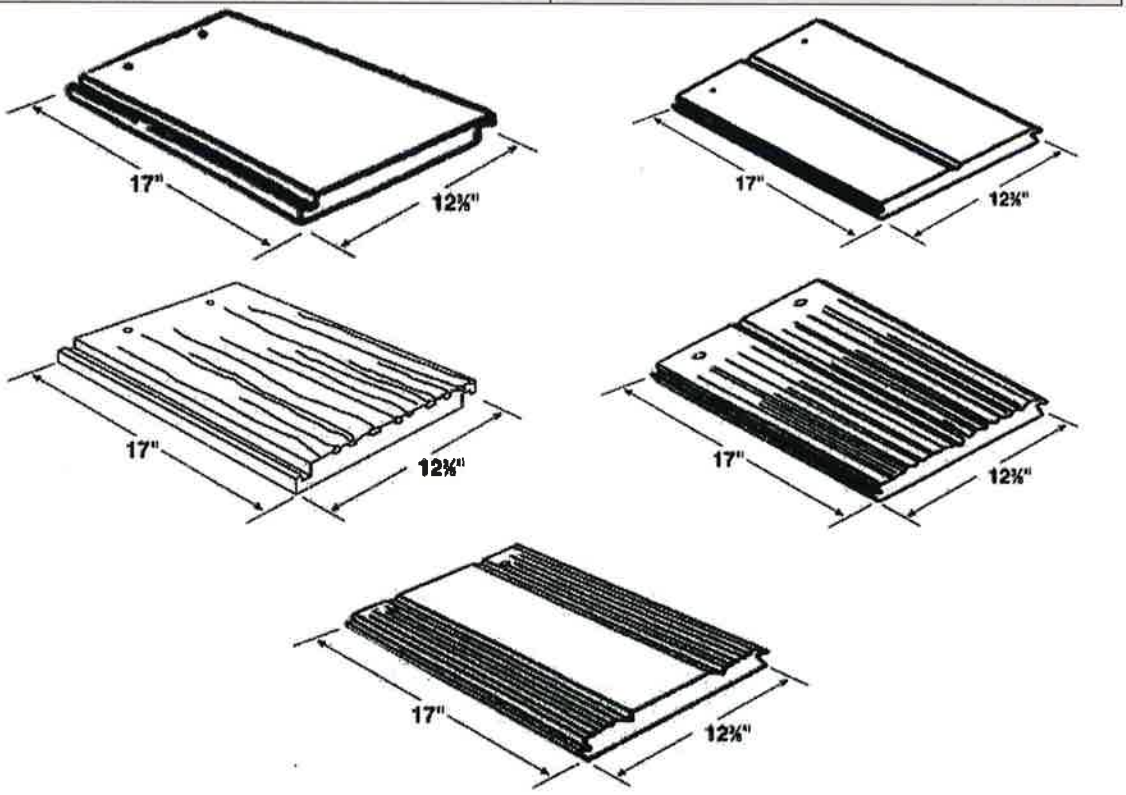
Section	Property	Standard	Year
1507.3.5, R905.3.5	Physical Properties	ASTM C1492	2003(2009)
1507.3.7, R905.3.7	Attachment Requirements	FRSA/TRI April 2012 (04-12)	2012
1504.2.1.1	Overturning Moment	SSTD 11	1997

3. **REFERENCES:**

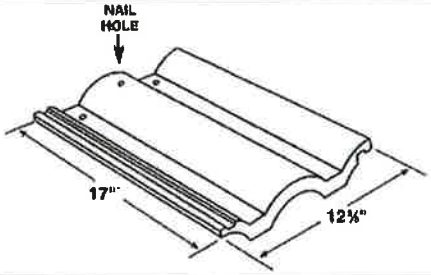
Entity	Examination	Reference	Date
ATL (TST 3782)	ASTM C1492	RT0310.01-17, 02-17, 03-17	03/15/2017
ATL (TST 3782)	ASTM C1492 – Freeze/thaw	RT0706.01-17, 02-17, 03-17	09/25/2017
Tile Roof Institute	SSTD 11	Membership Letter	11/29/2005
ATI (QUA 1844)	Quality Assurance	Inspection Report	06/07/2017

4. **PRODUCT DESCRIPTION:**

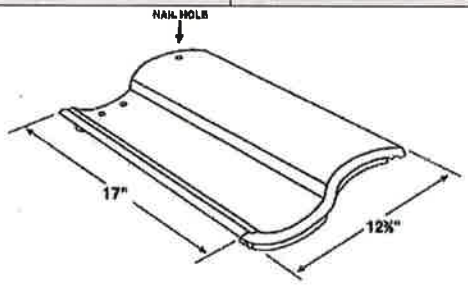
4.1 **ASTM C1492, Type III (Low Profile):** **BEL AIR**



4.2	ASTM C1492, Type II (Medium Profile):	MALIBU



4.3	ASTM C1492, Type I (High Profile):	CAPISTRANO



5. LIMITATIONS:

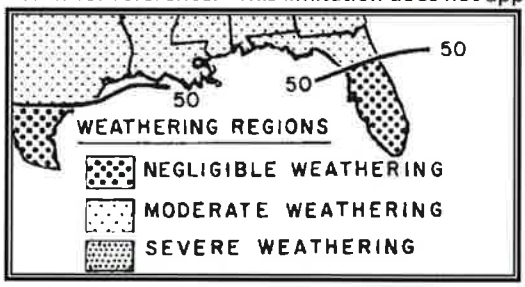
5.1 This is a building code evaluation. Neither Trinity|ERD nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

5.2 This Evaluation Report is not for use in FBC HVHZ jurisdictions.

5.3 Fire classification is not part of this evaluation; refer to **FBC 1505.2, Exception 2** (for non-combustible deck) or listing by an approved testing agency for fire rating of this product.

5.4 Underlayment shall be that which holds Florida Product Approval for use with tile roofing systems. The underlayment Product Approval shall specify allowable method(s) of tile installation (mechanical attachment, mortar-set and/or adhesive-set) for use with the specific underlayment. For mortar-set or adhesive-set tile roofing applications, the underlayment Product Approval shall specify attachment methods for the underlayment system to resist wind uplift design loads in accordance with **Table 1A of FRSA/TRI April 2012 (04-12)**.

5.5 "Color-Bonded" or "Slurry-Coated" files are limited to use on projects in areas subjected to weathering indices of 50 or less (negligible weathering), as outlined in **Figure 1 of ASTM C1492-03(2009)**[1], reproduced below for reference. This limitation does not apply to the "Color-Through" product offering.



5.6 All products in the roof assembly shall have quality assurance audit in accordance with **FAC Rule 61G20-3**.

6. INSTALLATION:

6.1 **Eagle Roof Tiles** may be mechanically fastened, mortar-set or adhesive-set. Installation shall comply with manufacturer's current published instructions, but not less than the requirements of **FBC 1507.3** and the **FRSA/TRI *Florida High Wind Concrete and Clay Tile Installation Manual***.

