

ROOFCAP PAVER[®]

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Buyline 1827

Insulating Ballast And Roof Paver System

Another innovative product from the PDR
(Product Development and Research)
Division of the National Concrete Masonry Association



The Interlocking Roof Paver System That Protects And Insulates

Roofcap Paver® Beats Gravel Ballasting

The Roofcap Paver ballast system replaces old-fashioned gravel ballasting with its inherent lack of uniformity and hazardous failure potential during windstorms. The Roofcap Paver:

- Is manufactured under stringent quality control conditions in three different weight ranges
- Protects and maintains in place loose-laid *single-ply* membranes and inverted membrane systems (PMR) without incurring fatigue effects
- Provides complete protection of the roofing membrane against solar radiation (UV and infrared) and against thermal shock
- Prevents mechanical damage of the roof membrane from traffic, burning embers, and flying objects
- Forms an *incombustible* barrier protecting the entire roof surface
- Eliminates potential liability for damage to adjacent property caused by flying gravel
- Eliminates need to constantly reposition stones scoured by wind and roof overloads due to stone pile-up

Protection from Weather, Solar Heat, Radiation and Fire

Roofcap Paver® Ballast System

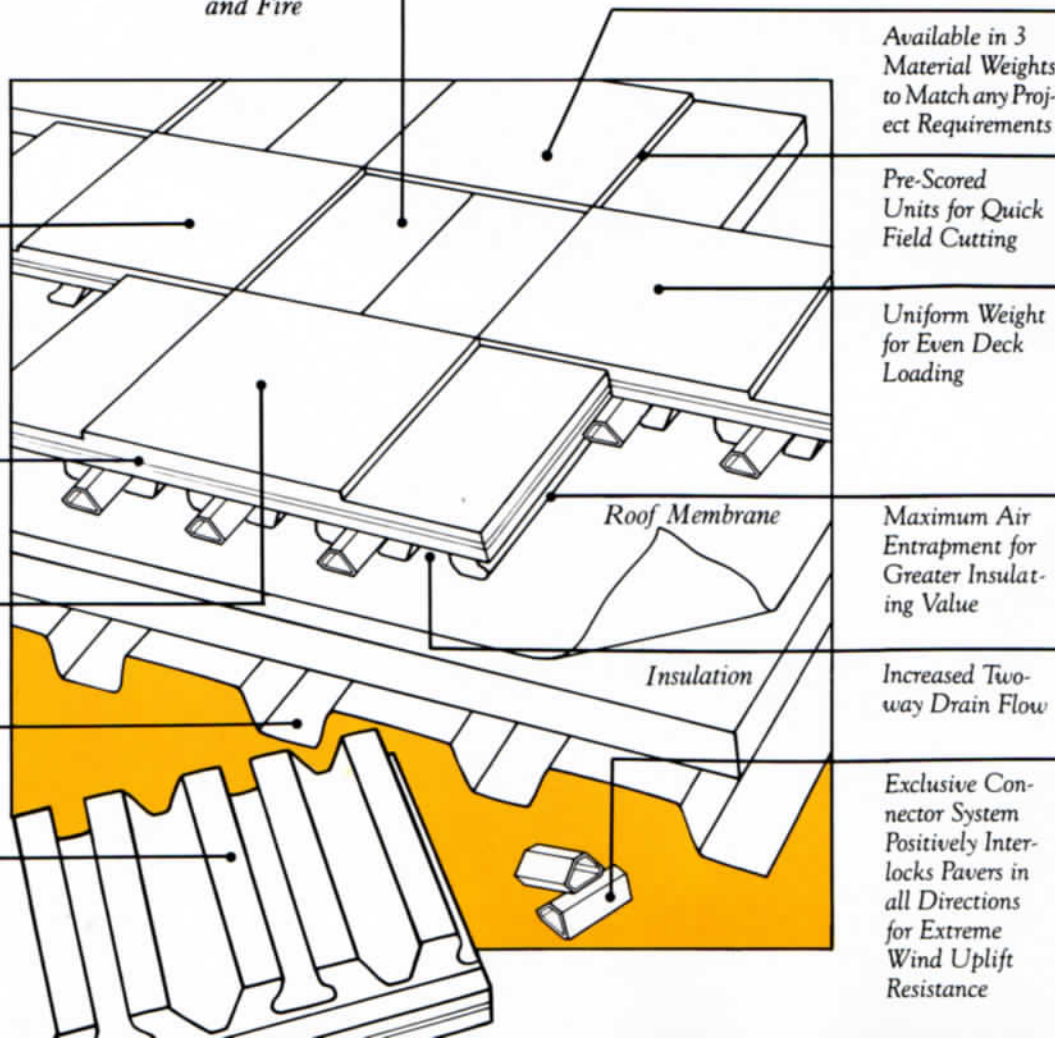
Unique Pat-
terned Surface
Disrupts High
Wind Laminar
Flow for
Reduced
Uplift

