Product Description

- Size: 8-1/2" x 16" x 1-1/2"
- Weight: 13.75 ± 0.5 lbs. per square foot
- Compressive strength: 5,000 psi @ 28 days cure
- Density: 125 pcf
- Water absorption: 5% nominal
- Meets or exceeds all SPRI requirements

Product Benefits

- Interlocking design provides superior wind resistance
- Easiest paver to install
- Four way drainage
- Smooth, rounded bearing pads protect the membrane from abrasion
- Durable
- Fireproof
- Freeze / thaw resistant

Design Conditions

Terrain Exposures ASCE / SEI 7-10

**Exposure B:**
For buildings with a mean roof height of less than or equal to 30 ft (9.1 m), Exposure B shall apply where the ground surface roughness, as defined by Surface Roughness B, prevails in the upwind direction for a distance greater than 1,500 ft (457 m). For buildings with a mean roof height greater than 30 ft (9.1 m), Exposure B shall apply where Surface Roughness B prevails in the upwind direction for a distance greater than 2,600 ft (792 m) or 20 times the height of the building, whichever is greater.

**Exposure C:**
Exposure C shall apply for all cases where Exposures B or D do not apply.

**Exposure D:**
Exposure D shall apply where the ground surface roughness, as defined by Surface Roughness D, prevails in the upwind direction for a distance greater than 5,000 ft (1,524 m) or 20 times the building height, whichever is greater. Exposure D shall also apply where the ground surface roughness immediately upwind of the site is B or C, and the site is within a distance of 600 ft (183 m) or 20 times the building height, whichever is greater, from an Exposure D condition as defined in the previous sentence.

For sites located in a transition zone between exposure categories, the category with the largest wind forces shall be used.

Surface Roughness Categories ASCE / SEI 7-10

**Surface Roughness B:** Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions have the size of single family dwellings or larger.

**Surface Roughness C:** Open terrain with scattered obstructions having heights generally less than 30 ft (9.1m). This category includes flat open country and grasslands.

**Surface Roughness D:** Flat, unobstructed areas and water surfaces. This category includes smooth mud flats, salt flats and unbroken ice.
The following wind speed tables indicate the maximum building design heights based on varying design wind speeds, parapet heights, and exposures when the Westile Ballast Paver system is used in Westile systems 1, 2, 3, and 4. For building heights in excess of 250 feet, contact Westile.

**System Design 3:** Pavers installed in staggered bond with edge attachment

**System Design 4:** Pavers installed in staggered bond with edge attachment and all pavers clipped or adhered to one another

### Terrain Exposure B

<table>
<thead>
<tr>
<th>Basic wind speed (mph)</th>
<th>System Design 3</th>
<th>System Design 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>250</td>
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<tr>
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### Terrain Exposure C

<table>
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<th>System Design 4</th>
</tr>
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</tr>
<tr>
<td>16</td>
<td>250</td>
<td>250</td>
</tr>
</tbody>
</table>

**NOTES:**

1) For wind speed and exposure areas see Chapter 23 of the Uniform Building Code and ASCE7-10
2) Design wind speeds are at 10 meters above ground level and produce increased wind speeds at various roof top elevations
3) Parapet heights noted in these tables are the parapet projections above the Ballast Paver surface
5) Linear interpolation for System 2 is acceptable

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![Diagram of wind speeds and building heights](image-url)
Part 1 - General
1.07 Delivery, Storage & Handling

1.01 Scope of Work
A. Furnish and install Westile Ballast Paver system in accordance with specifications as provided by Westile

1.02 Related Section
A. Section 07555: Membrane Roofing
B. Section 07220: Roof Insulation
C. Section 07715: Fascias

1.03 References
A. Applicable American Society for Testing and Materials (ASTM) Standards
B. Factory Mutual Data Sheet section 1-29

1.04 System Description
A. See pages 4-5 for system specific description

1.05 Submittals
A. Submit manufacturer’s installation specifications
B. Submit two (2) copies of Westile warranty
C. Submit performance testing

1.06 Quality Assurance
A. Water absorption to be 5% nominal
B. Compressive strength to be 5,000 psi at 28 days cure
C. Flexural strength to be 400 pounds
D. Meet or exceed ANSI/SPRI RP-4 2013: Wind Design Standard For Ballasted Single-ply Roofing Systems

1.07 Delivery, Storage and Handling
A. Deliver materials on manufacturer’s unopened stretch wrapped pallet with labels intact and legible.
B. Store materials on raised platforms
C. Properly handle materials to prevent damage
D. Do not exceed the structural capacity of deck if placing Ballast Paver units on the roof.
E. Protect membrane and installed areas of Ballast Paver from damage when transporting pallets of Ballast Paver or other material. Place 3/4” plywood sheets in traffic path and use carts with pneumatic tires.

1.08 Warranty
A. Ballast Paver 10 year limited material warranty
B. Available Ballast Paver 5 or 10 year limited wind uplift warranty

Part 2 - Products

2.01 Manufacturer
5909 Baker Road
Suite 550
Minnetonka, MN 55345

2.02 Materials
A. Westile Ballast Paver

2.03 Related Materials
A. Mechanical clips or approved adhesive
B. Protection mat: Westile Pavemat 600 Protection Mat or an approved equal
C. Metal terminations used to retain or secure Ballast Paver units shall be manufactured by Metal Era or an approved equal
D. Stone ballast used in Westile’s Composite Ballast Paver System shall be approved by the membrane manufacturer. Westile recommends the use of ASTM #3 stone.