6.2 Underlayment shall be installed in accordance with **FRSA/TRI April 2012 (04-12)** or the underlayment manufacturer's current Product Approval. For mortar-set or adhesive-set tile roofing applications, the underlayment current Product Approval shall specify attachment methods for the underlayment system to resist wind uplift design loads in accordance with **Table 1A of FRSA/TRI April 2012 (04-12)**.

6.3 Tile Attachment:

6.3.1 Mechanically Attached Tile:
Wind load resistance shall be in accordance with **Table 3 of FRSA/TRI April 2012 (04-12)** to resist the Uplift Moment determined in **Table 2A or 2B of FRSA/TRI April 2012 (04-12)** or **FBC 1609.5.3**.

6.3.2 Mortar-Set Tile:
Wind load resistance shall be in accordance with **Table 2A or 2B of FRSA/TRI April 2012 (04-12)** or **FBC 1609.5.3** in conjunction with the mortar manufacturer's Product Approval.

6.3.3 Adhesive-Set Tile:
Wind load resistance shall be in accordance with **Table 2A or 2B of FRSA/TRI April 2012 (04-12)** or **FBC 1609.5.3** in conjunction with the adhesive manufacturer's current Product Approval. Refer to the current version of the referenced Florida Product Approval for paddy-placement details and performance data.

TILE ADHESIVES FOR ADHESIVE-SET TILE SYSTEMS

Manufacturer	Product(s)	Florida Product Approval
DAP Foam, Inc.	"Touch N' Seal Storm Bond"	FL14506
	"Touch N' Seal Storm Bond 2"	FL21374
Dow Chemical	"TILE BOND™"	FL22525
ICP Adhesives & Sealants, Inc.	"Polyset® AH-160"	FL6332
	"Polyset® RTA-1"	FL6276

6.3.4 Hip and Ridge Tile:
Tile shall be installed in accordance with **FRSA/TRI April 2012 (04-12)**. For hip and ridge tile installations atop hip and ridge metal, refer to the hip and ridge metal manufacturer's current Product Approval (e.g., FL5374) or test report in accordance with **SSTD 11** for allowable loads to resist those determined in accordance with **Table 1A of FRSA/TRI April 2012 (04-12)**.

7. LABELING:

7.1 Each unit shall bear the imprint or identifiable marking of the manufacturer's name or logo. Tile lots shall be labeled in accordance with the requirements of the Accredited Quality Assurance Agency noted herein.

EAGLE®
FLORIDA

(LOCATED ON UNDERSIDE OF TILE)

EAGLE FL

(LOCATED ON FRONTSIDE OF TILE)

7.2 Tile not tested for freeze-thaw shall state clearly that the lot has not been tested for freeze-thaw acceptance on all lot tags or certification.

8. BUILDING PERMIT REQUIREMENTS:

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

9. MANUFACTURING PLANTS:

Sumterville, FL

10. QUALITY ASSURANCE ENTITY:

Architectural Testing, Inc. – QUA1844; (717) 764-7700

- END OF EVALUATION REPORT -

[1] ASTM C1492-03, Standard Specification for Concrete Roof Tile, © ASTM International

FLORIDA DEPARTMENT OF
Business & Professional Regulation

Florida dbpr

Product Approval
USER: Public User

OFFICE OF THE SECRETARY

FL #	FL5259-R29
Application Type	Revision
Code Version	2017
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	POLYGLASS USA
Address/Phone/Email	1111 W. Newport Center Drive Deerfield Beach, FL 33442 (954) 233-1330 Ext 242 malpert@polyglass.com
Authorized Signature	Maury Alpert malpert@polyglass.com
Technical Representative	TECH REP
Address/Phone/Email	1111 West Newport Center Drive Deerfield Beach, FL 33442 (866) 802-8017 uspolyglasstechnical@polyglass.com
Quality Assurance Representative	QA REP
Address/Phone/Email	1111 West Newport Center Drive Deerfield Beach, FL 33442 (888) 410-1375 uspolyglasstechnical@polyglass.com
Category	Roofing
Subcategory	Underlayments
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☐ Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Robert Nieminen
Florida License	PE-59166
Quality Assurance Entity	UL LLC
Quality Assurance Contract Expiration Date	10/21/2022
Validated By	John W. Knezevich, PE ☑ Validation Checklist - Hardcopy Received
Certificate of Independence	FL5259_R29_COI_2019_01_COI_NIEMINEN.pdf

Referenced Standard and Year (of Standard)

Standard	Year
ASTM D1970	2015
ASTM D226	2009
ASTM D4798	2011
ASTM D6163	2008
ASTM D6164	2011
ASTM D6222	2011
ASTM D6509	2009
FM 4474	2011
FRSA/TRI April 2012	2012

UL 1897 2012

Equivalence of Product Standards
Certified By

Sections from the Code

Product Approval Method	Method 1 Option D
Date Submitted	10/15/2019
Date Validated	10/16/2019
Date Pending FBC Approval	10/20/2019
Date Approved	12/10/2019

Summary of Products

FL #	Model, Number or Name	Description
5259.1	Polyglass Roof Underlayments	Roofing underlayments
Limits of Use **Approved for use in HVHZ:** No **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** +N/A/-622.5 **Other:** 1.) The design pressure in this application relates to one particular underlayment system (over concrete deck) for use under foam-on tile systems (where the underlayment forms part of the load-path). Refer to ER Section 5.6.1 for other systems, other deck types and associated maximum design pressures. 2.) Refer to ER Section 5 for other limits of use.	**Installation Instructions** FL5259_R29_II_2019_10_FINAL_ER_POLYGLASS_UNDERLAYMENTS_FL5259-R29.pdf Verified By: Robert Nieminen PE-59166 Created by Independent Third Party: Yes **Evaluation Reports** FL5259_R29_AE_2019_10_FINAL_ER_POLYGLASS_UNDERLAYMENTS_FL5259-R29.pdf Created by Independent Third Party: Yes

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

ENGINEER | EVALUATE | TEST | CONSULT | CERTIFY

EVALUATION REPORT

Polyglass USA, Inc.
1111 West Newport Center Drive
Deerfield Beach, FL 33442
(954) 233-1230

Evaluation Report P12060.02.09-R25
FL5259-R29
Date of Issuance: 02/24/2009
Revision 25: 10/14/2019

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 and Florida Building Code, Residential Volume. The products described herein have been evaluated for compliance with the **6th Edition (2017) Florida Building Code** sections noted herein.

DESCRIPTION: Polyglass Roof Underlayments

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

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

ADVERTISEMENT: The Evaluation Report number preceded by the words "NEMO|etc. 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 16.

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 10/14/2019. This does not serve as an electronically signed document.

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1. NEMO|etc. 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.
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5. This is a building code evaluation. Neither NEMO|etc. 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.

NEMO | etc.

