City of Belle Isle Job Site Card Roof PERMIT 2019-08-066

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 -

Permit Number: 2019- 08-066
Site Address: 3519 Country Lakes Dr 32812
Class: □ Residential **Subdivision:**
Description of Work: Roof Square Footage: 720
MODIFIED BITUMEN
Number of Stories: 1

Issue Date: 08/26/2019
Parcel #: 20-23-30-4980-00-360

Issued: Total Roof Services Corp
Name: Morales, Jose
Business Phone: 407 495-4151
Contractor License CCC1330329
Payment Date & Method: 8 / 26 / 2019 □ Picked up or sent by _____ ■ Emailed
■ Visa □ Master Card □ Amex □ Discover □ Check / Money Order # 2787

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

APPLICATION FOR ROOFING PERMIT

RECEIVED AUG 22 2019

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: 08/22/19 **ROOF PERMIT NUMBER** 2019 08-066

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

Project Address 3519 Country Lakes Dr, Belle Isle, FL ___32809___32812

Property Owner Tracy Frenkel Phone ~~PENDING~~ 407 221 - 3500

Property Owner's Mailing Address 3519 Country Lakes Dr City Belle Isle

State FL Zip Code 32812 **Parcel Id Number:** 20-23-30-4980-00-360

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!!**

7200

Please indicate the nature of work by completing the information below: 15= 7200

Roof Square Footage: 720 sq ft **Number of Stories:** 1 **Job Valuation: $** 5000.00

Type: Asphalt Shingles [ ] Metal [ ] Modified Bitumen [x] Other: ___

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 # CCC1330329

LICENSE HOLDER NAME Jose Morales COMPANY NAME Total Roof Services

Street Address 1920 N. Rio Grande Ave

City Orlando State FL Zip Code 32804 Phone Number 407-495-4151

Email Address permitting@totalroofservices.com

P1 Front Sheet ✓

NOC

Building Official: SW **Date** 8-22-19

Verified Contractor's Licenses & Insurance are on file ___ Date 8-22-19

Zoning Fee	$ 30.00
Building Fee	$ 60.00 ✓
Review Fee	$ —
1% BCAIB Fee	$ 2.00
1.5% DCA Fee	$ 2.00
Total Permit Fee	$ 94.00

w/c Pending COMPLETED

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 WIS1 2781

PAID 8-26-19

30 20 25 DSE 35 — 5x7 — 15 LIC 7x5 — 25 35 60

CITY OF BELLE ISLE, FLORIDA

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

POWER OF ATTORNEY

Date: 8-22-19 Permit #: _____

I hereby name and appoint Naira Castillo (print name) of

Total Roof Services (company name) to be my lawful attorney-in-fact to act for

me and apply to the City of Belle Isle Building Department for a roof permit (type of permit) permit

for work to be performed at the following location:

3519 County Lakes Dr. (street address), Belle Isle, FL ☐ 32809 ☑ 32812 and

to sign my name and do all things necessary to this appointment.

Certified Contractor's Printed Name: Jose Morales

License Number: CCC 1330329

Certified Contractor's Signature: _____

The foregoing instrument was acknowledged before me this 22 days of AUGUST of 20 19

by Jose Morales who is personally known to me or who produced

_____ as identification and who did not take an oath.

State of Florida
County of Orange

_____
Notary Public, Orange County, Florida

(seal) JENNIFER J. NEWMARK
MY COMMISSION # GG025927
EXPIRES: AUG 30, 2020
Bonded through 1st State Insurance

DOC# 20190524681
08/22/2019 01:55:44 PM Page 1 of 1
Rec Fee: $10.00
Phil Diamond, Comptroller
Orange County, FL
IP - Ret To: TOTAL ROOF SERVICES

Permit Number: _____
Folio/Parcel Identification Number: 20-23-30-4980-00-360
Prepared by: Total Roof Services Corp
1920 N. Rio Grande Ave
Orlando, Fl 32804
Return to: Total Roof Services Corp
1920 N. Rio Grande Ave
Orlando, Fl 32804

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)
   The Landings at Lake Conway 9/125 Lot 36 - 3519 Country Lakes Dr
2. **General description of improvement**
   Flat Roof Replacement
3. **Owner information or Lessee information if the Lessee contracted for the improvement**
   Name Tracy Frenkel
   Address 3519 Country Lakes Dr
   Interest in Property owner
   Name and address of fee simple titleholder (if different from Owner listed above)
   Name _____
   Address _____
4. **Contractor**
   Name Total Roof Services - Jose Morales - CCC1330329 Telephone Number 407-495-4151
   Address 1920 N. Rio Grande Ave, Orlando, Fl 32804
5. **Surety** (if applicable, a copy of the payment bond is attached)
   Name _____ Telephone Number _____
   Address _____ Amount of Bond $ _____
6. **Lender**
   Name _____ Telephone Number _____
   Address _____
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 _____ Telephone Number _____
   Address _____
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 _____ Telephone Number _____
   Address _____
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) _____

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.

Under penalty of perjury, I declare that I have read the foregoing notice of commencement and that the facts stated in it are true to the best of my knowledge and belief.

Tracy Frenkel _____
Signature of Owner or Lessee, or Owner's or Lessee's Authorized Officer/Director/Partner/Manager — Signatory's Title/Office

The foregoing instrument was acknowledged before me this 22 day of Aug, 19 by Tracy Frenkel
month/year — name of person

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

_____ _____
Signature of Notary Public - State of Florida — Printed, typed or stamped commissioned name of Notary Public

NAIRA CASTILLO
Notary Public, State of Florida
Commission # FF 943281
My Comm. Expires Apr 8, 2020
Bonded through National Notary Assn

Personally Known ____ OR Produced ID ____
Type of ID Produced _____

Form Revised: September 26, 2011

I hereby certify that this is a true copy of the document as recorded in the Official Records
PHIL DIAMOND, COUNTY COMPTROLLER, O.C.
DATED: AUG 22 2019

