

Evaluation Report

SPRAYTITE® 178 Series & COMFORT FOAM® 178 Series Spray-Applied Polyurethane Foam Adhesive

Manufacturer

BASF CORPORATION

1703 Crosspoint Avenue
Houston, TX 77054
(713)-383-4554

for

Florida Product Approval

FL 13001.2 R6

Florida Building Code 8th Edition (2023)

Per Rule 61G20-3

Method: 2 – B

Category: Roofing

Sub - Category: Cements – Adhesives – Coatings

Product Name: SPRAYTITE® 178 Series & COMFORT FOAM® 178 Series

Product Description: Spray-Applied Polyurethane Foam Adhesive

Deck Type: Plywood

Application Type: 3 inch Full Insulation Layer

This item has been digitally signed and sealed by James L. Buckner, P.E., on this date below. Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

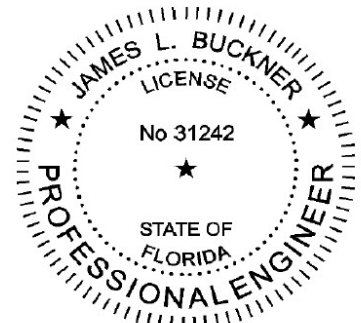
Prepared by:

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Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Report No. 23-605-D-Full-Ply-ER7
(Revises Report No. 22-272-D-Full-Ply-ER7, FL13001.2 R5)
Date: 12/26/2023

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1.0 Product

- 1.1 **Manufacturer:** BASF CORPORATION
- 1.2 **Product Names:** SPRAYTITE® 178 Series
COMFORT FOAM® 178 Series

2.0 Evaluation Scope:

- 2.1 **Compliance with the following**
Florida Building Code 8th Edition (2023)
- 2.2 **Evaluation Method:**
Florida Product Approval Rule 61G20-3.005 (2) (b)
- 2.3 **Evaluation Classification:**
Category: Roofing
Sub Category: Adhesives
- 2.4 **Properties Evaluated**
Structural Properties
- 2.5 **Limits of Evaluation:**
This product assembly evaluation is limited to compliance with section 2.1 to section 2.4 of this report.

3.0 Evaluated Uses:

- 3.1 **Structural:**
COMFORT FOAM® 178 Series & SPRAYTITE® 178 Series, as evaluated in this report, can be used for supplemental attachment of roof plywood deck to rafters/truss top chords (dimensional lumber) for commercial and residential buildings. This product may be used for code-plus wind resistance in new construction or for enhancing the wind uplift resistance on existing structures.

4.0 Product Assembly Description:

- 4.1 **General:**
COMFORT FOAM® 178 Series & SPRAYTITE® 178 Series are a two-component, closed-cell, spray-applied, rigid, polyurethane foam plastic. COMFORT FOAM® 178 Series & SPRAYTITE® 178 Series are produced in the field by combining an isocyanate component "A" with a resin-based component "B". This spray foam adhesive provides wind uplift resistance when fully applied to the underside of the roof deck connecting the joints of the roof plywood deck to the rafter/truss top chords.

5.0 Evaluated Components to be Adhered:

5.1 Roof Deck:

Type: Plywood per FBC Chapter 23

5.2 Rafter/Truss Top Chord:

Function: Typically Roof Rafter or Wood Truss Top Chord

Type: Dimensional Lumber

Spacing: 24 in. o.c. (As Tested and Evaluated)

(Design of components is outside the scope of this evaluation)

6.0 Product Assembly Structural Performance:

6.1 Allowable Design Uplift Resistance:

Resistance - 200 PSF

7.0 Performance Standard:

7.1 The following test protocols were performed to demonstrate compliance with the intent of the code:

- TAS 202, *Criteria for Testing Building Envelope Components using Uniform Static Air Pressure* (Structural & Negative Load Only)
- TAS 203, *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading*
- ASTM E330 – *Standard Test Method for Structural by Uniform Static Air Pressure Difference* (Structural & Negative Load Only)

8.0 Code Compliance:

8.1 The product assembly described herein has demonstrated compliance with the:

8.1.1 Florida Building Code 8th Edition (2023), Section 1708.2

9.0 Limitations and Conditions of Use:

- 9.1 Application of Spray Polyurethane Foam to the underside of plywood deck shall be compatible with design parameters of the complete roof assembly.
- 9.2 Design considerations beyond the scope of this structural connector evaluation shall be the responsibility of others.
- 9.3 Spray Polyurethane Foam Adhesive shall be installed by a BASF qualified spray foam applicator trained in the processing and application of SPF systems as well as the plural component polyurethane dispensing equipment.

9.4 Scope of "Limitations and Conditions of Use" for this evaluation:

This evaluation report for "State Approval" contains technical documentation, specifications and installation method(s) which include "Limitations and Conditions of Use" throughout the report in accordance with Rule 61G20-3.005. Per Rule 61G20-3.004, the Florida Building Commission is the authority to approve products under "State Approval".

9.5 Option for application outside "Limitations and Conditions of Use"

Rule 61G20-3.005(1)(e) allows engineering analysis for "project specific approval by the local authorities having jurisdiction in accordance with the alternate methods and materials authorized in the Code". Chapter one of the FBC and IBC addresses design for alternative materials, design and methods of construction. Any modification of the product as evaluated in this report and approved by the Florida Building Commission is outside the scope of this evaluation and will be the responsibility of others.

9.6 The scope of this evaluation is limited to structural properties.

9.7 This report does not evaluate the use of this product for other types of applications as allowed in the code.

9.8 Fire Classification and Thermal Properties are outside the scope of Rule 61G20-3, and are therefore not included in this evaluation.