Part 3 - Execution

3.01 Preparation of Surface
A. Comply with manufacturer’s instructions for preparation of substrate to receive membrane roofing system. Install roof membrane, flashings and insulation in accordance with manufacturer’s instructions.
B. If required by membrane manufacture or if limited foot traffic is anticipated, install Westile Pavemat 600 Protection Mat or an approved equal.

3.02 Ballast Paver System Designs
A. System Design # 3 (see page 5)
B. System Design # 4 (see page 5)
C. Walkway System (see page 10)
D. Composite System (see page 10)

3.03 Installation of Ballast Paver Systems
A. Must be in accordance with Westile’s 2010 installation guidelines
Ballast Paver System Design # 3
Pavers in a staggered bond with perimeter attachment

NOTES:
1) Maintain 1-1/4" max. distance between the upper shiplap and or the 11-3/4" dimension of the Ballast Paver where they meet the first roofing element.
2) Install Mechanical Clips or a one part urethane adhesive where pavers meet any roof protrusions (H.V.A.C. equip. roof drains, structural members, roof curbs, etc.) and where there are any pavers less than full size. Mechanical Clips or adhesive must also be installed in-between the first two courses of pavers where the 11-3/4" dimension of the pavers meet the roof edge. (see detail )
3) Install Westile PaveMat 600 protection mat or an approved equal at designated areas of foot traffic and where mechanical clips are used. (see detail )
4) Install an approved perimeter attachment around the entire perimeter of the Ballast Paver System. (see details )
5) Pavers may run one direction when they intersect with a headwall (8 ft. or greater).

Choose one of these details for use around the entire perimeter of the Ballast Paver installation

Ballast Paver System Design # 4
Pavers in a staggered bond with perimeter attachment and all Pavers clipped or adhered

NOTES:
1) Maintain 1-1/4" max. distance between the upper shiplap and or the 11-3/4" dimension of the Ballast Paver where they meet the first roofing element.
2) Install Mechanical Clips or a one part urethane adhesive in between all pavers. (see detail )
3) Install Westile PaveMat 600 protection mat or an approved equal protection mat under the entire Ballast Paver installation.
4) Install an approved perimeter attachment around the entire perimeter of the Ballast Paver System. (see details )
5) Pavers may run one direction when they intersect with a headwall (8 ft. or greater).

Choose one of these details for use around the entire perimeter of the Ballast Paver installation
Ballast Paver Details

1. Upper shiplap edge of Ballast Paver at roof edge

2. Upper shiplap edge of Ballast Paver at parapet wall

3. Ballast Paver / termination bar WL600
   By Metal Era or approved equal

4. Ballast Paver / fascia system WL100
   By Metal Era or approved equal

5. Optional non-fastening Ballast Paver /

6. Ballast Paver Details (continued)
Ballast Paver Details

Ballast Paver center course procedures

Westile Ballast Paver views and dimensions
Ballast Paver Details

8

Ballast Paver at expansion joint

9

Ballast Paver at roof protrusions
(includes vents, structural members, drains, & general roof deck protrusions)

10

Ballast Paver at tie-in termination
**Ballast Paver Details**

1. **Cutting Ballast Paver at ridges and valleys**
   - Adhere the cut piece of the ballast paver to the adjacent full size ballast paver by using a one part urethane adhesive. (See detail 11)

2. **Mechanical clip and protection mat**
   - Westile pave mat 600 protection mat or an approved equal
   - Single ply membrane
   - Westile pavermat 600 protection mat or an approved equal
   - Deck insulation

3. **Ballast Paver mechanical clips at side joint and / or adhesive at shiplap**
   - Westile mechanical clip or one part urethane adhesive. (See detail 13)
Ballast Paver Details

Ballast Paver walkway

NOTES:
1. Maintain 1 1/4” max. distance between the upper shiplap and or 11 3/4” dimension of the Ballast Paver where they meet the first roofing element.
2. Install Mechanical Clips or a one part urethane adhesive (see detail 1/2”) in between the first two courses of pavers where they meet the rock ballast and in between the first two courses where the 11 3/4” dimension of the pavers meet the roof edge.
3. Use Westile PaveMat 600 or an approved equal between the pavers and membrane at all areas where Mechanical Clips are used.

Composite application
(perimeter pavers with stone ballast interior)
Ballast Paver Design and Installation Guide

Product Features:

Size: 8 ½" x 16 x 1 ½" nominal (finished surface)

Weight: 13.75 ± 0.5 lbs. per square foot

Compressive Strength: 5,000 psi @ 28 days cure

Density: 125 pcf minimum

Water Absorption: 5% (nominal)

Packaging: Palletized, banded, stretched wrapped, labeled

Pieces per Square: 105 pavers per square

Pieces per Pallet: 200 pavers per pallet

Feature Summary:
- Interlocking design for superior wind resistance
- Dense concrete
- Easiest paver to install
- Four way drainage
- Fire proof and freeze-thaw resistant
- Non-abrasive bearing pads

Approvals & Performance:
- Meets or exceeds the guidelines and criteria for ballasted roof systems established by:
  - Factory Mutual
  - Underwriters Laboratories
  - ICC-ES
  - SPRI Paver Specifications
  - SPRI Wind Design Guide

Warranty:
Westile Ballast Pavers are warranted against material failure for 10 years from the date of installation when installed in accordance with the details and instructions in the Westile Technical Guide. See the actual warranty for full details and limitations.

A Westile Ballast Paver Limited Wind Uplift Warranty is available for purchase in 5 or 10 year periods. Please contact your Westile representative for more details.