Safety Surface
Protects
Membrane from
Roof Traffic

Roofcap Paver
Available in
Colors

Roof Deck
(may be metal
or concrete)

Wide Footprint
Protects
Insulation



Available in 3
Material Weights
to Match any Proj-
ect Requirements

Pre-Scored
Units for Quick
Field Cutting

Uniform Weight
for Even Deck
Loading

Maximum Air
Entrapment for
Greater Insulat-
ing Value

Increased Two-
way Drain Flow

Exclusive Con-
nector System
Positively Inter-
locks Pavers in
all Directions
for Extreme
Wind Uplift
Resistance

Quick Installation

The Roofcap Paver modular design allows installation in straight or staggered patterns with a minimum of cutting while still retaining its multiple interconnection ability. Elimination of gluing or strapping means faster installation and lower cost.

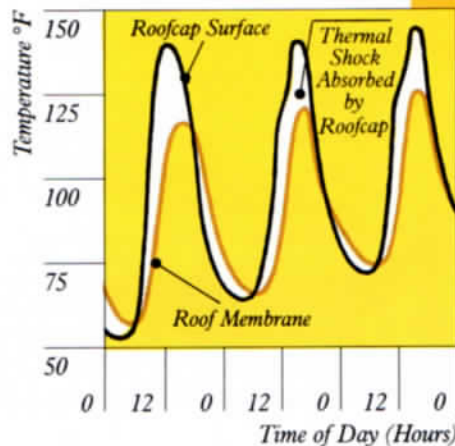
The proprietary interlocking connectors can never corrode and slip in easily, allowing rapid butting of the next row for complete tie-in without complications or expensive edge treatments.

Quick and inexpensive metal edge interlock fits most single-ply fascia systems, thereby eliminating costly and time-consuming perimeter designs.

Protection from High Winds

Using full scale roof elements, the Aerospace Engineering Department of the University of Maryland has subjected the Roofcap Paver ballast system to wind speeds in excess of 120 mph WITHOUT FAILURE. Unique design elements of the system create the following characteristics:

- Anti-uplift surface pattern induces air turbulence and increases positive pressure over the roof. Anti-uplift drainage channels use wind pressure to pull Roofcap down.
- Exclusive interlock connectors give the Roofcap Paver system units complete tie-in in all directions where required for high wind applications.
- The entire system can be interlocked together continuously or at perimeter and corner areas only. Costly and unsightly strapping and gluing are eliminated.



Thermal Shock Protection*

◀
*From test Study conducted by Oak Ridge National Laboratories, Oak Ridge, Tennessee (summer graph).

Higher Insulation, Better Drainage

The unique design of the Roofcap Paver creates an efficient double envelope roof with an entrapped air film barrier that works to stop summer heat gains and winter heat losses.