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: 8-22-19 PERMIT #_____

PROJECT ADDRESS 3519 Country Lakes Dr Belle Isle, FL ___32809___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 #	Product Type	Manufacturer	Model/Series	FL Product Approval #
EXTERIOR DOORS				**WALL PANELS**			
Swinging				Sliding			
Sliding				Soffits			
Sectional/Rollup				Storefront			
Other				Glass Block			
				Other			
WINDOWS				**ROOFING PRODUCTS**			
Single/Dbl Hung				Asphalt Shingles			
Horizontal Slider				Non Struct Metal			
Casement				Roofing Tiles			
Fixed				Single Ply Roof			
Mullion				Underlayment			
Skylights				Other Modified	Polyglass	Polyflex Base Cap	FL1654-R24 W-183
Other							
STRUCTURAL COMPONENTS				**OTHER**			
Wood Connectors							
Wood Anchors							
Truss Plates							
Insulation Forms							
Lintels							
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** 8-22-19

FLORIDA DEPARTMENT OF
Business & Professional Regulation

Florida dbpr

Product Approval
USER: Public User

OFFICE OF THE SECRETARY

FL #	FL1654-R24
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	Maury Alpert
Address/Phone/Email	1111 W. Newport Center Drive Deerfield Beach, FL 33442 (912) 429-8610 MAlpert@polyglass.com
Quality Assurance Representative	
Address/Phone/Email	
Category	Roofing
Subcategory	Modified Bitumen Roof System
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	09/13/2021
Validated By	John W. Knezevich, PE ☑ Validation Checklist - Hardcopy Received
Certificate of Independence	FL1654_R24_COI_2019_01_COI_NIEMINEN.pdf

Referenced Standard and Year (of Standard)

Standard	Year
ASTM D6162	2008
ASTM D6163	2008
ASTM D6164	2011
ASTM D6222	2011
ASTM D6509	2009
FM 4470	2012
FM 4474	2011
UL 1897	2012

Equivalence of Product Standards Certified By

Sections from the Code

Product Approval Method	Method 1 Option D
Date Submitted	04/12/2019
Date Validated	04/14/2019
Date Pending FBC Approval	04/19/2019
Date Approved	06/18/2019
Date Revised	08/12/2019

Summary of Products

FL #	Model, Number or Name	Description
1654.1	Polyglass SBS and APP Modified Bitumen Roof Systems	SBS and APP modified bitumen roof systems
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 assembly over concrete deck. Refer to the ER Appendix for other systems and deck types. 2.) Refer to ER, Section 5 for other Limits of Use.		**Installation Instructions** FL1654_R24_II_2019_04_FINAL_A1_ER_POLYGLASS_MODBIT_FL1654-R24.pdf Verified By: Robert Nieminen PE-59166 Created by Independent Third Party: Yes **Evaluation Reports** FL1654_R24_AE_2019_04_FINAL_ER_POLYGLASS_MODBIT_FL1654-R24.pdf Created by Independent Third Party: Yes

Back Next

TABLE 1I: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER							
System No.	Deck (Note 1)	Primer	Roof Cover (Note 15)				MDP (psf)
			Joint Treatment	Base Ply	Ply	Cap Ply	
W-182	APA rated, 7/16 CAT, 0.418 in., Exposure 1 OSB	None	OSB joints are covered with 4-inch wide strips of Elastoflex SA V, rolled into place to create continuous bond.	Elastoflex SA V Plus or Elastoflex SA V Plus FR	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-52.5
W-183	Min. 15/32-inch plywood	None	None	SBS-SA	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-90.0
W-184	Min. 15/32-inch plywood	(Optional) PG100	None	Polyflex SA Base	(Optional) APP-TA	APP-TA	-90.0
W-185	Min. 15/32-inch plywood	PG100	None	SBS-SA	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-97.5
W-186	Min. 15/32-inch plywood	(Optional) PG100	Plywood joints are covered with 4-inch wide strips of Elastoflex SA V Plus, rolled into place to create continuous bond.	Elastoflex SA V or Elastoflex SA V FR	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-97.5
W-187	Min. 15/32-inch plywood	POLYBRITE 745 or WB3000	None	SBS-SA	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-105.0
W-188	Min. 15/32-inch plywood	(Optional) PG100	Plywood joints are covered with 4-inch wide strips of Elastoflex SA V Plus, rolled into place to create continuous bond.	Elastoflex SA V Plus or Elastoflex SA V Plus FR	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-135.0
W-189	Min. 15/32-inch plywood	(Optional) PG100	Plywood joints are covered with 4-inch wide strips of Elastoflex SA V Plus, rolled into place to create continuous bond.	Polyflex SA Base	(Optional) APP-TA	APP-TA	-135.0

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

TABLE	DECK	APPLICATION	TYPE	DESCRIPTION	PAGE
1A	Wood	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	5
1B	Wood	New or Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	5-9
1C	Wood	New, Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	10-11
1D	Wood	New, Reroof (Tear-Off) or Recover	B	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	12
1E	Wood	New, Reroof (Tear-Off) or Recover	C	Mech. Attached Insulation, Bonded Roof Cover	12-14
1F	Wood	New, Reroof (Tear-Off) or Recover	D	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	15-18
1G	Wood	New or Reroof (Tear-Off)	E	Non-Insulated, Mech. Attached Base Sheet (nails), Bonded Roof Cover	18-22
1H	Wood	New, Reroof (Tear-Off) or Recover	E	Non-Insulated, Mech. Attached Base Sheet (screws & plates), Bonded Roof Cover	23-28
1I	Wood	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	29
2A	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	B	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	30-32
2B	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C	Mech. Attached Insulation, Bonded Roof Cover	33-37
2C	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	D-1	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	38-39
2D	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	D-2	Insulated, Mech. Attached Velociflex, Bonded Roof Cover	40-41
3A	Structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	42-50
3B	Structural concrete	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	50
4A	Lightweight concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	51-53
4B	Lightweight concrete	New or Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	54
4C	Lightweight concrete	New or Reroof (Tear-Off)	E	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	55-58
5A	Cementitious wood fiber	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	59
5B	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	60
5C	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	B	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	61
5D	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	C	Mech. Attached Insulation, Bonded Roof Cover	61
5E	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	E	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	61
6A	Existing gypsum	Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	62-64
6B	Existing gypsum	Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	64
6C	Existing gypsum	Reroof (Tear-Off) or Recover	C	Mech. Attached Insulation, Bonded Roof Cover	64
6D	Existing gypsum	Reroof (Tear-Off) or Recover	E	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	64
7A	Various	Recover	A-1	Bonded Insulation, Bonded Roof Cover	65-69
7B	Various	Recover	F	Non-Insulated, Bonded Base Sheet, Bonded Roof Cover	69

The following notes apply to the systems outlined herein:

1. The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction. Load resistance of the roof deck shall be documented through proper codified and/or FBC Approval documentation.

