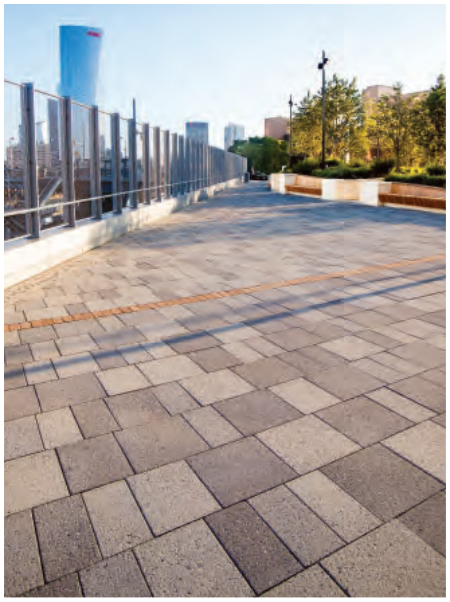
ROOF AND PLAZA PAVERS

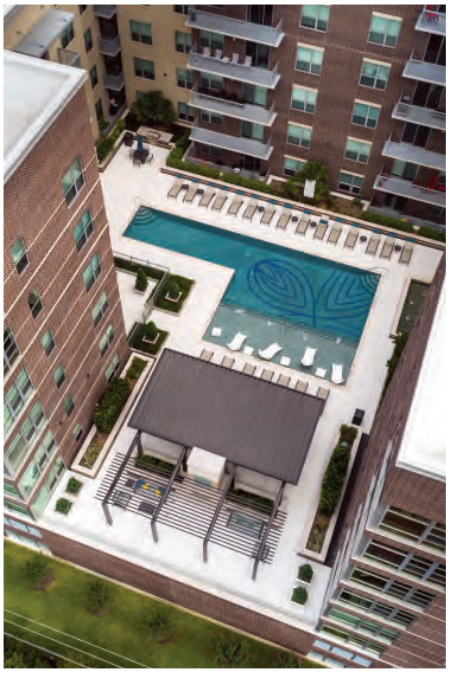
ROOF & PLAZA PREST® PAVERS

The concept of using concrete pavers as roof ballast, plaza deck and terrace pavers has created new opportunities for otherwise lost space. Roofs and decks can be functional, as well as attractive. Hanover® Prest® Pavers provide durability, protection and performance for the roof system from harsh weather conditions.

Hanover® offers a solution for all roofing/waterproofing needs — from Standard Walkway and Roof Ballast, to Architectural Plazas and Green Roofs. Pavers with reflectance and emittance values are available to help earn Sustainable Sites Credits and achieve LEED building certification. Hanover® also offers a paver system which provides superior wind uplift resistance. Roof ballast, functional design, color and durability all come together with Hanover® roof and plaza pavers.



HANOVER® PAVERS ARE AVAILABLE AS A SINGLE SOURCE COMPONENT FROM SEVERAL WATERPROOFING MANUFACTURERS.



Please refer to the **ARCHITECTURAL CONCRETE PREST® PAVERS** brochure for more information.

The application of an elevated paver system provides the designer with new possibilities and advantages. Hanover® Pavers are offered in both a standard color range and custom aggregate blends. Striping, banding and paving patterns are just a few of the design capabilities made possible by mixing various paver colors, sizes and finishes. A

textured Tudor® finish provides slip resistant properties. Safer than gravel ballast, Hanover® pavers make roofs and plazas safe for pedestrians and simplify repairs.

By elevating the pavers, water is channeled away from the surface. Roof and Plaza Pavers allow easy access to the roof and waterproofing system for making repairs or standard maintenance procedures. Whether your project is a roof, deck, plaza or terrace, Hanover® Roof Pavers are serviceable, functional and attractive.

HANOVER® PAVERS ARE AN INTEGRAL PART OF ENERGY-EFFICIENT GREEN ROOF DESIGNS.

ROOF AND PLAZA PAVERS

SIZES:	Range from a nominal 12" x 12" to a nominal 24" x 48"
THICKNESS:	2" (Other thicknesses available.)
WEIGHT:	25 lbs/sf (Other thicknesses result in different weights.)
FINISH:	Tudor® for aesthetic and visual applications
COLORS:	8 standard colors - Quarry Red, Charcoal, Natural, Red 15, Tan, Brown, Cream, Limestone Gray Custom color and aggregate blending are available on special order when quantities permit.

