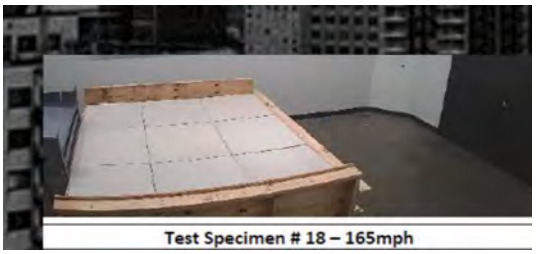
Berland Supply

Berland Supply 87 Healy Rd Cold Spring, NY 10516

# ETERNO WIND UPLIFT SYSTEM



Test Specimen # 18 – 165mph

## SPECIFICATIONS

| | |
|---|---|
| WIND RESISTANCE: | In accordance (see attached wind testing results) |
| THERMAL SHOCK RESISTANCE: | Resistant |
| FROST RESISTANCE | Resistant |
| CHEMICAL RESISTANCE: | Resistant |
| PORCELAIN WIND RESISTANCE | YES |
| WOOD PAVERS WIND RESISTANCE | YES |
| FIRE RESISTANT: | In accordance |

## ETERNO WIND UPLIFT SYSTEM BENEFITS

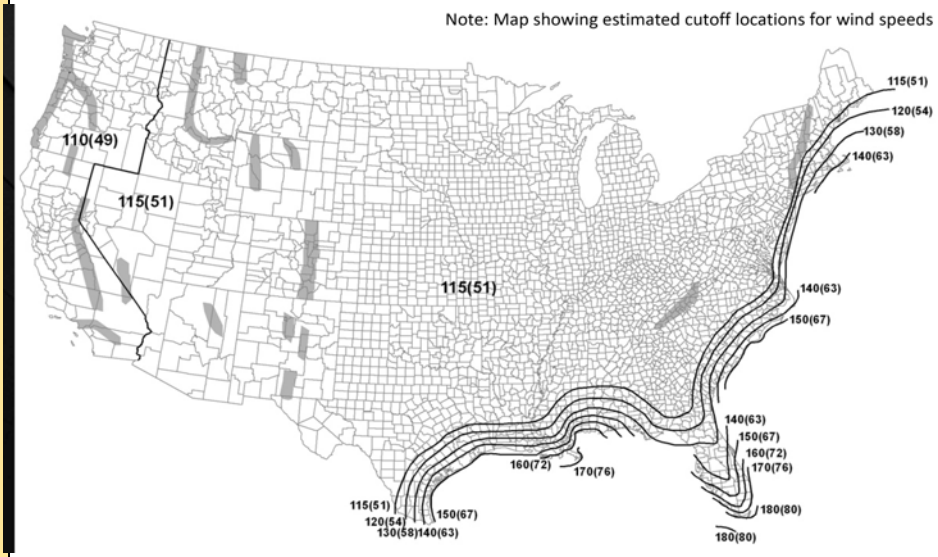
ETERNO Wind Uplift System is the premier wind uplift system on the market.

- Hidden fasteners. The floor maintains its original aesthetic
- Removability: Easy to unclip system and remove pavers individually
- Adjustable: clips and supports allow adjustability
- Absorbs expansion and structural movement
- Can be installed on pre-existing terraces
- Guarantees a solid bond between the pedestals and the porcelain tiles

***CERTIFIED WIND TEST ON PAGE 2 FOR MORE DETAILS**

DETAILS

Note: Map showing estimated cutoff locations for wind speeds



# Porcelain Paver Applications

Paver Grate enhances impact resistance for porcelain pavers in pedestal applications. It also provides a surface for loose laid pavers on deck pedestals in the event of breakage. Engineered to attach to the pedestals, Paver Grate creates a stable and secure foundation and mitigates wind uplift resistance. Porcelain should be adhered using 3M 550 adhesive for maximum strength.