ROOFING COMPONENT EVALUATION

1. SCOPE:

Product Category: Roofing
Sub-Category: Underlayment
Compliance Statement: **Roof Underlayments**, as produced by **Polyglass USA, Inc.**, have demonstrated compliance with the following sections of the **6th Edition (2017) Florida Building Code** through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

Section	Property	Standard	Year
1504.3.1	Wind Uplift	FM 4474	2011
1504.3.1	Wind Uplift	UL 1897	2012
1507.2.3 / 1507.1.1	Physical Properties	ASTM D226	2009
1507.2.4 / 1507.1.1, 1507.2.9.2	Physical Properties	ASTM D1970	2015
1507.3.3	Physical Properties	FRSA/TRI April 2012	2012
1507.11.2	Physical Properties	ASTM D6163	2008
1507.11.2	Physical Properties	ASTM D6164	2011
1507.11.2	Physical Properties	ASTM D6222	2011
1507.11.2	Physical Properties	ASTM D6509	2009
TAS 110	Accelerated Weathering	ASTM D4798	2011

3. REFERENCES:

Entity	Examination	Reference	Date
ERD (TST 6049)	Wind Uplift	11757.08.01-1	08/13/2001
ERD (TST 6049)	Wind Uplift	11776.06.02	01/16/2003
ERD (TST 6049)	Wind Uplift	P1740.01.07	01/04/2007
ERD (TST 6049)	ASTM D1970	P5110.04.07-1	04/11/2007
ERD (TST 6049)	Wind Uplift	P9260.03.08	03/21/2008
ERD (TST 6049)	Wind Uplift	P30540.11.09-R1	11/30/2009
ERD (TST 6049)	Tensile Adhesion	P11030.11.09-1	11/30/2009
ERD (TST 6049)	Wind Uplift	P11030.11.09-2	11/30/2009
ERD (TST 6049)	ASTM D4977	P11030.11.09-3	11/30/2009
ERD (TST 6049)	ASTM D1970	P33360.06.10	06/25/2010
ERD (TST 6049)	TAS 103	P33370.03.11	03/02/2011
ERD (TST 6049)	Tensile Adhesion	P33370.04.11	04/26/2011
ERD (TST 6049)	ASTM D1970	P37300.10.11	10/19/2011
ERD (TST 6049)	TAS 103	P40390.08.12-1	08/06/2012
ERD (TST 6049)	Tensile Adhesion	P40390.08.12-2	08/07/2012
ERD (TST 6049)	Tensile Adhesion	C41420.09.12-3	09/11/2012
ERD (TST 6049)	Wind Uplift	P39680.03.13	03/04/2013
ERD (TST 6049)	ASTM D1970	P45370.04.13	04/26/2013
ERD (TST 6049)	Wind Uplift	P1738.02.07-R2	04/29/2013
ERD (TST 6049)	Wind Uplift	11757.04.01-1-R1	04/30/2013
ERD (TST 6049)	ASTM D6164	P37590.03.13-3A	05/06/2013
ERD (TST 6049)	ASTM D6509	P37590.03.13-1-R1	06/26/2013
ERD (TST 6049)	Wind Uplift	P41630.08.13	08/06/2013
ERD (TST 6049)	ASTM D4601	P45940.09.13	09/04/2013
ERD (TST 6049)	Wind Uplift	P11751.05.03-R1	11/26/2013
ERD (TST 6049)	Wind Uplift	P11781.11.03-R1	11/26/2013
ERD (TST 6049)	30/90 physicals	P45270.05.14	05/12/2014
ERD (TST 6049)	Tensile adhesion	6020.09.14-5	09/08/2014
ERD (TST 6049)	Tensile adhesion	6020.09.14-6	09/08/2014
ERD (TST 6049)	Tensile adhesion	P46520.10.14	10/03/2014
ERD (TST 6049)	ASTM D1970/D4798	P43290.10.14	10/17/2014
ERD (TST 6049)	Tensile adhesion	P40390.04.15	04/03/2015
ERD (TST 6049)	TAS 103	P44360.10.14-R1	05/18/2015
ERD (TST 6049)	Wind Uplift	PLYG-SC8905.05.16-1	05/17/2016
ERD (TST 6049)	ASTM D1970	PLYG-SC10130.06.16-1	06/27/2016
ERD (TST 6049)	Tensile adhesion	PLYG-SC10130.06.16-2	06/27/2016
ERD (TST 6049)	TAS 103	PLYG-SC10130.06.16-3	06/27/2016
ERD (TST 6049)	ASTM D1970/D4798	PLYG-SC8080.07.16	07/16/2016
ERD (TST 6049)	Wind Uplift	PLYG-SC12025.10.16	10/12/2016
ERD (TST 6049)	TAS 103	PLYG-SC13040.12.16	12/27/2016
ERD (TST 6049)	30/90 physicals	PLYG-SC11900.03.17	03/10/2017
ERD (TST 6049)	TAS 103	PLYG-SC12115.08.17	08/08/2017
ERD (TST 6049)	TAS 103	PLYG-SC13035.08.17	10/31/2017
FM (TST 1867)	Wind Uplift	3004091	01/12/2000
ICC-ES (EVL 2396)	IBC Compliance	ESR-1697	04/01/2019
M-D (CER 1592)	HVHZ Compliance	NOA 17-0614.22	07/06/2017
MTI (TST 2508)	ASTM D4798	JX20H7A	04/01/2008
NEMO (TST 6049)	ASTM D1970	4-PLYG-18-004.03.18	03/29/2018
NEMO (TST 6049)	Wind Uplift	4L-PLYG-18-003.01.19	01/11/2019
NEMO (TST 6049)	ASTM D6163	4S-PLYG-18-002.01.19-A	01/24/2019
NEMO (TST 6049)	ASTM D6222	4S-PLYG-18-002.05.19-C	05/20/2019
NEMO (TST 6049)	TAS 103	4S-PLYG-18-004.10.19-G	10/08/2019
NEMO (TST 6049)	TAS 103	4S-PLYG-18-004.10.19-I	10/08/2019
NEMO (TST 6049)	TAS 103	4S-PLYG-18-004.10.19-L	10/09/2019
NEMO (TST 6049)	TAS 103	4j-PLYG-19-SSUDL-01.A	10/10/2019
PRI (TST 5878)	Tensile Adhesion	PRI01111	04/08/2002
PRI (TST 5878)	TAS 103	PUSA-018-02-01	07/14/2003
PRI (TST 5878)	TAS 103	PUSA-035-02-01	09/29/2006
PRI (TST 5878)	TAS 103	PUSA-055-02-02	12/10/2007
PRI (TST 5878)	ASTM D6222	PUSA-061-02-02	01/28/2008
PRI (TST 5878)	ASTM D6164	PUSA-088-02-01	07/29/2009
Polyglass USA	P/L Affidavit	Mule-Hide Cross Ltg	03/01/2008

Entity	Examination	Reference	Date	Entity	Examination	Reference	Date
ERD (TST 6049)	TAS 103	PLYG-SC7550.03.15	03/24/2015	Polyglass USA	Materials Affidavit	Polystick Compound	08/18/2011
				UL (QUA9625)	Quality Control	Service Confirmation	09/13/2018

