

Evaluation Report

“The Bullet Boot”

Manufacturer:

Direct Metals, Inc.

17600 East Street
N. Fort Myers, FL 33917
(239) 599-8527

For

Florida Product Approval

FL 25870.1 R2

Florida Building Code 8th Edition (2023)

Per Rule 61G20-3

Method: 2 - B

Category: Roofing

Sub - Category: Roofing Accessories that are an Integral Part of the Roof System

Product Name : “The Bullet Boot”

Support: Wood Deck

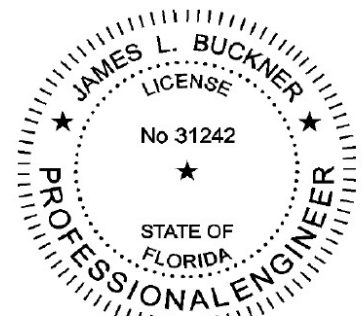
This item has been digitally signed and sealed by James L. Buckner, P.E., on this date below. Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

Prepared by:

James L. Buckner, P.E., SECB
Florida Professional Engineer # 31242
Florida Evaluation ANE ID: 1916
Report No. 23-582.01-BB-ER
(Revises Report No. 20-301.01-BB-ER, FL25870.1 R1)
Date: 12/26/2023

Contents:

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James L. Buckner, P.E.
FL31242

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Manufacturer:	Direct Metals, Inc.
Product Name:	“The Bullet Boot”
Product Category:	Roofing
Product Sub-Category	Roofing Accessories that are an Integral part of the Roofing System
Compliance Method:	State Product Approval Rule 61G20-3.005 (2) (b)
Product/System Description:	The “Bullet Boot” is designed to be an aesthetically pleasing and alternative for lead pipe boot flashings for single roofing pipe penetrations. The Bullet Boot is manufactured in multiple sizes and is made of flexible TPE.
Models:	Pipe Size for Schedule 40 PVC 1-1/2” 2” 3” 4”
Product Assembly as Evaluated:	Refer to Page 4 of this report for product assembly components/materials & standards: <ol style="list-style-type: none">1. “The Bullet Boot”2. Fasteners Attached to Plywood Deck Support
Support:	Type: Wood Deck (Design of support system is outside the scope of this evaluation) Description: <ul style="list-style-type: none">• 15/32” or greater Plywood,• or Wood plank deck (based on minimum density/specific gravity of 0.42)
Structural Rating:	<u>Wind Uplift Structural Resistance:</u> <u>Option 1:</u> 8 Fasteners Design Uplift Pressure -90 PSF <u>Option 2:</u> 16 Fasteners Design Uplift Pressure -320 PSF Resistance in ASD with a Safety Factor of 2 to 1

Performance Standards: The following test protocol was performed to demonstrate compliance with the intent of the code.

- ASTM E330 – Modified Standard test method for Structural performance of exterior windows, doors, skylights, and curtain walls by uniform static pressure difference

Code Compliance: The product described herein has demonstrated compliance with: Florida Building Code 8th Edition (2023), Section 1708.2

Evaluation Report Scope: This product evaluation is limited to compliance with the structural requirements of the Florida Building Code, as related to the scope section to Florida Product Approval Rule 61G20-3.001.

Limitations and Conditions of Use:

- Scope of “Limitations and Conditions of Use” for this evaluation:
This evaluation report for “Optional Statewide 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 “Optional Statewide Approval”.
- 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”. 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.
- Design of support system is outside the scope of this report.
- Fire Classification is outside the scope of Rule 61G20-3, and is therefore not included in this evaluation.
- This evaluation report does not evaluate the use of this product for use in the High Velocity Hurricane Zone code section. (Dade & Broward Counties)

Quality Assurance: The manufacturer has demonstrated compliance of roof panel 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 **Keystone Certifications, Inc.** (FBC Organization #: QUA 1824).

**Components/Materials
(by Manufacturer):**

The Bullet Boot

Material Type:	Flexible TPE
Tear Strength:	195 lbs/in Nominal per ASTM D624
Tensile Strength:	1825 psi (Typical) per ASTM D412
Height:	12" Nominal

Model Sizes:

Diameter:	1 ½", 2", 3", 4"
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Fastener(s):

Base Fastener:

Manufacturer:	Direct Metals
Model:	DMI Panclip MTW Fastener
Size:	#10-9 × 1" (min.)(or 3/16" Min Penetration thru deck)
Corrosion Resistance:	Per FBC Section 1506.5
Standard:	Per ASTM F 1667

Installation:

Installation Method:

(Refer to drawings on Pages 5-6 of this report.)