2. Insulation / base sheet fasteners shall be of sufficient length for the following deck engagement:
   - Wood: Minimum 0.75-inch penetration.
   - Steel: Minimum 0.75-inch penetration and engage the top flute of the steel deck.
   - Structural concrete: Minimum 1-inch embedment into pilot hole in accordance with fastener manufacturer's published installation instructions.

3. Unless otherwise noted, insulation may be any one layer or combination of polyisocyanurate, polystyrene, wood fiberboard, perlite, gypsum-based roof board or mineral-wool roof board that meets the QA requirements of F.A.C. Rule 61G20-3 and is documented as meeting FBC 1505.1 and, for foam plastic, FBC Chapter 26, when installed with the roof cover.

4. Minimum 200 psi, minimum 2-inch thick lightweight insulating concrete may be substituted for rigid insulation board for System Type D (mechanically attached base sheet, bonded roof cover), whereby the base sheet fasteners are installed through the LWIC to engage the structural steel or concrete deck. The structural deck shall be of equal or greater configuration to the steel and concrete deck listings. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction. Load resistance of the roof deck shall be documented through proper codified and/or FBC Approval documentation.

5. Preliminary insulation attachment for System Type D: Unless otherwise noted, refer to Section 2.2.10.1.3 of FM Loss Prevention Data Sheet 1-29 (January 2016).

6. Unless otherwise noted, insulation adhesive application rates are as follows. Ribbon or bead width is at the time of application; the ribbons/beads shall expand as noted in the manufacturer's published instructions.
   - Hot asphalt (HA): Full coverage at 25-30 lbs/square.
   - Dow INSTA STIK Quik Set Insulation Adhesive (D-IS): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c.
   - Millennium One Step Foamable Adhesive (M-OSFA): Continuous 0.25 to 0.5-inch wide ribbons, 12-inch o.c.
   - Millennium PG-1 Pump Grade Adhesive (M-PG1): Continuous 0.25 to 0.5-inch wide ribbons, 12-inch o.c.
   - OMG OlyBond 500 (OB500): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c. (PaceCart or SpotShot). *Note: OlyBond Green may be used where OlyBond 500 is referenced.*
   - OlyBond Classic (OB Classic): Full coverage at 1 gal/square.
   - ICP Adhesive & Sealants Polyset CR-20: Continuous 2.5-3.5-inch wide ribbons, 12-inch o.c.
   - *Note: When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, board joints shall be staggered.*
   - *Note: The maximum edge distance from the adhesive ribbon to the edge of the insulation board shall be not less than one-half the specified ribbons spacing.*

7. Unless otherwise noted, all insulations are flat-stock or taper board of the minimum thickness noted. Tapered polyisocyanurate at the following thickness limitations may be substituted with the following Maximum Design Pressure (MDP) limitations. In no case shall these values be used to 'increase' the MDP listings in the tables; rather if MDP listing below meets or exceeds that listed for a particular system in the tables, then the thinner board listed below may be used as a drop-in for the equivalent thicker material listed in the table:
   - Millennium One Step Foamable Adhesive (M-OSFA): MDP -157.5 psf (Min. 0.5-inch thick)
   - Millennium PG-1 Pump Grade Adhesive (M-PG1): MDP -157.5 psf (Min. 0.5-inch thick)
   - OMG OlyBond 500 (OB500): MDP -45.0 psf (Min. 0.5-inch thick Multi-Max FA-3)
   - OMG OlyBond 500 (OB500): MDP -187.5 psf (Min. 0.5-inch thick ISO 95+ GL)
   - OMG OlyBond 500 (OB500): MDP -315.0 psf (Min. 0.5-inch thick ENRGY 3)
   - OMG OlyBond 500 (OB500): MDP -487.5 psf (Min. 0.5-inch thick ACFoam II)
   - ICP Adhesives & Sealants Polyset CR-20: MDP -117.5 psf (Min. 1.0-inch thick)

8. Bonded polyisocyanurate insulation boards shall be maximum 4 x 4 ft.

9. For mechanically attached components or partially bonded insulation, the maximum design pressure for the selected assembly shall meet or exceed the Zone 1 design pressure determined in accordance with FBC Chapter 16, and 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, Roofing Application Standard RAS 117 and Roofing Application Standard RAS 137. 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.

10. For fully bonded assemblies, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with FBC Chapter 16, and no rational analysis is permitted.

11. For mechanically attached components over existing decks, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing and analysis shall be in accordance with ANSI/SPRI FX-1 or Testing Application Standard TAS 105.

12. For existing substrates in a bonded recover or re-roof installation, the existing roof surface or existing roof deck shall be examined for compatibility and bond performance with the selected adhesive, and the existing roof system (for recover) shall be capable of resisting project design pressures on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing in accordance with ANSI/SPRI IA-1, ASTM E907, FM Loss Prevention Data Sheet 1-52 or Testing Application Standard TAS 124.

13. For Recover Applications using System Type D, the insulation is optional; however, the existing roof system shall be suitable for a recover application.