Paver Grates are engineered with a slot cut in each corner enabling a special washer and finishing screw to be inserted. Once all grates are in place, the washer and screw are invisibly screwed into the corresponding screw pad at the top of the pedestal to “lock down” the grates, ensuring a safe, secure, and level surface. Our fastening kit makes removal of a centrally-located grate simple, and eliminates the need to remove all grates from the perimeter up to that point.

| | |
|---|---|
| DIMENSIONS | 23.5” x 23.5” |
| WEIGHT | 4 lbs per grate |

# PORCELAIN WIND TESTING

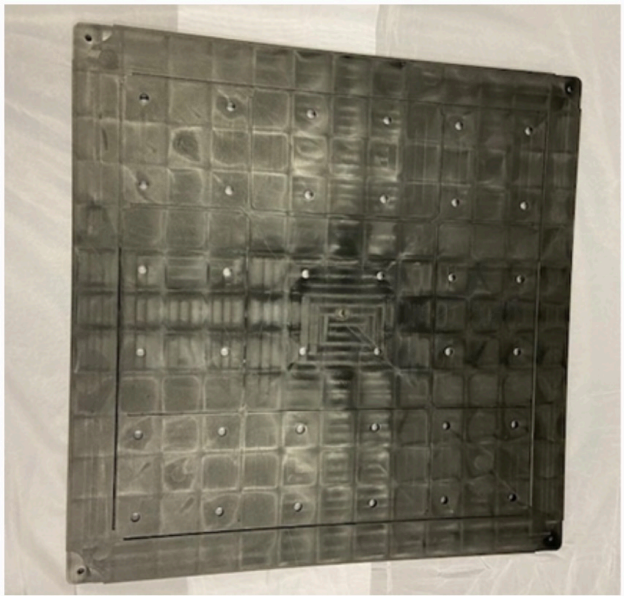
Above shows attachment method to the paver tray.

Below shows wind test being conducted at 165mph wind speeds. Note: No movement on pedestals or pavers.