- The flared "footprint" distributes weight evenly over large areas to prevent shear damage to the insulation and roofing membrane.
- Two-way overflow oversize drainage channels insure rapid discharge of water and minimize the possibility of hydroplaning. This reduces the likelihood of paver displacement, a problem with conventional ballasts under storm/excessive water conditions.
- Roofcap Paver's special draining design lowers the chances of underballast ponding and subsequent roof overload and damage.
- The special wear profile of the Roofcap Paver becomes a safety-grip surface for safe, surefooted traffic, even in rain.

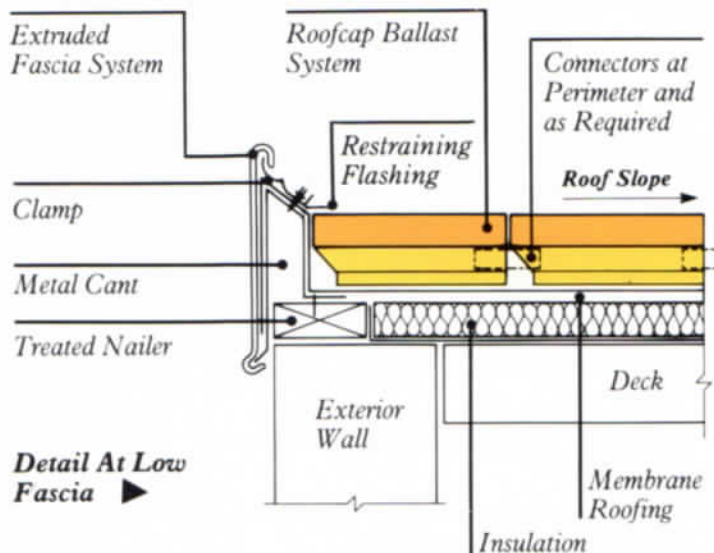
ALLOWABLE ROOF HEIGHTS* FOR ROOFCAP BALLAST PAVERS TYPE LW							EXPOSURE CATEGORY**	
ASSEMBLY TYPE		BASIC WINDSPEED (V _m)*** (mph)						
Roof Deck	Corner Area Interlock	70	80	90	100	110	120	
Concrete	8" O.C.	380.6	225.9	138.8	86.4	59.1	40.2	A City Centers
	16" O.C.	209.3	119	73.2	45.4	29.6	18.9	
	none	150.3	83.4	50.6	32.3	19.5	13.8	
Metal	8" O.C.	154	85.8	52.3	33.3	19.9	14.2	
	16" O.C.	99	54.9	32.7	19	12.9	10.2	
	none	78.9	44.9	26.1	16.1	10.2		
Concrete	8" O.C.	294.2	132.7	65	33.9	18.4	9	B Urban and Suburban
	16" O.C.	117.4	52	25.1	12.2			
	none	41.4	17.9					
Metal	8" O.C.	78.5	34	15.9				
	16" O.C.	38.8	16.2					
	none	16.4						
Concrete	8" O.C.	350	111.3	38.6	14.4			C Open Terrain
	16" O.C.	92.8	27.4	6.9				
	none	50	14					
Metal	8" O.C.	50	14					
	16" O.C.	18.3						
	none							

*Maximum in feet
**Definitions per ANSI A58.1
***For V_m in your building location Re: ANSI A58.1

NOTE: Table for preliminary illustration purposes only. For detailed design procedure with tables covering Type LW, MW & SW Pavers, and different parapet heights and connector densities at roofcorner, perimeter and field, request Roofcap Wind Design Manual.