9.9 This report does not evaluate the use of this product for use in the High Velocity Hurricane Zone code section. (Dade & Broward Counties)

10.0 Quality Assurance:

The manufacturer has demonstrated compliance of products in accordance with the Florida Building Code and Rule 61G20-3.005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through **UL, LLC**. (FBC Organization ID# QUA 9625)

11.0 Components & Material Standards:

SPRAYTITE® 178 Series is a two component spray polyurethane foam system. It is the base formulation, natural in color, with no chemical dye.

COMFORT FOAM® 178 Series is SPRAYTITE® 178 Series with a small amount of blue chemical dye in the resin formulation.

Material shall comply with:

<u>Property:</u>	<u>Values:</u>	<u>Standard:</u>
Core Density	1.5 – 3.0 pcf	ASTM D 1622
Compressive Strength	22 psi minimum	ASTM D 1621
Tensile Strength	28 psi minimum	ASTM D 1623

12.0 General Installation Method:

- Surface Preparation:

All surfaces intended to receive the spray foam must be dry, clean, secure, and free of any oils, grease, or other contaminant(s) that may disrupt adhesion. Remove sawdust and other debris from areas intended to receive the spray foam by blowing with compressed air or vacuuming with a shop vacuum. Check surfaces with moisture detection strips or other reliable method(s) to verify dryness.

- Full Insulating Layer Application:

Apply the spray foam in a uniform layer to the entire underside of the roof deck between the rafter members in multiple applications (or "lifts") between 1/2-inch and 1-1/2-inches thick per "lift" to a minimum total thickness of 3-inches.

Install the system in compliance with the evaluated installation method(s). The installation method(s) described herein have been evaluated to address the scope of the evaluation. Refer to manufacturer's installation instructions as a supplemental guide for spray foam application.

(Refer to installation method on Page 6 of this evaluation report.)

13.0 Evaluation Reference Data:

13.1 Testing Application Standard (TAS) 202

Criteria for Testing Building Envelope Components using Uniform Static Air Pressure
By Element Materials Technology (TST ID: 9778) Formerly known as Certified Testing Laboratories, Inc.
Test Number# CTLA 1978W-1, Date: 08/25/09

13.2 Testing Application Standard (TAS) 203

Criteria for Testing Products Subject to Cyclic Wind Pressure Loading
By Element Materials Technology (TST ID: 9778) Formerly known as Certified Testing Laboratories, Inc.
Test Number# CTLA 1978W-1, Date: 08/25/09

14.3 ASTM E330

Test Method for Structural Performance by uniform Static Air Pressure Difference
By Element Materials Technology (TST ID: 9778) Formerly known as Certified Testing Laboratories, Inc.
Test Number# CTLA 1978W-2, Date: 08/25/09

14.4 Quality Assurance

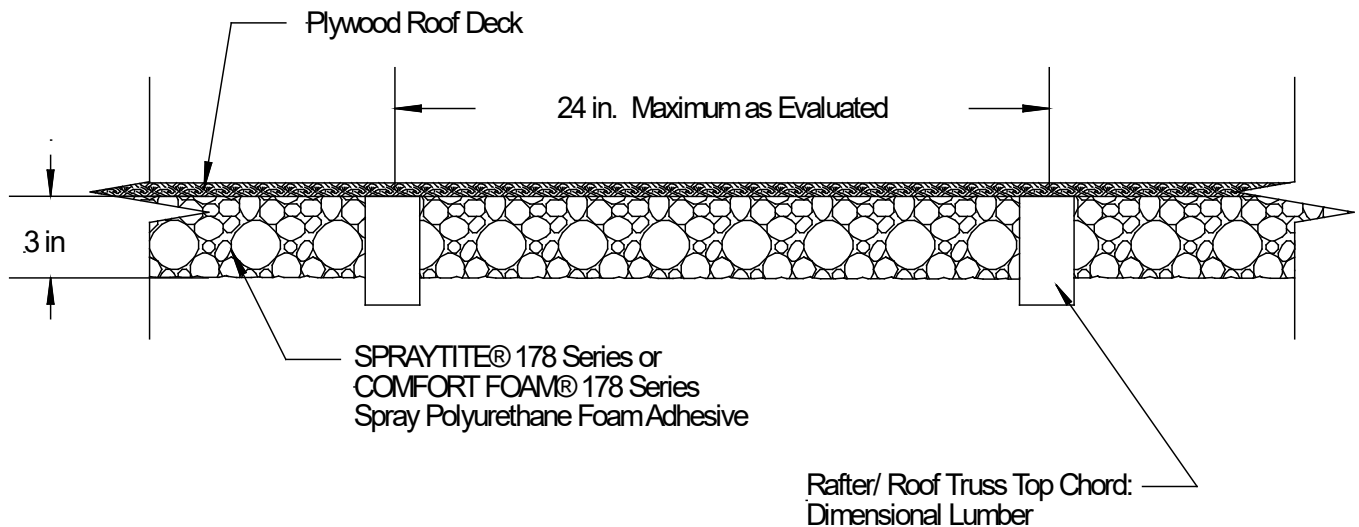
UL, LLC. (FBC Organization ID# QUA 9625)

14.5 Certification of Independence

By James L. Buckner, P.E. @ CBUCK Engineering
(FBC Organization # ANE 1916)

**Installation Method
BASF Corporation
Spray Polyurethane Foam Adhesive System with Plywood Roof Deck**

Application Type: Full Insulating Layer



Typical Roof Deck Section