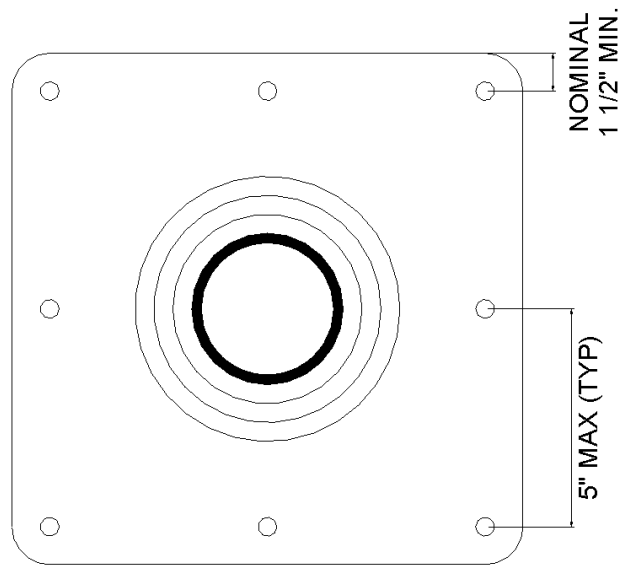
Install the "The Bullet Boot" assembly in compliance with the installation method listed in this report and applicable code sections of FBC 8th Edition (2023). The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.

**Evaluation Referenced
Data:**

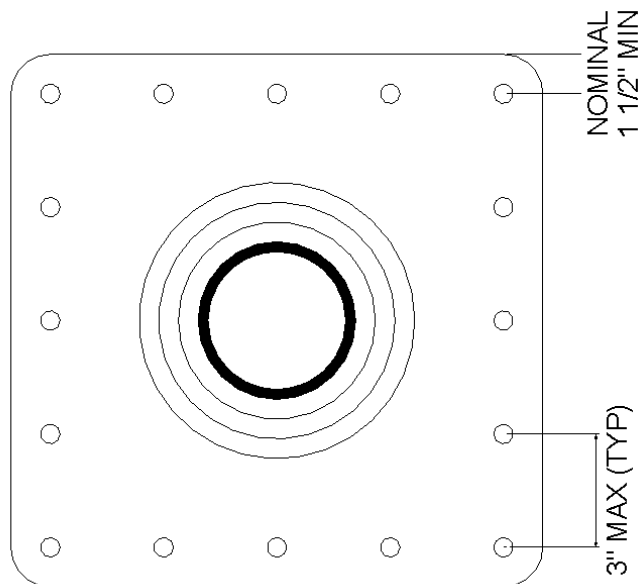
1. ASTM E330- Modified Uniform Static Pressure Test
American Test Lab of South Florida (FBC Organization #TST ID: 3782)
Project No.: 1222.01-17, Report Date: 12 / 22 / 17
2. Quality Assurance
Keystone Certifications, Inc. (QUA ID: 1824)
3. Certification of Independence
By James L. Buckner, P.E. @ CBUG Engineering
(FBC Organization # ANE 1916)

Installation Method
Direct Metals, Inc.
“The Bullet Boot” Components

Profile Drawings

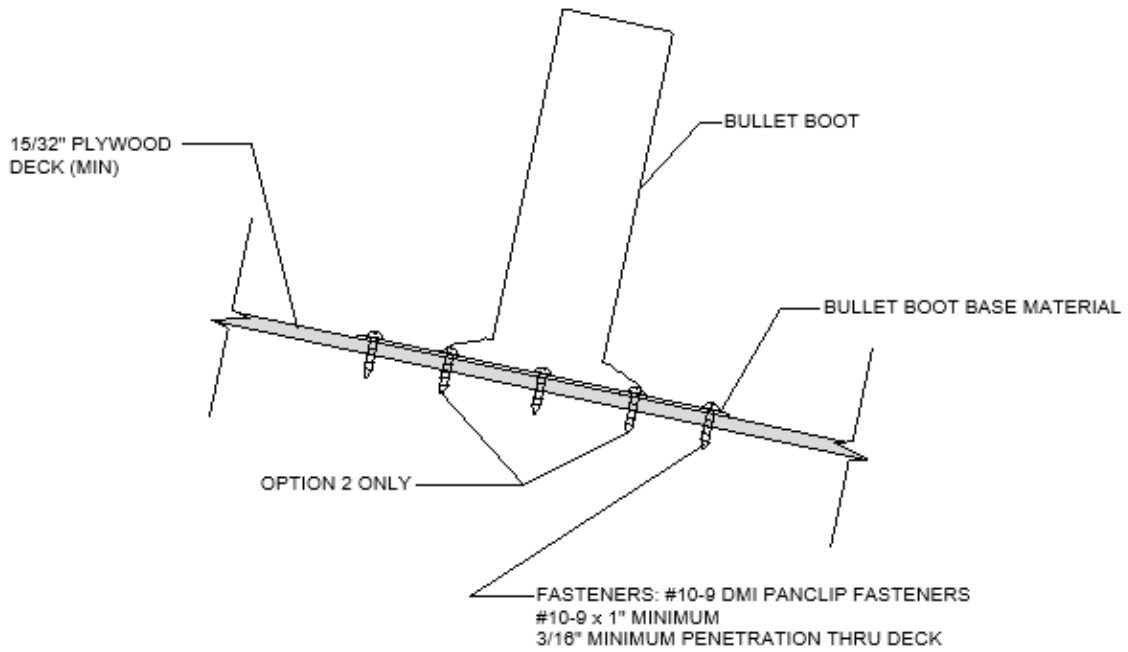


8 FASTENERS



16 FASTENERS

Installation Method
Direct Metals, Inc.
“The Bullet Boot” Attached to Plywood Deck



Side Assembly View