14. Lightweight Insulating Concrete (LWC) shall be cast in accordance with FBC Section 1917 to the satisfaction of the Authority Having Jurisdiction. For systems where specific LWC is referenced, refer to current LWC Product Approval for specific deck construction and limitations. Unless otherwise noted, for systems where specific LWC is not referenced, the minimum design mix shall be 300 psi. In all cases, the minimum top-coat thickness is 2-inches. For LWC over structural concrete, reference is made to FBC Section 1917.4.1, Point 1. For "pre-existent" LWC references, listings were established through testing over lightweight concrete cast using only foaming agent (ASTM C896), water and Portland cement (ASTM C150), with no proprietary additives, in accordance with procedures adopted by Miami-Dade BCCO (FBC CER1592). Unless otherwise noted, use of these listings in new construction or re-roof (tear-off) applications is at the discretion of the Designer or Record and Authority Having Jurisdiction.

15. Unless otherwise noted, refer to the following references for bonded base, ply or cap sheet applications.

POLYGLASS ROOF COVERS			
REFERENCE	**LAYER**	**MATERIAL**	**APPLICATION**
BP-AA (Base and Ply sheets, Asphalt-Applied)	Base Ply	One or more plies Polyglass G2 Base, FBC Approved ASTM D4601, Type II	Hot Asphalt at 20-40 lbs/square
	Ply	One or more plies Polyglass Ply IV, Polyglass Ply VI, FBC Approved ASTM D2178, Type IV or VI	
	Note:	***Asphalt-applied sheets or insulation shall not be applied to poly-film surfaced membranes.***	
SBS-CA1	Base Ply	One ply Elastobase (sand/sand), Elastoflex V, Elastoflex S6, Elastoflex S6 HP, Elastoshield HT	PG350 at 1.5-2.0 gal/square
	Cap Ply	Elastoflex V G, Elastoflex V G FR, Elastoflex S6, Elastoflex S6 HP, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TS G, Elastoshield TS G FR, Polyfresko G SBS (sand-backed), Polyfresko G SBS FR (sand-backed)	
SBS-CA2	Base Ply	One ply Elastobase (sand/sand), Elastoflex V, Elastoflex S6, Elastoflex S6 HP	Polyplus 35 at 1.5-2.0 gal/square
	Cap Ply	Elastoflex V G, Elastoflex V G FR, Elastoflex S6, Elastoflex S6 HP, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TS G, Elastoshield TS G FR, Polyfresko G SBS (sand-backed), Polyfresko G SBS FR (sand-backed)	
SBS-AA (SBS, Asphalt-Applied)	Base Ply or Ply	One or more plies Elastobase (sand/sand or poly/sand), Elastobase P (sand/sand or poly/sand), Elastoflex V, Elastoflex S6, Elastoflex S6 HP, Elastoshield HT	Hot Asphalt at 20-40 lbs/square
	Cap Ply	Elastoflex V, Elastoflex V G, Elastoflex V G FR, Elastoflex S6, Elastoflex S6 HP, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TS G, Elastoshield TS G FR, Polyfresko G SBS (sand-backed), Polyfresko G SBS FR (sand-backed)	
	Note:	***Asphalt-applied sheets or insulation shall not be applied to poly-film surfaced membranes.***	
SBS-TA (SBS, Torch-Applied)	Base Ply or Ply	One or more plies Elastobase (sand/poly), Elastobase (poly/poly), Elastoflex V, Elastoflex S6, Elastoflex S6 HP, Elastoshield HT	Torch-Applied
	Cap Ply	Elastoflex V, Elastoflex V G, Elastoflex V G FR, Elastoflex S6, Elastoflex S6 HP, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TS G, Elastoshield TS G FR, Polyfresko G SBS (poly-film backed), Polyfresko G SBS FR (poly-film backed)	
SBS-SA (SBS, Self-Adhering)	Base Ply	One or more plies Elastoflex SA V, Elastoflex SA V FR, Elastoflex SA V Plus, Elastoflex SA V Plus FR	Self-Adhering
	Cap Ply	Elastoflex SA P, Elastoflex SA P FR, Polyreflect	
	Note:	***Unless otherwise noted, permissible membrane substrates for SBS-SA are limited to the SBS-SA Base Ply options herein, Elastobase (poly/sand) or Elastobase (poly/poly).***	
APP-CA1	Cap Ply	Polyflex G FR	PG350 at 1.5-2.0 gal/square
APP-TA (APP, Torch-Applied)	Base Ply or Ply	One or more plies Polyglass Base, Polyflex, Polybond	Torch-Applied
	Cap Ply	Polyflex, Polyflex G, Polyflex G FR, Polybond, Polybond G, Polyfresko G, Polyfresko G FR	
APP-SA (APP, Self-Adhering)	Cap Ply	Polyflex SA P, Polyflex SA P FR, Polyfresko G SA, Polykool	Self-Adhering
	Note:	***Unless otherwise noted, permissible membrane substrates for APP-SA are limited to the SBS-SA Base Ply options herein, Elastobase (poly/sand) or Elastobase (poly/poly).***	

16. Vapor barrier options for use over **structural concrete deck** followed by adhered insulation carry the following Maximum Design Pressure (MDP) limitations. The **lesser** of the MDP listings below **vs. those in Table 3A** applies:

VAPOR BARRIER OPTIONS; STRUCTURAL CONCRETE DECK; ADHERED INSULATION PER TABLE 3A					
OPTION #	**PRIMER**	**VAPOR BARRIER**		**INSULATION ADHESIVE**	**MDP (PSF)**
		TYPE	**ATTACH**		
VB-1.	PG100	Elastoflex SA V Plus	Self-Adhering	Inta-Stik or CR-20, 12-inch o.c.	-60.0
VB-2.	PG100	Polyglass Base	Torch-applied	Inta-Stik or CR-20, 12-inch o.c.	-75.0
VB-3.	PG100	Elastoflex SA P	Self-Adhering	Insta-Stik, 12-inch o.c.	-75.0
VB-4.	PG100	Elastoflex SA P	Self-Adhering	Millennium One Step Foamable Adhesive, 12-inch o.c.	-157.5
VB-5.	PG100	Elastoflex SA P	Self-Adhering	CR-20, 12-inch o.c.	-270.0
VB-6.	PG100	Elastoflex SA V, Elastoflex SA V FR, Elastoflex SA V Plus, Elastoflex SA V Plus FR	Self-Adhering	Millennium One Step Foamable Adhesive, Millennium PG-1 Pump Grade Adhesive, OlyBond 500 or CR-20, 12-inch o.c.	-290.0

17. The following surfacing may be applied to the Cap Ply without adverse effect on the system wind load performance. Refer to current Florida Product Approval for approved Polyglass and KM Coatings roof coatings for application limitations and a Roofing Materials Directory for fire ratings associated with coating usage.