Refer to pages 8 and 9 for paver colors.

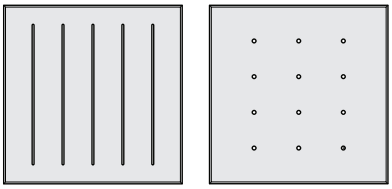
GREEN ROOFS

The popularity and value of energy-efficient Green Roofs is increasing. Working in combination with green roof assemblies, Hanover® Pavers provide environmental benefits and aesthetically appealing rooftops or plaza gardens. A range of pavers with reflectance and emittance values help to earn Sustainable Sites Credits and achieve LEED building certification.

ROCKCURB® FOR ROOF

Hanover® RockCurb® is an integral part of green building projects, helping to earn SS Credits and achieve LEED points. Working with green roof assemblies to provide environmental benefits and aesthetically appealing rooftop gardens, RockCurb® can be used to separate green areas from hardscaped areas.

DRAINAGE PAVERS



Hanover® Drainage Pavers, shown to the left, are available upon request. They can be manufactured with holes or slots depending on the project requirements.

STANDARD PAVERS FOR WALKWAY & BALLAST

When the project requires an economical roof ballast paver, Hanover® offers a standard paver, stocked in a Natural color and a non-slip Diamond finish. A wide range of sizes are available at a 1 13/16" thickness and a weight of 23 lbs/sf. Unlike river gravel which has been known to be hazardous, pavers used as ballast or walkways provide a durable, safe method of protecting the roof system.

Hanover® Roof Ballast Pavers reduce roof life cycle costs (vs. stone ballast) with lower installation and maintenance expenses. By creating a limited pedestrian walkway, Roof Ballast

STANDARD AND LIGHTWEIGHT BALLAST PAVER FINISH

FINISH: Diamond

COLOR: Natural

Diamond is a ballast paver finish. It is not recommended for aesthetic projects.

Pavers can be ordered in color when quantities permit.

PLEASE NOTE: It is not recommended that diamond or stipple finish Prest® Pavers be used on applications in which aesthetics are of importance. (Surface blemishes are considered a normal characteristic with this product and should be expected.)

Natural color Prest® Pavers have a tendency to vary in color within any given shipment. It may vary in shade from gray/buff to light gray, and even to a darker gray. This variance should be expected and considered normal for the Natural color Prest® Pavers.

Pavers make roof inspections safer and easier compared to stone ballast. When installed to completely cover the protected membrane, they shield the membrane from punctures, cuts and ultraviolet ray damage.

PAVERS FOR LIGHTWEIGHT BALLAST

When the roof design will not accommodate the load of a standard paver, Hanover® offers Pavers for Lightweight Ballast, weighing 15 lbs/sf. Sized at 11 3/4" x 23 1/2" x 1 1/4" and 23 1/2" x 23 1/2" x 1 1/4", Lightweight Ballast Pavers are manufactured in a Natural color and Diamond finish. These may be installed on a protected membrane system for ballasting and limited pedestrian use. However, Hanover® Pavers for Lightweight Ballast are not normally recommended for pedestal applications, particularly if pedestrian access is anticipated.

PEDESTAL® PAVER

PLEASE NOTE:
Pedestal® Pavers are elevated by an integrated foot. Additional pedestals are not required.

PEDESTAL® PAVERS

For use as an alternative to the polyethylene pedestal systems, Hanover® Pedestal® Pavers are produced with an integrated concrete foot. The foot elevates the paver providing 1/2" elevation clearance for water drainage. The need for polyethylene pedestals is eliminated. The waterproofing assembly is protected from weather and UV light and pedestrian access is permitted.

With a weight of 22 lbs/sf, Pedestal® Pavers are available in economical ballast finishes. When aesthetics are important, the Tudor® finish should be specified.