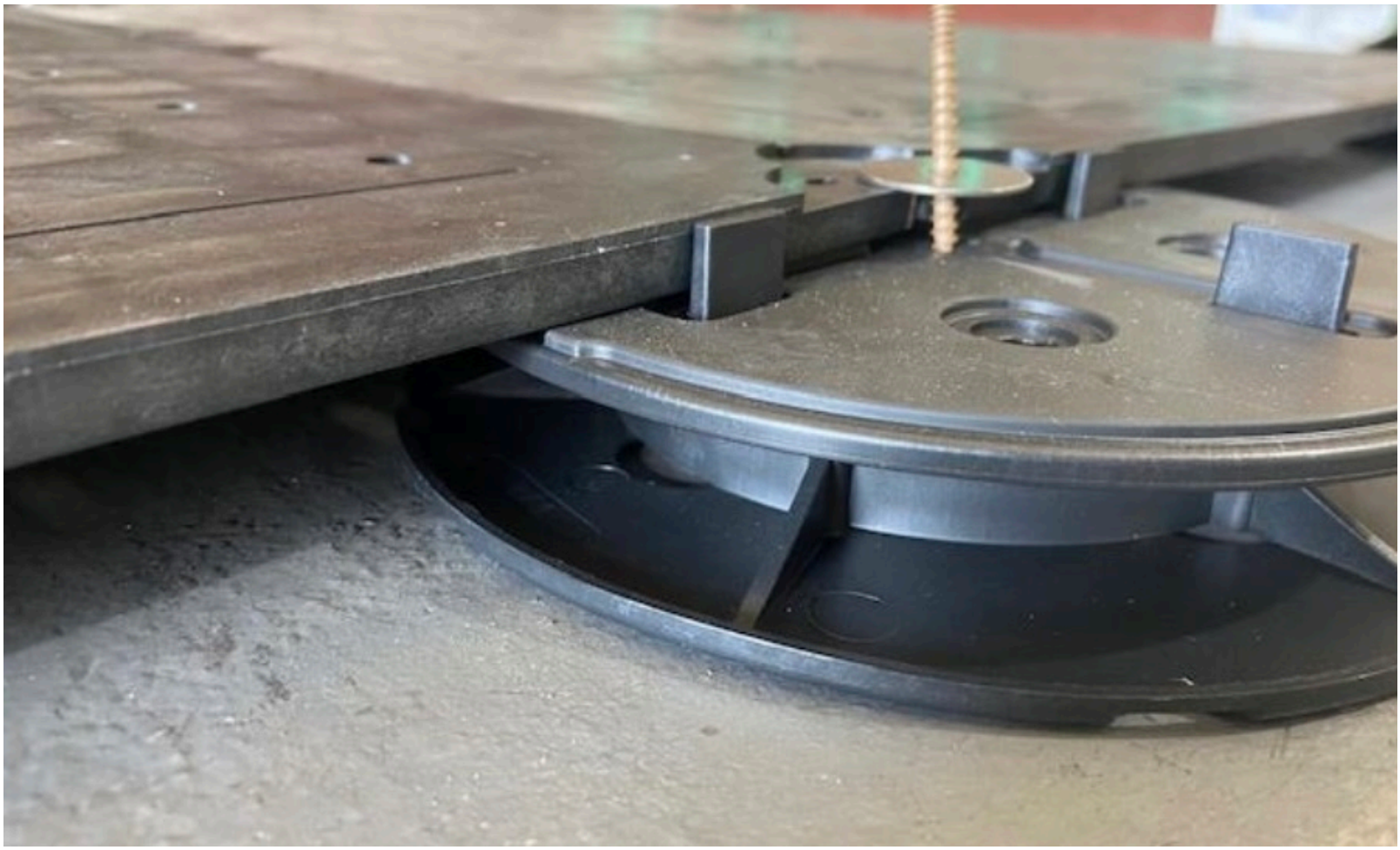
Test Specimen # 18 – 165mph

| | Description | Attachment | Additional Detail | ASTM D3161 modified |
|---|---|---|---|---|
| **Specimen #18: Secured 23.5" x 23.5" x 2" porcelain paver (Zero Parapet, pedestal base unadhered)** | | | | |
| Deck: | Structural Concrete | N/A | Troweled smooth finish | Deck #18:<br>145mph / 5 minutes – Pass<br>150mph / 5 minutes – Pass<br>160mph / 5 minutes – Pass<br>165mph / 5 minutes – Pass |
| Waterproofing: | Henry 790-11 (90mil)<br>Embedded Polyester fabric<br>Henry 790-11 (125mil) | Concrete primed with Henry 930-18 Primer at 200-300 ft2/gal | Protection Course:<br>Henry G100 s/s | |
| Insulation: | Owens Corning Foamular 600, 2 layers @ 3" thick each | Set in plastic Henry BES Sealant | NA | |
| Pedestal: | Black-3 Pedestal | Loose laid | N/A | |
| Paver: | 23.5" x 23.5" x .75"<br>Porcelain Paver | Fastener kit | | |

**TOP VIEW**



Screw and washer is used to lock the tray in to the pedestals for wind uplift.

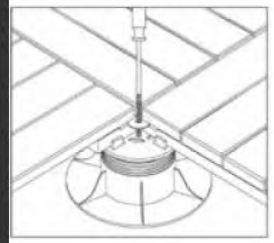


# WOOD PAVER APPLICATIONS

Fastening Kits for use with Wood Deck Tiles provide a secure connection between pedestals and the finished deck surface. The weight of the deck pavers creates a monolithic system to hold the system in place and mitigate against wind uplift. 2 fastening kit options for wood deck tile projects and recommends the use of both for best results. See 2 tables on this page for information.

ABOVE SHOWING WOOD PAVERS AT 165 MPH SUSTAINED WIND SPEEDS. NOTE: NO MOVEMENT OF PAVERS.