4. PRODUCT DESCRIPTION:

	Product	Specification	Plant(s)	Description
4.1	Elastobase	ASTM D6163	FL	Fiberglass-reinforced, SBS modified bitumen base sheet
4.2	Elastobase P	ASTM D6164	FL	Polyester-reinforced, SBS modified bitumen base sheet
4.3	Elastoflex G TU	M-D 13-004 FRSA/TRI April 2012	PA	Polyester-reinforced, modified bitumen tile underlayment composed of a sand-surfaced SBS modified bitumen back-side and granule-surfaced APP modified bitumen top-side
4.4	Elastoflex S6 G	ASTM D6164 FRSA/TRI April 2012	FL	Polyester-reinforced, SBS modified bitumen cap sheet
4.5	Elastoflex S6 G FR	ASTM D6164 FRSA/TRI April 2012	FL	Polyester-reinforced, SBS modified bitumen cap sheet
4.6	Mule-Hide SA-APP Cap Sheet	ASTM D6222 FRSA/TRI April 2012	FL	Polyester-reinforced, APP modified bitumen cap sheet
4.7	HydraGuard Dual Pro	ASTM D1970	FL	Nominal 60-mil thick dual-layer rubberized asphalt waterproofing membrane, fiberglass reinforced, with a polyester fabric surface
4.8	HydraGuard Tile Pro	ASTM D1970 TAS 103 FRSA/TRI April 2012	FL	Nominal 60-mil thick dual-layer rubberized asphalt waterproofing membrane, fiberglass reinforced, with a polyester fabric surface
4.9	Mule-Hide SA-APP Cap Sheet (FR)	ASTM D6222 FRSA/TRI April 2012	FL	Polyester-reinforced, APP modified bitumen cap sheet
4.10	Polyflex G	ASTM D6222 FRSA/TRI April 2012	FL	Polyester-reinforced, APP modified bitumen cap sheet for use as an alternate to Heat Applied "Cap Sheet" in the "Two Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened or adhered tile roof systems
4.11	Polyflex G FR	ASTM D6222 FRSA/TRI April 2012	FL	Polyester-reinforced, APP modified bitumen cap sheet for use as an alternate to Heat Applied "Cap Sheet" in the "Two Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened tile roof systems
4.12	Polyflex SA P	ASTM D6222 FRSA/TRI April 2012	FL	Polyester-reinforced, APP modified bitumen cap sheet
4.13	Polyflex SA P FR	ASTM D6222 FRSA/TRI April 2012	FL	Polyester-reinforced, APP modified bitumen cap sheet
4.14	Polyglass Base	ASTM D6509	FL	Fiberglass-reinforced, APP modified bitumen base sheet
4.15	Polyglass G2 Base Sheet	ASTM D4601	AL	Fiberglass-reinforced, asphaltic base sheet
4.16	Polystick IR-Xe	ASTM D1970	FL, PA	Nominal 60-mil thick rubberized asphalt waterproofing membrane, glass fiber reinforced, with an aggregate surface
4.17	Polystick MTS Plus	TAS 103 FRSA/TRI April 2012	FL, PA, TX	Nominal 60-mil thick rubberized asphalt waterproofing membrane, glass fiber reinforced, surfaced with polyolefinic film surface

4. PRODUCT DESCRIPTION:

	Product	Specification	Plant(s)	Description
4.18	Polystick MU-X	ASTM D1970 (See Section 5.8)	FL, NV, PA	Nominal 54-mil thick dual-layer rubberized asphalt waterproofing membrane, fiberglass reinforced, with a polypropylene film surface
4.19	Polystick TU Max	ASTM D1970 TAS 103 FRSA/TRI April 2012	FL, PA, TX	Nominal 60-mil thick rubberized asphalt waterproofing membrane with a 190 g/m^2 polyester fabric surface
4.20	Polystick TU P	TAS 103 FRSA/TRI April 2012	TX	Nominal 130-mil thick rubberized asphalt waterproofing membrane, glass-fiber/polyester reinforced, with a granular surface
4.21	Polystick TU Plus	ASTM D1970 TAS 103 FRSA/TRI April 2012	FL, PA	Nominal 80-mil thick rubberized asphalt waterproofing membrane, glass fiber reinforced, with a polyester fabric surface

5. LIMITATIONS:

5.1 This is a building code evaluation. Neither NEMO|etc. 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 is not for use in the HVHZ.

5.3 Fire Classification is not part of this Evaluation Report; refer to current Approved Roofing Materials Directory for fire ratings of this product.

5.4 Polyglass 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

Underlayment	Asphalt Shingles	Nail-On Tile	Foam-On Tile	Metal	Wood Shakes & Shingles	Slate
Elastobase	Yes	Yes (Base Sheet in 2-ply system)	Yes (Base Sheet in 2-ply system)	Yes	Yes	Yes
Elastobase P	Yes	Yes (Base Sheet in 2-ply system)	Yes (Base Sheet in 2-ply system)	Yes	Yes	Yes
Polyglass Base	No	Yes (Base Sheet in 2-ply system)	Yes (Base Sheet in 2-ply system)	No	No	No
Polyglass G2 Base	No	Yes (Base Sheet in 2-ply system)	Yes (Base Sheet in 2-ply system)	No	No	No
Elastoflex G TU	Yes	Yes	Yes (See 5.5.1)	No	Yes	Yes
Elastoflex S6 G	Yes	Yes	Yes (See 5.5.1)	No	Yes	Yes
Elastoflex S6 G FR	Yes	Yes	No	No	Yes	Yes
HydraGuard Dual Pro	Yes	No	No	Yes	Yes	Yes
HydraGuard Tile Pro	Yes	Yes	Yes (See 5.5.1)	Yes	Yes	Yes
Mule-Hide SA-APP Cap Sheet	Yes	Yes	Yes (See 5.5.1)	No	Yes	Yes
Mule-Hide SA-APP Cap Sheet (FR)	Yes	Yes	Yes (See 5.5.1)	No	Yes	Yes
Polyflex G	Yes	Yes	Yes (See 5.5.1)	No	Yes	Yes
Polyflex G FR	Yes	Yes	No	No	Yes	Yes
Polyflex SA P	Yes	Yes	Yes (See 5.5.1)	No	Yes	Yes
Polyflex SA P FR	Yes	Yes	Yes (See 5.5.1)	No	Yes	Yes
Polystick IR-Xe	Yes	No	No	No	Yes	Yes

TABLE 1: ROOF COVER OPTIONS						
Underlayment	**Asphalt Shingles**	**Nail-On Tile**	**Foam-On Tile**	**Metal**	**Wood Shakes & Shingles**	**Slate**
Polystick MTS Plus	Yes	Yes	No	Yes	Yes	Yes
Polystick MU-X	Yes	No	No	Yes	Yes	Yes
Polystick TU Max	No	Yes	Yes (See 5.5.1)	Yes	No	No
Polystick TU P	No	Yes	Yes (See 5.5.1)	No	No	No
Polystick TU Plus	Yes	Yes	Yes (See 5.5.1)	Yes	Yes	Yes

5.5.1 "Foam-On Tile" is limited to use of the following Approved tile adhesives / underlayment combinations.