SURFACING OPTIONS FOR POLYGLASS MODIFIED BITUMEN ROOF SYSTEMS		
Option #	**Surfacing**	**Florida Product Approval**
SURF-1.	PG300 Fibered Roof Coating	FL10291
SURF-2.	PG600 Non-Fibered Aluminum Roof Coating	FL10291
SURF-3.	PG650 Fibered Aluminum Roof Coating	FL10291
SURF-4.	PG700 High Quality Elastomeric Roof Coating	FL10291
SURF-5.	PG700QS (Quick Set) High Quality Elastomeric Roof Coating	FL10291
SURF-6.	PG800 Asphalt Emulsion Roof Coating	FL10291
SURF-7.	Polyplus 60 Premium Non-Fibered Aluminum Roof Coating	FL10291
SURF-8.	Polyplus 65 Premium Fibered Aluminum Roof Coating	FL10291
SURF-9.	Polybrite 70 Premium Grade Elastomeric Roof Coating	FL10291
SURF-10.	Polybrite 70QS (Quick Set) Premium Grade Elastomeric Roof Coating	FL10291
SURF-11.	Polybrite 71 HS	FL10291
SURF-12.	Polybrite 90 High Solids Silicone Roof Coating	FL10291
SURF-13.	Polybrite 95 Silicone Roof Coating	FL10291
SURF-14.	KM Acryl 15	FL27409
SURF-15.	KM Acryl 15 QS	FL27409
SURF-16.	KM Acryl 25	FL27409
SURF-17.	KM Acryl 25 QS	FL27409
SURF-18.	KM Acryl 40 HS	FL27409
SURF-19.	KM Acryl 85	FL27409
SURF-20.	KM PS#250	FL27409
SURF-21.	KM PS#220	FL27409

18. "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC 1609 for determination of design wind loads.

NEMO|etc.

TABLE 11: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE F: NON-INSULATED, BONDED ROOF COVER							
System No.	Deck (Note 1)	Primer	Roof Cover (Note 15)				MDP (psf)
			Joint Treatment	Base Ply	Ply	Cap Ply	
W-182	APA rated, 7/16 CAT, 0.418 in., Exposure 1 OSB	None	OSB joints are covered with 4-inch wide strips of Elastoflex SA V, rolled into place to create continuous bond.	Elastoflex SA V Plus or Elastoflex SA V Plus FR	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-52.5
W-183	Min. 15/32-inch plywood	None	None	SBS-SA	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-90.0
W-184	Min. 15/32-inch plywood	(Optional) PG100	None	Polyflex SA Base	(Optional) APP-TA	APP-TA	-90.0
W-185	Min. 15/32-inch plywood	PG100	None	SBS-SA	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-97.5
W-186	Min. 15/32-inch plywood	(Optional) PG100	Plywood joints are covered with 4-inch wide strips of Elastoflex SA V Plus, rolled into place to create continuous bond.	Elastoflex SA V or Elastoflex SA V FR	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-97.5
W-187	Min. 15/32-inch plywood	POLYBRITE 745 or WB3000	None	SBS-SA	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-105.0
W-188	Min. 15/32-inch plywood	(Optional) PG100	Plywood joints are covered with 4-inch wide strips of Elastoflex SA V Plus, rolled into place to create continuous bond.	Elastoflex SA V Plus or Elastoflex SA V Plus FR	(Optional) SBS-SA, SBS-TA, APP-TA	SBS-SA, APP-SA, SBS-TA, APP-TA	-135.0
W-189	Min. 15/32-inch plywood	(Optional) PG100	Plywood joints are covered with 4-inch wide strips of Elastoflex SA V Plus, rolled into place to create continuous bond.	Polyflex SA Base	(Optional) APP-TA	APP-TA	-135.0

NEMO|etc.

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE					
TABLE	**DECK**	**APPLICATION**	**TYPE**	**DESCRIPTION**	**PAGE**
1A	Wood	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	5
1B	Wood	New or Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	5-9
1C	Wood	New, Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	10-11
1D	Wood	New, Reroof (Tear-Off) or Recover	B	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	12
1E	Wood	New, Reroof (Tear-Off) or Recover	C	Mech. Attached Insulation, Bonded Roof Cover	12-14
1F	Wood	New, Reroof (Tear-Off) or Recover	D	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	15-18
1G	Wood	New or Reroof (Tear-Off)	E	Non-Insulated, Mech. Attached Base Sheet (nails), Bonded Roof Cover	18-22
1H	Wood	New, Reroof (Tear-Off) or Recover	E	Non-Insulated, Mech. Attached Base Sheet (screws & plates), Bonded Roof Cover	23-28
1I	Wood	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	29
2A	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	B	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	30-32
2B	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C	Mech. Attached Insulation, Bonded Roof Cover	33-37
2C	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	D-1	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	38-39
2D	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	D-2	Insulated, Mech. Attached Velociflex, Bonded Roof Cover	40-41
3A	Structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	42-50
3B	Structural concrete	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	50
4A	Lightweight concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	51-53
4B	Lightweight concrete	New or Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	54
4C	Lightweight concrete	New or Reroof (Tear-Off)	E	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	55-58
5A	Cementitious wood fiber	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	59
5B	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	60
5C	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	B	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	61
5D	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	C	Mech. Attached Insulation, Bonded Roof Cover	61
5E	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	E	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	61
6A	Existing gypsum	Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	62-64
6B	Existing gypsum	Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	64
6C	Existing gypsum	Reroof (Tear-Off) or Recover	C	Mech. Attached Insulation, Bonded Roof Cover	64
6D	Existing gypsum	Reroof (Tear-Off) or Recover	E	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	64
7A	Various	Recover	A-1	Bonded Insulation, Bonded Roof Cover	65-69
7B	Various	Recover	F	Non-Insulated, Bonded Base Sheet, Bonded Roof Cover	69

The following notes apply to the systems outlined herein:

1. The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction. Load resistance of the roof deck shall be documented through proper codified and/or FBC Approval documentation.