## SCREW & WASHER

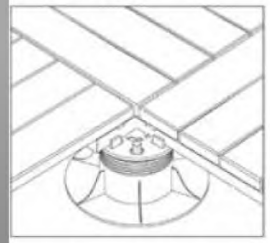


**Easily removable for repairs and maintenance**

Wood Deck Tiles are engineered with a slot cut in each corner enabling a special washer and finishing screw to be inserted. Once all tiles are in place, the washer and screw are invisibly screwed into the corresponding top of the pedestal to "lock down" the tiles, ensuring a safe, secure, and level surface. Our fastening kit makes removal of a centrally-located tile simple, and eliminates the need to remove all tiles from the perimeter up to that point.

Three wooden deck tiles are placed on a pedestal. The screw and washer is placed into the fastening slot of each wood deck tile. The fourth deck tile is placed on the pedestal and the screw is fastened down to lock the wood deck tiles in place.

## PLASTIC PINS



Wood Deck Tiles have a connection hole in the bottom corners of the pavers to secure a plastic pin which provides a connection to the pedestals. Once all tiles are in place, the plastic pins are invisible, and ensure a safe, secure, and level surface. With our plastic pin fastening kit, removal of tiles for repairs and maintenance is simple and straightforward.

Align the holes on the underside of the wood deck tiles with the plastic pins in the pedestals. Push down on tiles until connection is complete.

# WOOD PAVER INFORMATION

Deck Tiles and Decking meets 'Green By Nature™ 'Build with Conscience' comprehensive set of Controlled Wood, Chain of Custody, Life Cycle Impact and 'Due Care' Standards, Policies and Procedures that support environmental sustainability and compliance initiatives as shown on the right--→

Wood products have been verified of legal origin and verified of legal compliance as being, legally harvested, transported, exported, imported and documented in compliance with all country of origin, international and domestic laws, rules, regulations and treaties pertaining to the fair and legal trade of forest products including but not limited to the ITTA (International Tropical Timber Trade Agreement), CITES (Convention On The International Trade of Endangered Species) U.S. Department of Agriculture Lacey Act, U.S. Department of Justice Foreign Corrupt Practices Act, U.S. Forced Labor Laws and U.S. Buy American Act.

Wood products are derived from forests which are naturally occurring, renewable and sustainable and are not harvested from forests or forest plantations where traditional, civil or intellectual property rights have been violated, forests having high conservation values which are threatened, forests that have been genetically modified or forests which have been converted to non-forest use.

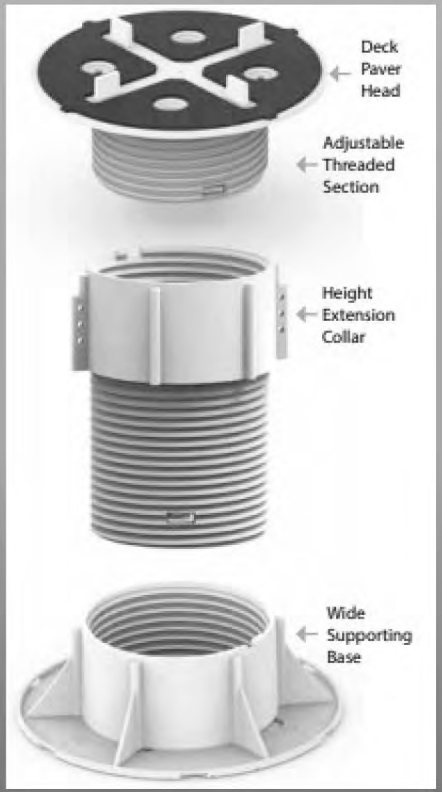
| | Description | Attachment | Additional Detail | ASTM D3161 modified |
|---|---|---|---|---|
| **Specimen #17A: Secured Ipe Tile (Zero Parapet) non adhered** | | | | |
| Deck: | Structural Concrete | N/A | Troweled smooth finish | Deck #8:<br>110mph / 5 minutes – Pass<br>115mph / 5 minutes – Pass<br>120mph / 5 minutes – Pass<br>125mph / 5 minutes – Pass<br>130mph / 5 minutes – Pass<br>135mph / 5 minutes – Pass<br>140mph / 5 minutes – Pass<br>145mph / 5 minutes – Pass<br>150mph / 5 minutes – Pass<br>160mph / 5 minutes – Pass<br>165mph / 5 minutes – Pass<br><br>Set back from orifice 12"<br>165mph / 5 minutes – Pass |
| Waterproofing: | Henry 790-11 (90mil)<br>Embedded Polyester fabric<br>Henry 790-11 (125mil) | Concrete primed with Henry 910-01 Primer at 100-500 ft²/gal | Protection Course:<br>Henry G100 s/s | |
| Insulation: | Owens Corning Foamular 600, 2 layers @ 3" thick | Loose Laid | NA | |
| Pedestal: | BLACK-3 Pedestal | Loose Laid | N/A | |
| Ipe Tile: | 24" x 24" x 1-5/8" Ipe Tile | Fastening Kit: Screw and Washer | N/A | |