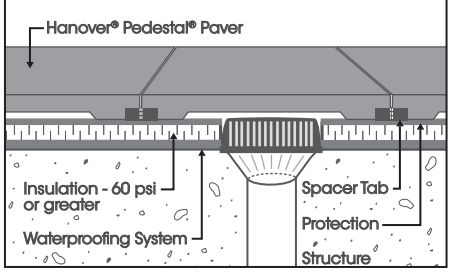
HANOVER® SPACER TABS

In order to keep joints consistent when installing Hanover® Pedestal® Pavers, Spacer Tabs are available. Not visible from the surface after installation is complete, these flexible rubber-like spacers are placed between each paver to maintain an even 1/8" joint and provide water access to below surface drainage. Spacer Tabs are available in an "X" or "T" shape to accomodate various paving designs.

1/8" SPACER TABS

Overall width : 2 3/16"

PEDESTAL® PAVER DETAIL



HANOVER® PEDESTAL® PAVERS	
SIZE:	23 1/2" x 23 1/2" x 2 1/4"
WEIGHT:	22 lbs/sf
ELEVATION CLEARANCE:	1/2"
FINISH:	Tudor® for aesthetic and visual applications; Diamond for walkway and ballast applications
COLORS:	8 standard colors - Quarry Red, Charcoal, Natural, Red 15, Tan, Brown, Cream, Limestone Gray Custom color and aggregate blending are available on special order when quantities permit.

Refer to pages 8 and 9 for paver colors.

HANOVER® PEDESTAL SYSTEMS

Effectively draining water from a roof or plaza is a critical issue for every building. By using an elevated paver system, water is channeled away from the roof surface, reclaiming lost space. Hanover® has developed several pedestal systems to achieve level plaza deck surfaces – even those with unusual slope-to-drain configurations. Hanover® Pedestal Systems are created to work together to accommodate a variety of roof slopes.

- High-Tab® Pedestal
- Flexible Leveling Shims
- EPDM Pedestals and Shims
- Elevator® Pedestal System
- Compensator® Leveling System

Please Note: 12" x 12" and PlankStone® Prest® Pavers are not recommended for pedestal set applications due to the size proportionate to the pedesal base. Stabilization of the system is difficult.