TABLE 1A: ALLOWABLE TILE ADHESIVE / UNDERLAYMENT COMBINATIONS[1]		
Adhesive	**Florida Product Approval**	**Underlayments**
DAP Foam Touch 'n Seal StormBond Roof Tile Adhesive	FL14506	Polystick TU Max or Polystick TU Plus
Dow TileBond™	FL22525	HydraGuard Tile Pro, Polyflex SA P, Polystick TU Max, Polystick TU P or Polystick TU Plus
ICP Adhesives Polyset® AH-160	FL6332	Elastoflex G TU, Elastoflex S6 G, HydraGuard Tile Pro, Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex G, Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus
ICP Adhesives Polyset® RTA-1	FL6276	Elastoflex S6 G, HydraGuard Tile Pro, Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex G, Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus

5.6 Allowable Substrates:

TABLE 2: SUBSTRATE OPTIONS FOR ADHERED UNDERLAYMENTS				
Underlayment	**Application**	**Substrates (designed to meet wind loads for project)**		
		Type	**Primer**	**Material(s)**
HydraGuard Dual Pro, HydraGuard Tile Pro, Polystick (all variations), Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P or Polyflex SA P FR	self-adhering	Deck / sheathing	(Optional) ASTM D41	plywood, OSB, Southern Yellow Pine or Huber Engineered Woods "ZIP System" Panels
			ASTM D41	structural concrete
		Insulation	(Optional) ASTM D41 or WB-3000	ASTM C1289 Type II Class 1 polyisocyanurate, ASTM C1289 Type V polyisocyanurate-composite, DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board
		Base Sheet	N/A	ASTM D226 felt, Elastobase, Elastobase P or Mule-Hide Nail Base
Elastoflex G TU, Elastoflex S6 G or Elastoflex S6 G FR	hot asphalt	Deck	ASTM D41	structural concrete
		Insulation	(Optional) ASTM D41	DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board
		Base Sheet	N/A	ASTM D226 felt, Elastobase, Elastobase P, Mule-Hide Nail Base or Polyglass G2 Base
Polyflex G or Polyflex G FR	torch-applied	Deck	ASTM D41	structural concrete
		Insulation	(Optional) ASTM D41	DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board
		Base Sheet	N/A	Elastobase, Elastobase P, Mule-Hide Nail Base, Polyglass G2 Base or Polyglass Base

[1] *Refer to Tile Manufacturer's or Adhesive Manufacturer's Florida Product Approval for Overturning Moment Resistance Performance.*

5.6.1 Wind Resistance for Underlayment Systems in Foam-On Tile Applications:

The following wind uplift limitations apply to underlayment systems that are not prescriptively addressed in FRSA/TRI April 2012 (04-12) and are used in foam-on or mortar-set tile applications. Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads and reflects the ultimate passing pressure divided by 2 (the 2 to 1 margin of safety per FBC 1504.9 has already been applied). Refer to FRSA/TRI April 2012 (04-12), Appendix A, Table 1A or FBC 1609 for determination of design wind loads.

#1 Maximum Design Pressure = **-52.5 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Joints: Min. 4-inch wide strips of Elastoflex SA-V over all OSB joints
Base Ply: Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#2 Maximum Design Pressure = **-90 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Primer: None
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#3 Maximum Design Pressure = **-97.5 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Primer: PG100 or ASTM D41
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered and back-nailed within the selvedge-edge side laps using 12 ga. x 1¼" ring shank nails through 32 ga., 1-5/8" diameter tin caps spaced 12-inch o.c.

#4 Maximum Design Pressure = **-105 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Primer: WB-3000
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered and back-nailed within the selvedge-edge side laps using 12 ga. x 1¼" ring shank nails through 32 ga., 1-5/8" diameter tin caps spaced 12-inch o.c.

#5 Maximum Design Pressure = **-135 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Primer: (Optional) PG100 or ASTM D41
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Joints: Min. 4-inch wide strips of Elastoflex SA-V over all plywood joints.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#6 Maximum Design Pressure = **-315 psf**:

Deck: Structural concrete to meet project requirements to satisfaction of Authority Having Jurisdiction.
Primer: PG100 or ASTM D41
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: HydraGuard Tile Pro, Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#7 Maximum Design Pressure = **-622.5 psf**:

Deck: Structural concrete to meet project requirements to satisfaction of Authority Having Jurisdiction.
Primer: PG100 or ASTM D41
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#8 Maximum Design Pressure = **-30.0 psf***:

Deck: Min. 15/32-inch OSB to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners: 11 ga. x 1.25-inch long x 1-inch head diameter round metal cap nails
Spacing: 6-inch o.c. at the 3-inch wide side laps and 6-inch o.c. at two (2) equally spaced staggered center rows.
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#9 Maximum Design Pressure = **-37.5 psf***:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners: 11 ga. x 1.25-inch long x 1-inch head diameter round metal cap nails
Spacing: 6-inch o.c. at the 3-inch wide side laps and 6-inch o.c. at two (2) equally spaced staggered center rows.
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#10 Maximum Design Pressure = **-37.5 psf***:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: One (1) or two (2) layers ASTM D226, Type II felt
Fasteners: 11 ga. x 1.25-inch long x 1-inch head diameter round metal cap nails
Spacing: 6-inch o.c. at the 3-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#11 Maximum Design Pressure = **-45 psf***:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: One (1) layer ASTM D226, Type II felt
Fasteners: 11 ga. x 1.25-inch x 3/8-inch head diameter annular ring shank roofing nails at 1-5/8-inch diameter tin caps
Spacing: 4-inch o.c. at the 2-inch wide side laps and 4-inch o.c. at two (2) equally spaced staggered center rows.
Base Ply: (Optional; for use with self-adhering underlayment only) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered or Elastoflex G TU, applied in full mopping of hot asphalt.

#12 Maximum Design Pressure = **-45 psf***:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Two (2) layers ASTM D226, Type II felt
Fasteners: 11 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails at 1-5/8-inch diameter tin caps
Spacing: 9-inch o.c. at the 2-inch wide side laps and 9-inch o.c. at two (2) equally spaced staggered center rows.
Base Ply: (Optional; for use with self-adhering underlayment only) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered or Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#13 Maximum Design Pressure = **-45 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 9-inch o.c. at the 2-inch wide side laps and 18-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#14 Maximum Design Pressure = **-45.0 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners: 12 ga. annular ring shank nails with 1-5/8" diameter tin caps
Spacing: 6-inch o.c. at the 3-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#15 Maximum Design Pressure = **-45.0 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sand top surface)
Fasteners: 12 ga. annular ring shank nails with 1-5/8" diameter tin caps
Spacing: 6-inch o.c. at the 3-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#16 Maximum Design Pressure = **-45.0 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Polyglass Base
Fasteners: 12 ga. annular ring shank nails with 1-5/8" diameter tin caps
Spacing: 6-inch o.c. at the 3-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment: Polyflex G, torch-applied.