Above shows test results of wood pavers under wind stress.

Green BY nature BUILD WITH CONSCIENCE

UNIFLORESTA VERIFIED LEGAL · THE CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA CITES · ITTO · USDA LACEY ACT COMPLIANT · Buy American Act Compliant · DEPARTMENT OF JUSTICE · LIFE CYCLE ASSESSMENT LCA

# THE PEDESTAL




| | |
|---|---|
| MATERIAL | Polypropylene and rubber (head top) |
| HEIGHT | 1" - 39" |
| BASE DIAMETER & THICKNESS | 8" x 1/16" |
| HEAD DIAMETER | 7" |
| BASE CONTACT SURFACE AREA | 49 $in^2$ |
| TAB HEIGHT & THICKNESS | 1/2" x 5/32" |

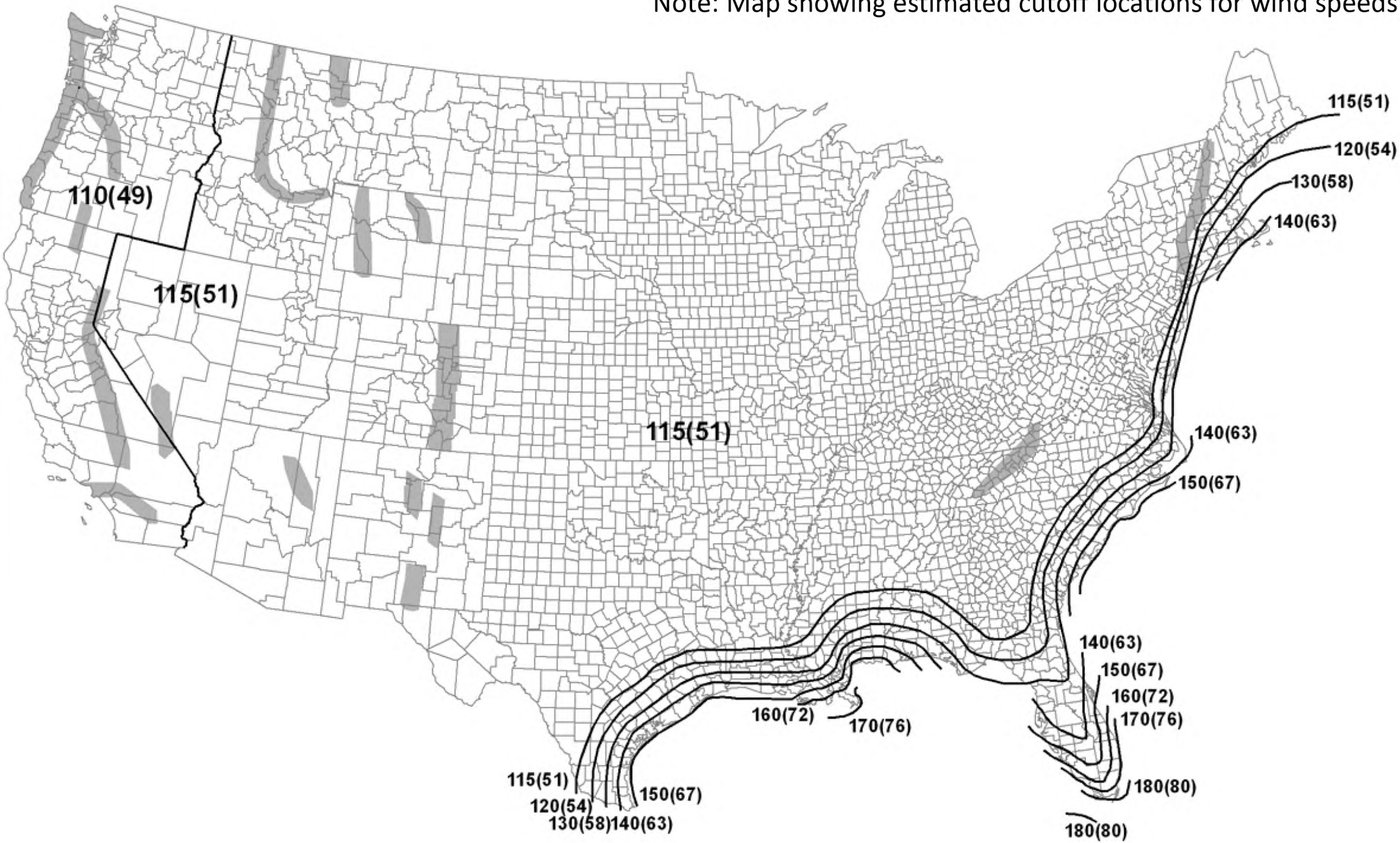
**Deck Paver Head:** Heavy duty fixed head; Designed specifically to hold and align all deck pavers and tiles.

**Adjustable Threaded Section:** Allows you to adjust the height in minute increments, within the given range.

**Height Extension Collar:** A simple design with a single 'click' motion to attach these extension collars build up the pedestals to a maximum height of 39".

**Wide Supporting Base:** Pedestals are loosely laid and do not require fixing to the floor. Large diameter spreads loads and ensures stability.

Note: Map showing estimated cutoff locations for wind speeds



Results Table: Secured 24" x 24" x 2" concrete paver

| | Description | Attachment | Additional Detail | ASTM D3161 modified |
|---|---|---|---|---|
| **Specimen #15: Secured 24" x 24" x 2" concrete paver (6 inch Parapet, non-adhered)** | | | | |
| Deck: | Structural Concrete | N/A | Troweled smooth finish | Deck #15:<br>150mph / 5 minutes – Pass<br>155mph / 5 minutes – Pass<br>160mph / 5 minutes – Pass<br>165mph / 5 minutes – Pass<br><br>Set back from orifice 12"<br>165mph / 5 minutes – Pass |
| Waterproofing: | Henry 790-11 (90mil)<br>Embedded Polyester fabric<br>Henry 790-11 (125mil) | Concrete primed with Henry 930-18 Primer at 200-300 ft2/gal | Protection Course: Henry G100 s/s | |
| Insulation: | Owens Corning Foamular 600, 2 layers @ 3" thick | Loose Laid | NA | |
| Pedestal: | | Loose Laid | N/A | |
| Concrete Paver: | 24" x 24" x 2" Concrete paver | Fastening kit | N/A | |