HIGH-TAB® PEDESTAL

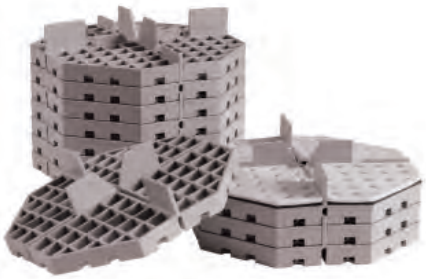
7" across flats
5/8" thick
1/8" spacers

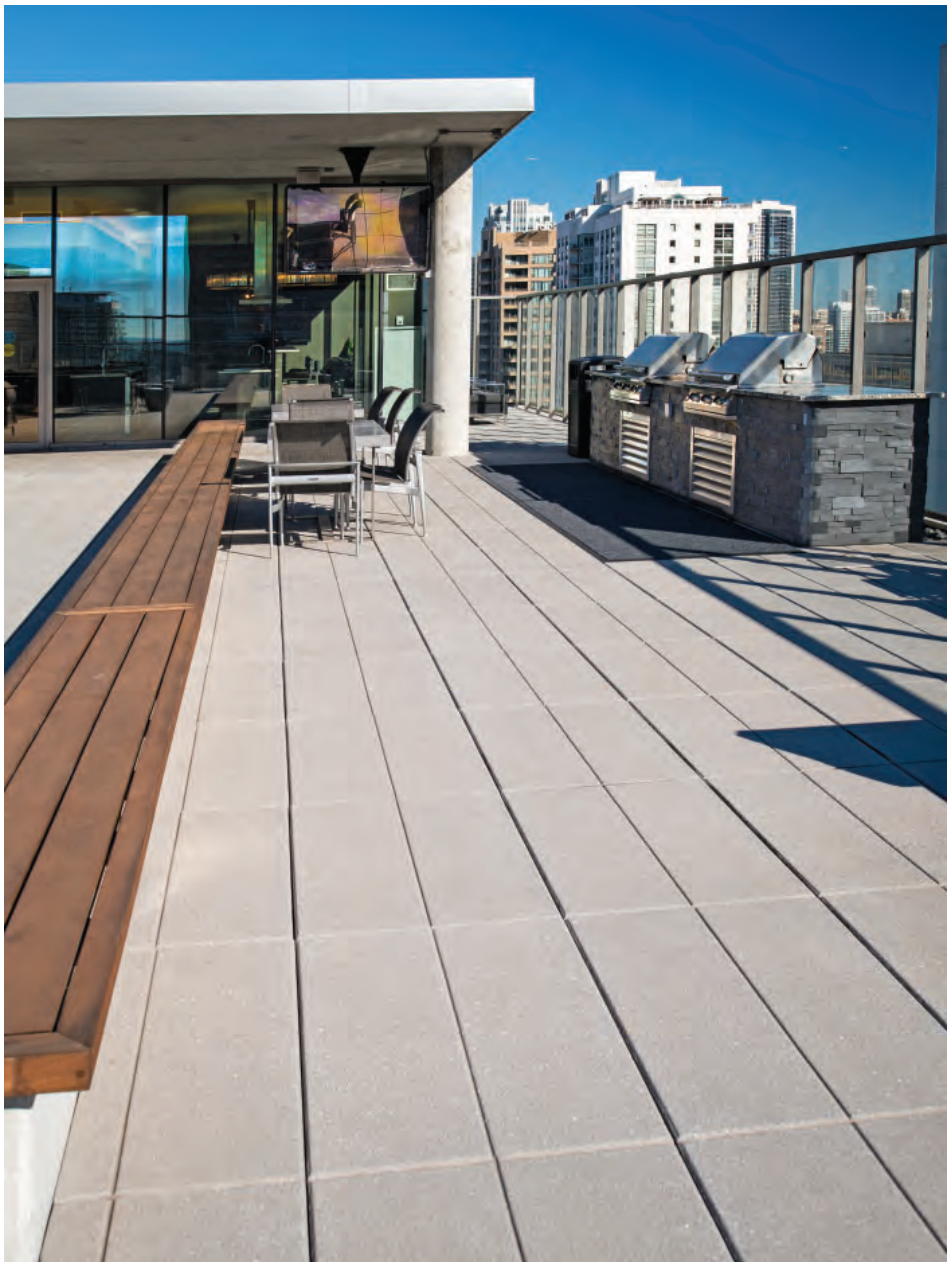
U.S. Patent 7,386,966 B1

HIGH-TAB® PEDESTAL

When leveling shims are needed, Hanover's High-Tab® Pedestal provides a spacer tab with increased height, greatly improving installations. With other pedestals, when one or more shims are used on top of pedestals, the height of the spacer tab is lessened, allowing pavers to shift from position or alignment. The added spacer tab height of Hanover's High-Tab® will secure each paver in its proper location.

The High-Tab® Pedestal can also be stacked without losing the performance of the higher spacer tab. High-Tabs have been designed to be turned and engaged – one into the other – in such a way that the integrity of the added height is still available from the top pedestal.





1/8" SPACER TABS

Hanover® can provide rubber-like Spacer Tabs for joint consistency. Not visible from the surface after installation is complete, spacers are placed between pavers to maintain 1/8" joints. See page 29 for more information.

HANOVER® EPDM PEDESTAL AND LEVELING SHIMS

EPDM PEDESTAL & SHIMS

Hanover's EPDM Rubber Pedestal is a flexible paver support pedestal, allowing the pavers to follow the contour of the roof. Suitable for both Architectural and Ballast applications where water drainage is required, this 3/8" fixed height pedestal incorporates 1/8" spacer tabs and leveling shims to make installation easy. This pedestal is not stackable and must be considered only for low elevation support requirements.

Final adjustments can be made with EPDM Leveling Shims. Available in two thicknesses, shims prevent paver movement and provide a more solid feel.

FLEXIBLE LEVELING SHIMS

Final leveling adjustments can be made with Hanover's flexible Leveling Shims. The shims are rubber-like, preventing paver movement and providing a more solid feel. They will not slide as they eliminate "rigid on rigid" placement. Two thicknesses are available. Leveling Shims may be separated into halves or quarters for individual paver adjustments. They can be used with Hanover's High-Tab® Pedestal or Elevator® Pedestal System.