#17 Maximum Design Pressure = **-52.5 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 9-inch o.c. at the 2-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#18 Maximum Design Pressure = **-52.5 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners: Simplex Original Cap Nails
Spacing: 6-inch o.c. at the 3-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#19 Maximum Design Pressure = **-52.5 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners: Simplex Original Cap Nails
Spacing: 6-inch o.c. at the 3-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#20 Maximum Design Pressure = **-60 psf**:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners: 11 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails at 1-5/8-inch diameter tin caps
Spacing: 8-inch o.c. at the 4-inch wide side laps and 8-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#21 Maximum Design Pressure = **-60 psf**:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners: OMG #12 Standard Roofgrip with OMG Flat Bottom Metal Plates
Spacing: 12-inch o.c. at the 4-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#22 Maximum Design Pressure = **-60.0 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 8-inch o.c. at the 3-inch wide side laps and 8-inch o.c. at three (3) equally spaced staggered center rows.
Primer: PG100 or ASTM D41 primer applied to stress plates.
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#23 Maximum Design Pressure = **-60.0 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sand top surface)
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 8-inch o.c. at the 3-inch wide side laps and 8-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#24 Maximum Design Pressure = **-60.0 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Polyglass Base
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 8-inch o.c. at the 3-inch wide side laps and 8-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment: Polyflex G, torch-applied.

#25 Maximum Design Pressure = **-67.5 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Polyglass G2 Base or Polyglass Base *(requires use of torch-applied underlayment)*
Fasteners: 12 ga. x 1.25-inch long x 3/8-inch head diameter annular ring shank roofing nails at 1-5/8-inch diameter tin caps
Spacing: 8-inch o.c. at the 4-inch wide side laps and 8-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or torch-applied or Polyflex G, torch-applied.

#26 Maximum Design Pressure = **-67.5 psf**:

Deck: APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners: TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width direction of the sheet.
Spacing: 12-inch o.c. at the 4-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Primer: (Optional) PG100 or ASTM D41 primer applied to stress plates.
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#27 Maximum Design Pressure = **-67.5 psf**:

Deck: APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sand top surface)
Fasteners: TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width direction of the sheet.
Spacing: 12-inch o.c. at the 4-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#28 Maximum Design Pressure = **-67.5 psf**:

Deck:	APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase or Polyglass Base
Fasteners:	TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width direction of the sheet.
Spacing:	12-inch o.c. at the 4-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment:	Polyflex G, torch-applied.

#29 Maximum Design Pressure = **-75 psf**:

Deck:	Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Polyglass G2 Base or Polyglass Base *(requires use of torch-applied underlayment)*
Fasteners:	Dekfast #14 with Dekfast Hex plates, OMG #14 HD with OMG 3" Galvalume Steel Plates, OMG Roofgrip #14 with OMG Flat Bottom Plates (AccuTrac), Trufast HD with Trufast 3-inch Insulation Plates or Simplex MAXX Cap Fasteners
Spacing:	10-inch o.c. at the 4-inch wide side laps and 10-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or torch-applied or Polyflex G, torch-applied.

#30 Maximum Design Pressure = **-90 psf**:

Deck:	Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners:	Simplex MAXX Cap Fasteners
Spacing:	6-inch o.c. at the 2-inch wide side laps and 6-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#31 Maximum Design Pressure = **-90 psf**:

Deck:	Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners:	OMG #12 Standard Roofgrip or OMG #14 Heavy Duty with OMG 3" Round Metal Plates or OMG Flat Bottom Metal Plates
Spacing:	6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#32 Maximum Design Pressure = **-90 psf**:

Deck:	Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase (sanded top surface)
Fasteners:	Trufast #12 DP or Trufast #14 HD with Trufast 3" Metal Insulation Plates
Spacing:	6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#33 Maximum Design Pressure = **-90 psf**:

Deck:	Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Polyglass G2 Base or Polyglass Base *(requires use of torch-applied underlayment)*
Fasteners:	Dekfast #14 with Dekfast Hex plates, OMG #14 HD with OMG 3" Galvalume Steel Plates, OMG Roofgrip #14 with OMG Flat Bottom Plates (AccuTrac), Trufast HD with Trufast 3-inch Insulation Plates or Simplex MAXX Cap Fasteners
Spacing:	9-inch o.c. at the 4-inch wide side laps and 9-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or torch-applied or Polyflex G, torch-applied.

#34 Maximum Design Pressure = **-90.0 psf**:

Deck:	APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners:	TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width-direction of the sheet
Spacing:	9-inch o.c. at the 2-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Primer:	PG100 or ASTM D41 primer applied to stress plates.
Base Ply:	(Optional) Polystick MTS Plus, self-adhered.
Underlayment:	Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#35 Maximum Design Pressure = **-90.0 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sand top surface)
Fasteners: TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width-direction of the sheet
Spacing: 9-inch o.c. at the 2-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#36 Maximum Design Pressure = **-90.0 psf**:

Deck: APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Polyglass Base
Fasteners: TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width-direction of the sheet
Spacing: 9-inch o.c. at the 2-inch wide side laps and 12-inch o.c. at two (2) equally spaced staggered center rows.
Underlayment: Polyflex G, torch-applied.

#37 Maximum Design Pressure = **-97.5 psf**:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners: 11 ga. x 1.25-inch x 3/8-inch head diameter annular ring shank roofing nails at 1-5/8-inch diameter tin caps
Spacing: 4-inch o.c. at the 4-inch wide side laps and 4-inch o.c. at four (4) equally spaced staggered center rows.
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#38 Maximum Design Pressure = **-97.5 psf**:

Deck: APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Primer: PG100 or ASTM D41 primer applied to stress plates.
Base Ply: (Optional) Polystick MTS Plus, self-adhered.
Underlayment: Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#39 Maximum Design Pressure = **-97.5 psf**:

Deck: APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sand top surface)
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#40 Maximum Design Pressure = **-97.5 psf**:

Deck: APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase or Polyglass Base
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment: Polyflex G, torch-applied.

#41 Maximum Design Pressure = **-105 psf**:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet: Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners: Simplex MAXX Cap Fasteners
Spacing: 6-inch o.c. at the 2-inch wide side laps and 6-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment: Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#42 Maximum Design Pressure = **-105.0 psf**:

Deck:	APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners:	TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width-direction of the sheet
Spacing:	6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at three (3) equally spaced staggered center rows.
Primer:	PG100 or ASTM D41 primer applied to stress plates.
Base Ply:	(Optional) Polystick MTS Plus, self-adhered.
Underlayment:	Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#43 Maximum Design Pressure = **-105.0 psf**:

Deck:	APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase (sand top surface)
Fasteners:	TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width-direction of the sheet
Spacing:	6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#44 Maximum Design Pressure = **-105.0 psf**:

Deck:	APA rated, 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase or Polyglass Base
Fasteners:	TRUFAST Versa-Fast Fasteners & Plates with two (2) screws per plate installed 180° into the holes of the plate, parallel to the width-direction of the sheet
Spacing:	6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at three (3) equally spaced staggered center rows.
Underlayment:	Polyflex G, torch-applied.