Roofcap Paver Wind Performance* with Different Roofcorner Connector Densities

◀
*At minimum parapet height of 6" - higher performance with taller parapets.
**Based on wind tunnel testing at the Glenn L. Martin Aerospace Facility, University of Maryland



Roofcap Paver Data Sheet

Nominal dimensions	2.5" x 8" x 16"
Windspoilors	@ 8" o.c.
Footprint area (bearing surface)	not less than 50 sq. in. per sq. ft.
Wind uplift rating (gust)	120 mph for Type LW w/connectors
<p>WARNING: The roof structure on which ballast is to be installed should be capable of supporting the total roof system dead load without decreasing live load allowances. It is recommended that the load capacity of the roof structure be verified by a registered structural engineer prior to installation of ballast.</p>	

Wind Design

The wind uplift performance characteristics of the Roofcap Paver ballast system are dependent upon suitability to particular application and proper design and installation procedures, in strict accordance with manufacturer's recommended instructions and details. Olympic Manufacturing, its licensor, employees and other licensees do not warrant that this product is proper and applicable under all conditions. No liability expressed or implied is assumed by the manufacturer, nor by the designer of the system, due to potential deviations from recommended design and/or installation practice which are beyond the control of the product supplier.

For recommended design and installation procedure, request Roofcap Design and/or Installation Manuals.

PDR reserves the right to change product specifications at any time in the interest of product improvement.

Roof Ballast Guide Specifications

GENERAL: Work under this section includes furnishing and installing prefabricated concrete block roof ballasting system, together with all connectors, perimeter units and other required accessories in accordance with the plans.

MATERIALS: Concrete block ballast shall be the ROOFCAP Paver Unit System manufactured in accordance with the quality control guidelines and specifications established by the National Concrete Masonry Association. Its top surface shall incorporate laminar wind flow breaks spaced at no more than 8" o.c. in any direction. The block ballast system will include positive interlock connectors spaced at ____ o.c. maximum in the areas denoted on the drawings.

The block ballast units shall be designed to provide two-way drainage channels underneath the pavers, with a minimum discharge area of 6.8 in²/l.f. in the main direction.

Bearing surface of the ballast units shall not be less than 50 square inches per square foot.

The ballast system shall provide, under stagnant air conditions, a ballasting pressure on the roofing membrane as follows:

Roofcap Type	Minimum Pressure (psf)	Maximum Pressure (psf)
LW	12	13.5
MW	13.5	16
SW	16	20

The ballast block system materials shall conform to current issues of the following standards and/or specifications:

PAVER UNITS: (ASTM C-145)

	Type LW	Type MW	Type SW
Aggregate Density	ASTM C331 85/95 pcf	ASTM C331/C33 95/115 pcf	ASTM C33 115/145 pcf
Compressive strength (net)	3000 psi	4000 psi	5000 psi
Water Absorption	15 lb/cf	13 lb/cf	10 lb/cf

CONNECTORS: .05 black polyethylene L-P-390c type I, class L
 Ultraviolet resistant
 Shore D hardness 44
 Tensile strength 2200 psi
 Brittleness low temperature -180° F
 Softening temperature +176° F

CERTIFICATION: (Owner) (Architect) shall be responsible for obtaining certification from registered professional engineer as to the adequate capacity of the roof structure to receive the weight of the ballast. Installation shall not proceed until such certification is verified. Obtain certification and submit copies to construction manager for installation approval.

INSTALLATION: Contractor shall exercise extreme caution during ballast transport up to the roof and distribution thereon. Transport only quantities which can be distributed immediately. Piling up shall not be permitted. Stop all conveying machines as soon as ballast starts to accumulate. Do not re-start until all excess units have been distributed to weight specified.

Follow roofing membrane manufacturer recommendations for protection of exposed membrane during ballast installation.

Install perimeter wind breaks, connectors and ballast units in conformance with the drawings, with the installation instructions of the ballast manufacturer, and with roofing membrane manufacturer requirements and specifications.

CLEAN-UP: Remove all conveyors and equipment, clean up all debris and surplus materials and remove from premises. Roof surface shall be delivered in broom-clean condition.

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ROOFCAP PAVER®

U.S. patents 4,655,018 - 4,776,144
 and other patents pending

is another product developed by the PDR
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 Masonry Association

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