FLEXIBLE LEVELING SHIMS

7" across flats
1/8" thick : white
1/16" thick : black

ELEVATOR® PEDESTAL SYSTEM

The Elevator® Pedestal System is an adjustable height pedestal system designed for elevated paver applications. Consisting of a Base, Top Plate, Coupler, StayBar®, and EdgeFinder™, the Elevator® System can accommodate paver heights above 2" up to 24". Components can be interchanged to achieve the desired height with precise adjustments being made with a simple turn.

ELEVATOR® PEDESTAL SYSTEM

Patent Pending

TOP PLATE

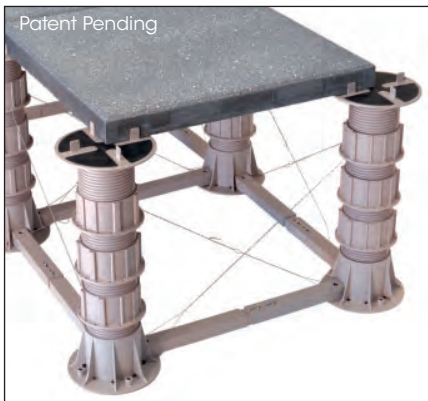
Unlike any other pedestal, the Top Plate is equipped with pads that will quiet and secure the paver to the pedestal. The Top Plate incorporates spacer tabs. low tab or high tab, which set a uniform 1/8" space between pavers and aid with alignment. Four tab, three and no tab designs are available to accommodate various installation designs.

COUPLER

As part of the Elevator® Pedestal System, Hanover® provides a Coupler to increase paver height by 2 1/2" - 4". Hanover's Coupler includes a circular flange with eyelets for ease of tie bracing.

Please refer to the **ARCHITECTURAL CONCRETE PREST® PAVERS** brochure for more information.

Patent Pending



ELEVATOR® CROSS BRACING WITH STAYBAR®

PLEASE NOTE: StayBar® is designed for use with nominal 24" x 24" pavers

See Caution Note on page 33.

STAYBAR®

Bracing is required for elevations of 16" to 24". Hanover® offers the StayBar® which fits firmly between Elevator® bases to prevent movement of the assembly. StayBar® provides adequate stabilization when used with wire cross ties. Request installation guidelines.

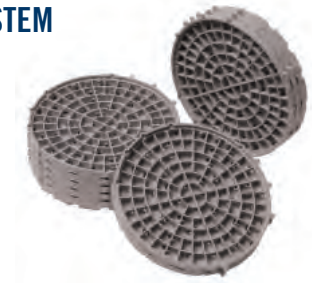
EDGEFINDER™

With one flat edge designed to act as an edge restraint, the EdgeFinder™ snaps securely onto the no tab Elevator® Top Plate when pavers must be terminated. Request installation guidelines.

COMPENSATOR® LEVELING SYSTEM

Recognizing sloped installations as a challenge, the Hanover® Compensator® Paver Leveling System was designed to "compensate" for the roof slope. The Compensator® is a specially designed tapered circular base made of high density plastic making them impervious to water.

COMPENSATOR® LEVELING SYSTEM



Their unique twist-to-adjust design allows for easy adjustment.

When used under Hanover's support pedestals, the Compensator® will reverse the roof taper and create a level surface for paver installations.

ELEVATOR® CAUTION: It is critical that Top units and Couplers have a minimum insertion of three threads of the unit to completely secure the pedestal and ensure stability. Additional couplers can be added for elevations up to 24". Bracing is recommended for taller elevations of 16" to 24" maximum.

Do not over-extend threaded pieces. Settling may occur when pedestals are placed on-grade. Decks are required to have an edge restraint on all sides.

Elevator® Pedestals are for use with pedestrian traffic only; do not use with motorized, wheeled or equipment traffic. Elevator® Pedestals have a maximum 1000 lb/pedestal load baring capacity with a Factor of Safety of 2 (FS:2), exceeding most requirements.

StayBars are required for applications 16" and above. The ratio of StayBars to elevators is approximately 2 StayBars to every Elevator®. Quantities of StayBars may be more or less depending on the project. Make sure you have enough StayBars to secure all connections.

All specific configurations of cross tying should be reviewed with a Hanover® Representative.

Hanover's Elevator® Pedestal System meets:
- LA City Building Codes for Seismic Stability (ASTM D-1929 and D-635 for plastic materials)
- Flame Spread Requirements (CC1)

Research Report: RR 25823 (CSI #10270)

Using the Elevator®, High-Tab® or Standard Pedestal in conjunction with the Compensator® provides horizontal stability and joint alignment. Leveling Shims can be used for additional adjustments.