#45 Maximum Design Pressure = **-112.5 psf**:

Deck:	Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners:	11 ga. x 1.25-inch x 3/8-inch head diameter annular ring shank roofing nails at 1-5/8-inch diameter tin caps
Spacing:	6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at four (4) equally spaced staggered center rows.
Primer:	PG100 or ASTM D41 primer at all tin-caps
Base Ply:	Polystick MTS Plus, self-adhered
Underlayment:	Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#46 Maximum Design Pressure = **-120 psf**:

Deck:	Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase (sanded top surface for hot-asphalt or torch-applied cap or poly-film surface for torch-applied cap)
Fasteners:	OMG #12 Standard Roofgrip or OMG #14 Heavy Duty with OMG 3" Round Metal Plates or OMG Flat Bottom Metal Plates
Spacing:	6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at five (5) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt or Polyflex G, torch-applied.

#47 Maximum Design Pressure = **-120 psf**:

Deck:	Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase (sanded top surface)
Fasteners:	Trufast #12 DP or Trufast #14 HD with Trufast 3" Metal Insulation Plates
Spacing:	6-inch o.c. at the 4-inch wide side laps and 6-inch o.c. at five (5) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#48 Maximum Design Pressure = **-127.5 psf**:

Deck:	APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase or Mule-Hide Nail Base (poly-film top surface)
Fasteners:	TRUFAST Versa-Fast Fasteners & Plates with one (1) screw per plate, in the center hole.
Spacing:	9-inch o.c. at the 4-inch wide side laps and 9-inch o.c. at four (4) equally spaced staggered center rows.
Primer:	PG100 or ASTM D41 primer applied to stress plates.
Base Ply:	(Optional) Polystick MTS Plus, self-adhered.
Underlayment:	Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick TU Max, Polystick TU P or Polystick TU Plus, self-adhered.

#49 Maximum Design Pressure = **-127.5 psf**:

Deck:	APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase (sand top surface)
Fasteners:	TRUFAST Versa-Fast Fasteners & Plates with one (1) screw per plate, in the center hole.
Spacing:	9-inch o.c. at the 4-inch wide side laps and 9-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment:	Elastoflex G TU or Elastoflex S6 G, applied in full mopping of hot asphalt.

#50 Maximum Design Pressure = **-127.5 psf**:

Deck:	APA rated, 19/32 CAT, 0.578 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
Base Sheet:	Elastobase or Polyglass Base
Fasteners:	TRUFAST Versa-Fast Fasteners & Plates with one (1) screw per plate, in the center hole.
Spacing:	9-inch o.c. at the 4-inch wide side laps and 9-inch o.c. at four (4) equally spaced staggered center rows.
Underlayment:	Polyflex G, torch-applied.

5.6.1.1 All other direct-deck, adhered Polyglass underlayment systems beneath foam-on tile systems carry a Maximum Design Pressure of -45 psf.

5.6.1.2 For mechanically attached Base Sheet, the maximum design pressure for the selected assembly shall meet or exceed that required under FRSA/TRI April 2012 (04-12), Appendix A, Table 1A.

Alternatively, the maximum design pressure for the selected assembly shall meet or exceed the Zone 1 design pressure determined in accordance with FBC 1609. In this case, Zones 2 and 3 shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Commonly used methods are ANSI/SPRI WD1, FM Loss Prevention Data Sheet 1-29 and Roofing Application Standard RAS 117. Assemblies marked with an asterisk* carry the limitations set forth in Section 2.2.10.1 of FM Loss Prevention Data Sheet 1-29 (January 2016) for Zone 2/3 enhancements.

5.7 Exposure Limitations:

TABLE 3: EXPOSURE LIMITATIONS

Underlayment	Maximum Exposure (days)
Elastoflex G TU, HydraGuard Dual Pro, HydraGuard Tile Pro, Polystick MTS Plus, Polystick TU Max, Polystick TU P or Polystick TU Plus	180
Polystick IR-Xe or Polystick MU-X	90
Elastobase, Elastobase P, Polyglass G2 Base or Polyglass Base	30
Elastoflex S6 G, Elastoflex S6 G FR, Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex G, Polyflex G FR, Polyflex SA P or Polyflex SA P FR	180 (for adhesive-set tile)
	UNLIMITED (for mechanically fastened roof prepared roof covers)

5.8 **Polystick MU-X** has been found through comparative testing to have a lesser coefficient of friction than ASTM D226 roofing felt in a dry condition, tested at standard laboratory conditions. Agreement between purchaser and seller, as set forth in Section 4.3, Note 1 of ASTM D1970-15, should be established as to slip resistance.

5.9 Tile Slippage Limitations (FRSA/TRI April 2012 (04-12)):

When loading roof tiles on the underlayment in direct-deck tile assemblies, the maximum roof slope shall be as follows. These slope limitations can only be exceeded by using battens during loading of the roof tiles.

TABLE 2: TILE SLIPPAGE LIMITATIONS FOR DIRECT-DECK TILE INSTALLATIONS

Underlayment	Tile Profile	Staging Method	Maximum Slope
Elastoflex G TU	Flat	10-tile stack	7:12
	Lugged	8-tile stack (6 over 2)	6:12
Elastoflex S6 G or S6 G FR	Flat or Lugged	6-tile stack (4 over 2)	4:12
HydraGuard Tile Pro	Flat or Lugged	6-tile stack (4 over 2)	7:12
Polyflex G or G FR	Flat or Lugged	6-tile stack (4 over 2)	4:12
Polyflex SA P or SA P FR	Flat or Lugged	6-tile stack (4 over 2)	4:12
Polystick MTS Plus	Flat	6-tile stack (4 over 2)	5:12
	Lugged	6-tile stack (4 over 2)	4:12
Polystick TU Max	Flat	6-tile stack (4 over 2) or 10-tile stack	7:12
	Lugged	6-tile stack (4 over 2)	7:12
	Lugged	10-tile stack	6:12
Polystick TU P	Flat	6-tile stack (4 over 2)	6:12
	Lugged	6-tile stack (4 over 2)	4:12
Polystick TU Plus	Flat or Lugged	6-tile stack (4 over 2)	7:12
	Flat or Lugged	10-tile stack	6:12

6. INSTALLATION:

6.1 Polyglass Roof Underlayments shall be installed in accordance with Polyglass published installation requirements 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, and prime the substrate (if applicable).

6.3 Elastobase, Elastobase P or Mule-Hide Nail Base:

6.3.1 Non-Tile Applications:

Shall be installed in compliance with the codified requirements for ASTM D226, Type II underlayment in FBC Table 1507.1.1 for the type of prepared roof covering to be installed and Polyglass published requirements.