## STANDARD COLORS - Shotblast Finish

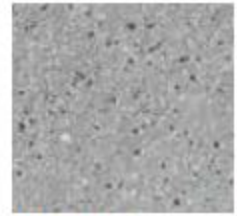
PA -14

PA -16

PA -18

PA -110

PA -113

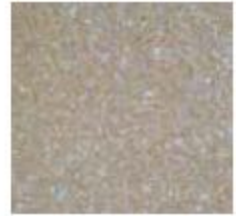

PA -123

PA -127

PA -131

PA -132

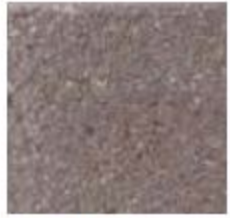
PA-150


PA -158

PA -160

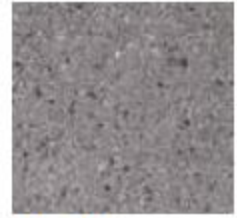
PA-161

PA -162


PA -163

PA -166

PA -168


PA -179

**Manufacturer's illustrations and Representative Photographs:**

**Test Specimen # 15 – prior to testing**

**Test Specimen # 15 – 165mph**

Notes: None

# TAS 124-20
# 5' x 5' Simulated Uplift Pressure Resistance Test

Date: 08-04-21

Miami – Dade Test #: ACRC 21-0220 Page: 3

## PRODUCT DESCRIPTION

**Deck:**

Structural concrete deck with a minimum strength of 2,500 psi

**Lightweight Insulating Concrete:**

N/A

Products--Eterno Wind System (Eterno Pedestals/Eterno Pavers)

**Roof System:** A 24" x 24" x 2" thick Concrete Wind Pavers set over Pedestals at every corner and fastened at the kerf cut with Fastening Kit (1-1/2" x 3/16" washer and a screw) to the top of the pedestal and loose laid on 2" thick Owens Corning Foamular 600 Extruded Polystyrene Insulation.

Owens Corning Foamular 600 Extruded Polystyrene Insulation loose laid to the HENRY G100s/s Protection Course

HENRY G100s/s Protection course set in hot 790-11 Rubberized asphalt applied at a rate of 125 mil thick over a reinforcing polyester fabric set in 790-11 hot Rubberized asphalt applied at a rate of 90 mil thick over the primed concrete deck.

Structural concrete deck primed with HENRY 910-01 Asphalt Primer.

Atop the waterproofing system and insulation layer, the described covering system was installed and evaluated. Representative test specimens were constructed by representatives of MRP SUPPORTS LLC and witnessed by ACRC. Constructed test specimens were tested with a 5'x5' Bell Chamber Apparatus.

# TAS-124-20
## 5' x 5' Simulated Uplift Pressure Resistance Test

**Date:** 08-04-21

**Miami – Dade Test #:** ACRC 21-0220 **Page:** 5

## CONCLUSION

Test results are reported in accordance with Miami-Dade County Protocol TAS 124-20,

ACRC – Atlantic & Caribbean Roof Consulting, LLC

**Reviewed By:**

Shirad Ali, BSC. ENG., RRO
Consultant

**Reviewed By:**

Eric H. Smause, RRO
President & Senior Roof Consultant

**Reviewed By:**

Richard Espinoza, P.E.
NO. 56172
Engineering V.P.

# TAS 124-20
## 5' x 5' Simulated Uplift Pressure Resistance Test

Date: 08-04-21

Miami – Dade Test #: ACRC 21-0220 Page: 4

| TEST RESULTS | | | | |
|---|---|---|---|---|
| Failure Pressure (PSF) | Failure Time (SEC) | Mode of Failure | Passing Pressure | Safety Margin 2 to 1 |
| -285 PSF | 43 seconds | Protection course separated from rubberized asphalt | -270 PSF | -135 PSF |

**OBSERVATIONS**

The 5' x 5' Simulated Wind Uplift Sample meet the minimum Miami- Dade County requirements with 2:1 safety factor. Failure occurred during the incremental increase from – 270 PSF to – 285 PSF.