The system will accommodate a variety of roof slopes. A roof slope of 1/8" will be leveled by using one Compensator®. By using two or more and aligning the units in the correct manner, roof slopes from 5/32" to 1/2" can also be leveled.

HIGH WIND SOLUTIONS

VENTLOC® INTERLOCKING LIGHTWEIGHT ROOF BALLAST

Ventloc® provides superior wind uplift resistance at wind speeds up to 130 mph. Designed with tongue and groove sides and a patented venting edge that enables the rapid transfer of over paver to under paver pressures (known as pressure equalization*), this unique combination results in a significant enhancement of lightweight paver system wind uplift resistance. The patented interlocking tongue and groove design creates a monolithic paver surface in which an individual paver is no longer the weakest link.

Ventloc's high compressive strength provides a solid surface to withstand severe weather conditions, UV attack and physical abuse. A solid roof surface is maintained to provide the ultimate protection from extreme weather conditions.

VENTLOC®

Shown in Natural with Natural Finish

U.S. Patent #5,887,397.Other patents pending.

Sized at 11 3/4" x 17 5/8" x 2", Ventloc® is stocked in a Natural color with a Natural finish. Ventloc® is available in all of Hanover's standard colors as well as a Tudor® finish. Additional colors, including white, are available when quantities permit.

Two weights are stocked – Standard and Heavy weight. The standard weight Ventloc® is 15-17 lbs/sf and the heavyweight Ventloc® is 18-20 lbs/sf.

- Vents enable rapid transfer of air pressures
- Patented tongue and groove design
- Limited pedestrian use
- Multi-directional under surface water drainage
- Stocked in Natural color with a Natural finish
- Stocked in two weights with custom weight options available
- Uniform weight distribution

FOR MORE DETAILED INFORMATION, INSTALLATION GUIDELINES AND TEST RESULTS, REQUEST HANOVER'S VENTLOC® BROCHURE OR VISIT VENTLOC.HANOVERPAVERS.COM

GUARDIAN® PAVER SYSTEM

High wind and special site conditions require an outstanding paver system. Severe site conditions and high winds have often ruled out the use of pavers on pedestals. Hanover's Guardian® Paver System was developed especially for the most severe conditions which require an elevated roof paver pedestal system. This system creates a monolithic paver surface providing high wind uplift resistance. The Guardian® Paver System consists of a shaped paver and a unique three-piece pedestal designed to "lock down" the entire roof surface and prevent horizontal and vertical movement of the roof paver.

GUARDIAN® PAVER SYSTEM

U.S. Patent #6,604,330 • Canadian Patent 2,409,312

In order to create the monolithic system, the Guardian® Pedestal is combined with a specially shaped paver. The Guardian® Paver is available in several standard sizes and a variety of colors and textures. Hanover® also offers a scored Guardian®. The Guardian® Paver meets or exceeds all ASTM requirements for concrete unit paving.

HANOVER'S GUARDIAN® SYSTEM IS SPECIALLY DESIGNED FOR HIGH WIND UPLIFT RESISTANCE

UNIT SIZE	THICKNESS
17 5/8" x 35 3/8" with score	2", 3"
23 1/2" x 23 1/2"	2", 3"
23 1/2" x 35 3/8" with or without score	2", 3"
29 3/4" x 29 3/4"	2"

The standard color for the assembly is black which can be used for the most extreme UV conditions. The top plate, pedestal and bolt are also available in Hanover's standard Prest® Paver colors, as well as Glacier White. Glacier White has the highest relfective values. Custom colors are available when quantities permit. Hanover® can also provide a Granite Guardian® Paver.

GUARDIAN® PEDESTAL COLORS


Tan


Cream


Natural


Limestone Gray


Charcoal


Brown


Quarry Red


Red 15

- Specially designed for wind uplift resistance
- Paver movement is prevented creating a monolithic roof paver surface
- Compatible with other Hanover® Pedestals
- Available in a variety of colors
- Based on Florida's Building Code TAS 108 test, Guardian® will provide a wind uplift resistance of -81.1 psf.