Elastobase, Elastobase P or Mule-Hide Nail Base may be covered with a layer of Polystick, Polyflex SAP, Polyflex SA P FR, Mule-Hide SA-APP Cap Sheet or SA-APP Cap Sheet (FR), self-adhered, Elastoflex G TU, Elastoflex S6 G or Elastoflex S6 G FR in hot asphalt or Polyflex G or Polyflex G FR, torch applied. Roof cover limitations are those are those associated with the top-layer underlayment, as set forth in Table 1.

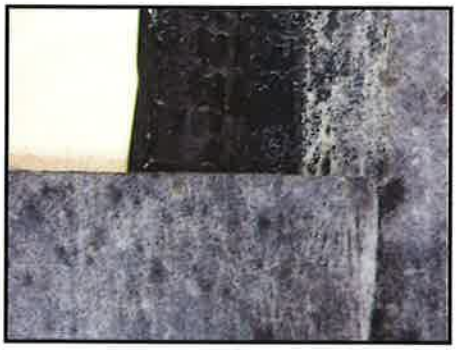
6.3.2 Tile Applications:

Elastobase, Elastobase P or Mule-Hide Nail Base are limited to use as a mechanically attached base sheet in the "Two Ply System" from FRSA/TRI April 2012 (04-12). Reference is made to Table 1 and Section 5.6.1 herein, coupled with FRSA/TRI April 2012 (04-12) Installation Manual.

6.4 HydraGuard Dual Pro, HydraGuard Tile Pro, Mule-Hide SA-APP Cap Sheet, Mule-Hide SA-APP Cap Sheet (FR), Polyflex SA P, Polyflex SA P FR, Polystick IR-Xe, Polystick MTS Plus, Polystick MU-X, Polystick TU Max, Polystick TU P or Polystick TU Plus:

6.4.1 General:

All seal-lap seams (selvage laps) must be firmly rolled with a in accordance with Polyglass requirements to ensure full contact and adhesion. For HydraGuard Dual Pro and HydraGuard Tile Pro, align the edge of the top sheet to the end of the glue pattern (the sheet will overlap the fabric).



View of Ovelap Seam of HydraGuard Dual Pro and HydraGuard Tile Pro

6.4.2 Non-Tile Applications:

Shall be installed in compliance with the codified requirements for ASTM D1970 (except Polystick TU P) underlayment in FBC Table 1507.1.1 for the type of prepared roof covering to be installed and Polyglass published requirements.

6.4.3 Tile Applications *(excludes HydraGuard Dual Pro, Polystick IR-Xe and Polystick MU-X)*:

Shall be installed in compliance with the requirements for Self-Adhered Membrane set forth in FRSA/TRI April 2012 (04-12) and Polyglass published requirements.

For mechanically fastened tile roofing over 2-ply system, consisting of Base Sheet and self-adhering top sheet(s), Base Sheet fastening shall be not less than FRSA/TRI April 2012 (04-12), Table 1.

For adhesive-set tile applications, refer to Section 5.6.1 herein.

6.4.4 Multi-Ply Underlayment Systems:

Polystick MTS Plus followed by HydraGuard Tile Pro, Polyflex SA P, Polystick MTS Plus, Polystick MU-X, Polystick TU Max, Polystick TU P or Polystick TU Plus is allowable for use under mechanically attached prepared roof systems. Limits of use are those associated with the top-layer material. This is not a requirement, but is allowable if a 2-ply underlayment system is desired.

Polystick MTS Plus followed by HydraGuard Tile Pro, Polyflex SA P, Polystick TU Max, Polystick TU P or Polystick TU Plus is allowable for use under adhesive-set tile systems. Limits of use are those associated with the top-layer material. This is not a requirement, but is allowable if a 2-ply underlayment system is desired.

6.5 Elastoflex G TU, Elastoflex S6 G or Elastoflex S6 G FR:

6.5.1 Elastoflex G TU, Elastoflex S6 G or Elastoflex S6 G FR shall be installed in compliance with current Polyglass published installation requirements. For use in tile applications:

- ✓ Elastoflex G TU is for use as an alternate to "Mineral Surface Roll Roofing" (ASTM D6380, Class M) in the "Single Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened tile roof systems or the Hot Asphalt applied "Cap Sheet" in the "Two Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened or adhered tile roof systems.
- ✓ Elastoflex S6 G is for use as an alternate to "Mineral Surface Roll Roofing" (ASTM D6380, Class M) in the "Single Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened tile roof systems or the Hot Asphalt applied "Cap Sheet" in the "Two Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened or adhered tile roof systems.
- ✓ Elastoflex S6 G FR is for use as an alternate to "Mineral Surface Roll Roofing" (ASTM D6380, Class M) in the "Single Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened tile roof systems or the Hot Asphalt applied "Cap Sheet" in the "Two Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened tile roof systems.

6.5.2 For hot-asphalt-applications, Elastoflex G TU, Elastoflex S6 G or Elastoflex S6 G FR shall be fully asphalt-applied to the substrates noted in Table 2. Side laps shall be minimum 3-inch and end-laps minimum 6-inch wide, off-set minimum 3 feet from course to course. Side and end laps shall be fully adhered in a complete mopping of hot asphalt with asphalt extending approximately 3/8-inch beyond the lap edge.

6.6 Polyflex G or Polyflex G FR:

6.6.1 Polyflex G or Polyflex G FR shall be installed in compliance with current Polyglass published installation requirements. For use in tile applications:

- ✓ Polyflex G is for use as an alternate to the Heat Applied "Cap Sheet" in the "Two Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened or adhered tile roof systems (Refer to Table 2 for base sheet options).
- ✓ Polyflex G FR is for use as an alternate to the Heat Applied "Cap Sheet" in the "Two Ply System" from FRSA/TRI April 2012 (04-12) beneath mechanically fastened tile roof systems (Refer to Table 2 for base sheet options).

6.6.2 Polyflex G or Polyflex G FR shall be fully torch-applied to the substrates noted in Table 2. Side laps shall be minimum 3-inch and end-laps minimum 6-inch wide, off-set minimum 3 feet from course to course. Side and end laps shall be fully heat-welded and inspected to ensure minimum 3/8-inch flow of modified compound beyond the lap edge.

6.7 Tile Staging:

6.7.1 Tile shall be loaded and staged in a manner that prevents tile slippage and/or damage to the underlayment. Refer to Table 2 herein, and Polyglass published requirements for tile staging.

6.7.2 Battens and/or Counter-battens, as required by the tile manufacturer and FRSA/TRI April 2012 (04-12) must be used on all roof slopes greater than 7:12. Precautions should be taken as needed, such as the use of battens or nail-boards, to prevent tile sliding and/or damage to the underlayment during the loading process.

7. BUILDING PERMIT REQUIREMENTS:

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

8. MANUFACTURING PLANTS:

Contact the noted QA agency for information on product locations covered for **F.A.C. 61G20-3** QA requirements. Refer to Section 4 herein for product & production locations having met codified physical properties specifications.

9. QUALITY ASSURANCE ENTITY:

UL, LLC – QUA9625; (314) 578-3406; k.chancellor@us.ul.com

- END OF EVALUATION REPORT -