2. Insulation / base sheet fasteners shall be of sufficient length for the following deck engagement:
   - Wood: Minimum 0.75-inch penetration.
   - Steel: Minimum 0.75-inch penetration and engage the top flute of the steel deck.
   - Structural concrete: Minimum 1-inch embedment into pilot hole in accordance with fastener manufacturer's published installation instructions.

3. Unless otherwise noted, insulation may be any one layer or combination of polyisocyanurate, polystyrene, wood fiberboard, perlite, gypsum-based roof board or mineral-wool roof board that meets the QA requirements of F.A.C. Rule 61G20-3 and is documented as meeting FBC 1505.1 and, for foam plastic, FBC Chapter 26, when installed with the roof cover.

4. Minimum 200 psi, minimum 2-inch thick lightweight insulating concrete may be substituted for rigid insulation board for System Type D (mechanically attached base sheet, bonded roof cover), whereby the base sheet fasteners are installed through the LWIC to engage the structural steel or concrete deck. The structural deck shall be of equal or greater configuration to the steel and concrete deck listings. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction. Load resistance of the roof deck shall be documented through proper codified and/or FBC Approval documentation.

5. Preliminary insulation attachment for System Type D: Unless otherwise noted, refer to Section 2.2.10.1.3 of FM Loss Prevention Data Sheet 1-29 (January 2016).

6. Unless otherwise noted, insulation adhesive application rates are as follows. Ribbon or bead width is at the time of application; the ribbons/beads shall expand as noted in the manufacturer's published instructions.
   - Hot asphalt (HA): Full coverage at 25-30 lbs/square.
   - Dow INSTA STIK Quik Set Insulation Adhesive (D-IS): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c.
   - Millennium One Step Foamable Adhesive (M-OSFA): Continuous 0.25 to 0.5-inch wide ribbons, 12-inch o.c.
   - Millennium PG-1 Pump Grade Adhesive (M-PG1): Continuous 0.25 to 0.5-inch wide ribbons, 12-inch o.c.
   - OMG OlyBond 500 (OB500): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c. (PaceCart or SpotShot). *Note: OlyBond Green may be used where OlyBond 500 is referenced.*
   - OlyBond Classic (OB Classic): Full coverage at 1 gal/square.
   - ICP Adhesive & Sealants Polyset CR-20: Continuous 2.5-3.5-inch wide ribbons, 12-inch o.c.
   - *Note: When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, board joints shall be staggered.*
   - *Note: The maximum edge distance from the adhesive ribbon to the edge of the insulation board shall be not less than one-half the specified ribbons spacing.*

7. Unless otherwise noted, all insulations are flat-stock or taper board of the minimum thickness noted. Tapered polyisocyanurate at the following thickness limitations may be substituted with the following Maximum Design Pressure (MDP) limitations. In no case shall these values be used to 'increase' the MDP listings in the tables; rather if MDP listing below meets or exceeds that listed for a particular system in the tables, then the thinner board listed below may be used as a drop-in for the equivalent thicker material listed in the table:
   - Millennium One Step Foamable Adhesive (M-OSFA): MDP -157.5 psf (Min. 0.5-inch thick)
   - Millennium PG-1 Pump Grade Adhesive (M-PG1): MDP -157.5 psf (Min. 0.5-inch thick)
   - OMG OlyBond 500 (OB500): MDP -45.0 psf (Min. 0.5-inch thick Multi-Max FA-3)
   - OMG OlyBond 500 (OB500): MDP -187.5 psf (Min. 0.5-inch thick ISO 95+ GL)
   - OMG OlyBond 500 (OB500): MDP -315.0 psf (Min. 0.5-inch thick ENRGY 3)
   - OMG OlyBond 500 (OB500): MDP -487.5 psf (Min. 0.5-inch thick ACFoam II)
   - ICP Adhesives & Sealants Polyset CR-20: MDP -117.5 psf (Min. 1.0-inch thick)

8. Bonded polyisocyanurate insulation boards shall be maximum 4 x 4 ft.

9. For mechanically attached components or partially bonded insulation, the maximum design pressure for the selected assembly shall meet or exceed the Zone 1 design pressure determined in accordance with FBC Chapter 16, and 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, Roofing Application Standard RAS 117 and Roofing Application Standard RAS 137. 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.

10. For fully bonded assemblies, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with FBC Chapter 16, and no rational analysis is permitted.

11. For mechanically attached components over existing decks, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing and analysis shall be in accordance with ANSI/SPRI FX-1 or Testing Application Standard TAS 105.

12. For existing substrates in a bonded recover or re-roof installation, the existing roof surface or existing roof deck shall be examined for compatibility and bond performance with the selected adhesive, and the existing roof system (for recover) shall be capable of resisting project design pressures on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing in accordance with ANSI/SPRI IA-1, ASTM E907, FM Loss Prevention Data Sheet 1-52 or Testing Application Standard TAS 124.

13. For Recover Applications using System Type D, the insulation is optional; however, the existing roof system shall be suitable for a recover application.

14. Lightweight Insulating Concrete (LWC) shall be cast in accordance with FBC Section 1917 to the satisfaction of the Authority Having Jurisdiction. For systems where specific LWC is referenced, refer to current LWC Product Approval for specific deck construction and limitations. Unless otherwise noted, for systems where specific LWC is not referenced, the minimum design mix shall be 300 psi. In all cases, the minimum top-coat thickness is 2-inches. For LWC over structural concrete, reference is made to FBC Section 1917.4.1, Point 1. For "pre-existent" LWC references, listings were established through testing over lightweight concrete cast using only foaming agent (ASTM C896), water and Portland cement (ASTM C150), with no proprietary additives, in accordance with procedures adopted by Miami-Dade BCCO (FBC CER1592). Unless otherwise noted, use of these listings in new construction or re-roof (tear-off) applications is at the discretion of the Designer or Record and Authority Having Jurisdiction.

15. Unless otherwise noted, refer to the following references for bonded base, ply or cap sheet applications.

POLYGLASS ROOF COVERS			
REFERENCE	**LAYER**	**MATERIAL**	**APPLICATION**
BP-AA (Base and Ply sheets, Asphalt-Applied)	Base Ply	One or more plies Polyglass G2 Base, FBC Approved ASTM D4601, Type II	Hot Asphalt at 20-40 lbs/square
	Ply	One or more plies Polyglass Ply IV, Polyglass Ply VI, FBC Approved ASTM D2178, Type IV or VI	
	Note:	***Asphalt-applied sheets or insulation shall not be applied to poly-film surfaced membranes.***	
SBS-CA1	Base Ply	One ply Elastobase (sand/sand), Elastoflex V, Elastoflex S6, Elastoflex S6 HP, Elastoshield HT	PG350 at 1.5-2.0 gal/square
	Cap Ply	Elastoflex V G, Elastoflex V G FR, Elastoflex S6, Elastoflex S6 HP, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TS G, Elastoshield TS G FR, Polyfresko G SBS (sand-backed), Polyfresko G SBS FR (sand-backed)	
SBS-CA2	Base Ply	One ply Elastobase (sand/sand), Elastoflex V, Elastoflex S6, Elastoflex S6 HP	Polyplus 35 at 1.5-2.0 gal/square
	Cap Ply	Elastoflex V G, Elastoflex V G FR, Elastoflex S6, Elastoflex S6 HP, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TS G, Elastoshield TS G FR, Polyfresko G SBS (sand-backed), Polyfresko G SBS FR (sand-backed)	
SBS-AA (SBS, Asphalt-Applied)	Base Ply or Ply	One or more plies Elastobase (sand/sand or poly/sand), Elastobase P (sand/sand or poly/sand), Elastoflex V, Elastoflex S6, Elastoflex S6 HP, Elastoshield HT	Hot Asphalt at 20-40 lbs/square
	Cap Ply	Elastoflex V, Elastoflex V G, Elastoflex V G FR, Elastoflex S6, Elastoflex S6 HP, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TS G, Elastoshield TS G FR, Polyfresko G SBS (sand-backed), Polyfresko G SBS FR (sand-backed)	
	Note:	***Asphalt-applied sheets or insulation shall not be applied to poly-film surfaced membranes.***	
SBS-TA (SBS, Torch-Applied)	Base Ply or Ply	One or more plies Elastobase (sand/poly), Elastobase (poly/poly), Elastoflex V, Elastoflex S6, Elastoflex S6 HP, Elastoshield HT	Torch-Applied
	Cap Ply	Elastoflex V, Elastoflex V G, Elastoflex V G FR, Elastoflex S6, Elastoflex S6 HP, Elastoflex S6 G, Elastoflex S6 G FR, Elastoshield TS G, Elastoshield TS G FR, Polyfresko G SBS (poly-film backed), Polyfresko G SBS FR (poly-film backed)	
SBS-SA (SBS, Self-Adhering)	Base Ply	One or more plies Elastoflex SA V, Elastoflex SA V FR, Elastoflex SA V Plus, Elastoflex SA V Plus FR	Self-Adhering
	Cap Ply	Elastoflex SA P, Elastoflex SA P FR, Polyreflect	
	Note:	***Unless otherwise noted, permissible membrane substrates for SBS-SA are limited to the SBS-SA Base Ply options herein, Elastobase (poly/sand) or Elastobase (poly/poly).***	
APP-CA1	Cap Ply	Polyflex G FR	PG350 at 1.5-2.0 gal/square
APP-TA (APP, Torch-Applied)	Base Ply or Ply	One or more plies Polyglass Base, Polyflex, Polybond	Torch-Applied
	Cap Ply	Polyflex, Polyflex G, Polyflex G FR, Polybond, Polybond G, Polyfresko G, Polyfresko G FR	
APP-SA (APP, Self-Adhering)	Cap Ply	Polyflex SA P, Polyflex SA P FR, Polyfresko G SA, Polykool	Self-Adhering
	Note:	***Unless otherwise noted, permissible membrane substrates for APP-SA are limited to the SBS-SA Base Ply options herein, Elastobase (poly/sand) or Elastobase (poly/poly).***	

16. Vapor barrier options for use over **structural concrete deck** followed by adhered insulation carry the following Maximum Design Pressure (MDP) limitations. The **lesser** of the MDP listings below vs. those in **Table 3A** applies:

VAPOR BARRIER OPTIONS; STRUCTURAL CONCRETE DECK; ADHERED INSULATION PER TABLE 3A					
OPTION #	**PRIMER**	**VAPOR BARRIER**		**INSULATION ADHESIVE**	**MDP (PSF)**
		TYPE	**ATTACH**		
VB-1.	PG100	Elastoflex SA V Plus	Self-Adhering	Inta-Stik or CR-20, 12-inch o.c.	-60.0
VB-2.	PG100	Polyglass Base	Torch-applied	Inta-Stik or CR-20, 12-inch o.c.	-75.0
VB-3.	PG100	Elastoflex SA P	Self-Adhering	Insta-Stik, 12-inch o.c.	-75.0
VB-4.	PG100	Elastoflex SA P	Self-Adhering	Millennium One Step Foamable Adhesive, 12-inch o.c.	-157.5
VB-5.	PG100	Elastoflex SA P	Self-Adhering	CR-20, 12-inch o.c.	-270.0
VB-6.	PG100	Elastoflex SA V, Elastoflex SA V FR, Elastoflex SA V Plus, Elastoflex SA V Plus FR	Self-Adhering	Millennium One Step Foamable Adhesive, Millennium PG-1 Pump Grade Adhesive, OlyBond 500 or CR-20, 12-inch o.c.	-290.0

17. The following surfacing may be applied to the Cap Ply without adverse effect on the system wind load performance. Refer to current Florida Product Approval for approved Polyglass and KM Coatings roof coatings for application limitations and a Roofing Materials Directory for fire ratings associated with coating usage.

SURFACING OPTIONS FOR POLYGLASS MODIFIED BITUMEN ROOF SYSTEMS		
Option #	**Surfacing**	**Florida Product Approval**
SURF-1.	PG300 Fibered Roof Coating	FL10291
SURF-2.	PG600 Non-Fibered Aluminum Roof Coating	FL10291
SURF-3.	PG650 Fibered Aluminum Roof Coating	FL10291
SURF-4.	PG700 High Quality Elastomeric Roof Coating	FL10291
SURF-5.	PG700QS (Quick Set) High Quality Elastomeric Roof Coating	FL10291
SURF-6.	PG800 Asphalt Emulsion Roof Coating	FL10291
SURF-7.	Polyplus 60 Premium Non-Fibered Aluminum Roof Coating	FL10291
SURF-8.	Polyplus 65 Premium Fibered Aluminum Roof Coating	FL10291
SURF-9.	Polybrite 70 Premium Grade Elastomeric Roof Coating	FL10291
SURF-10.	Polybrite 70QS (Quick Set) Premium Grade Elastomeric Roof Coating	FL10291
SURF-11.	Polybrite 71 HS	FL10291
SURF-12.	Polybrite 90 High Solids Silicone Roof Coating	FL10291
SURF-13.	Polybrite 95 Silicone Roof Coating	FL10291
SURF-14.	KM Acryl 15	FL27409
SURF-15.	KM Acryl 15 QS	FL27409
SURF-16.	KM Acryl 25	FL27409
SURF-17.	KM Acryl 25 QS	FL27409
SURF-18.	KM Acryl 40 HS	FL27409
SURF-19.	KM Acryl 85	FL27409
SURF-20.	KM PS#250	FL27409
SURF-21.	KM PS#220	FL27409

18. "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC 1609 for determination of design wind loads.

RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE ROOFING CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

MORALES, JOSE A

TOTAL ROOF SERVICES CORP
1820 NORTH RIO GRANDE AVENUE
ORLANDO FL 32804

LICENSE NUMBER: CCC1330329

EXPIRATION DATE: AUGUST 31, 2020

Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

Tax Collector Scott Randolph **Local Business Tax Receipt** **Orange County, Florida**

2018 **EXPIRES 9/30/2019**

5000	BUSINESS OFFICE	$30.00	5 EMPLOYEES	1806	ROOFING CONTRACTOR	$30.00	5000-1120731 1 EMPLOYEE	

TOTAL TAX	$60.00
PREVIOUSLY PAID	$60.00
TOTAL DUE	$0.00

JACKSON ERIC A
MORALES JOSE A QUALIFIER

TOTAL ROOF SERVICES CORP
1820 N RIO GRANDE AVE
ORLANDO FL 32804

1820 N RIO GRANDE AVE
A - ORLANDO, 32804

PAID: $60.00 0099-00853665 8/24/2018

Tax Collector Scott Randolph **Local Business Tax Receipt** **Orange County, Florida**

This local Business Tax Receipt is in addition to and not in lieu of any other tax required by law or municipal ordinance. Businesses are subject to regulation of zoning, health and other lawful authorities. This receipt is valid from October 1 through September 30 of receipt year. **Delinquent penalty is added October 1.**

2018 **EXPIRES 9/30/2019**

5000	BUSINESS OFFICE	$30.00	5 EMPLOYEES	1806	ROOFING CONTRACTOR	$30.00	5000-1120731 1 EMPLOYEE	

TOTAL TAX	$60.00
PREVIOUSLY PAID	$60.00
TOTAL DUE	$0.00

JACKSON ERIC A
MORALES JOSE A QUALIFIER

TOTAL ROOF SERVICES CORP
1820 N RIO GRANDE AVE
ORLANDO FL 32804

1820 N RIO GRANDE AVE
A - ORLANDO, 32804

PAID: $60.00 0099-00853665 8/24/2018

This receipt is official when validated by the Tax Collector.

Orange County Code requires this local Business Tax Receipt to be displayed conspicuously at the place of business in public view. It is subject to inspection by all duly authorized officers of the County.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/22/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Frank H. Furman, Inc.
1314 East Atlantic Blvd.
P. O. Box 1927
Pompano Beach FL 33061

CONTACT NAME: Griselidys Acosta
PHONE (A/C, No, Ext): (954) 943-5050 **FAX (A/C, No):** (954) 942-6310
E-MAIL ADDRESS: gris@furmaninsurance.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Berkley Assurance Co	39462
INSURER B: Vantapro Specialty Insurance Company	44768
INSURER C: National Union Fire Insurance	19445
INSURER D: Columbia Casualty	31127
INSURER E: Zurich Ins/US Assure	17965
INSURER F:	

INSURED
Total Roof Services Corp
1920 N Rio Grande
Orlando FL 32804

COVERAGES **CERTIFICATE NUMBER:** 19/20 MASTERAUTO RENEWED **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [ ] OCCUR [X] GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [ ] PRO-JECT [X] LOC [ ] OTHER:			VUMD0001510	3/16/2019	3/16/2020	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Cyber Liability	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 100,000
B	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS [ ] SCHEDULED AUTOS [ ] X HIRED AUTOS X NON-OWNED AUTOS			5087046500	6/5/2019	6/5/2020	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) PIP-BASIC	$ 1,000,000 $ $ $ $ 10,000
C	[ ] UMBRELLA LIAB [X] OCCUR X EXCESS LIAB [ ] CLAIMS-MADE X DED 0 RETENTION $			BE011505523	3/16/2019	3/16/2020	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000 $
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A					PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $
D	ERRORS & OMISSIONS/POLLUTION			CEO6057000948	3/16/2019	3/16/2020	POLICY AGGREGATE	$1,000,000
E	INLAND MARINE			EC06682860	5/31/2019	5/31/2020	Leased/Rented Equip	$100,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER
cobipermits@UniversalEngineer
City of Belle Isle
1600 Nela Ave
Belle Isle, FL 32809

CANCELLATION
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Dirk DeJong/GA