Aspire

Installation Guidelines & Instructions

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Aspire

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Installation Guidelines for Aspire Pavers

Installation Guidelines

Aspire Pavers should be installed in accordance with the local building codes and the installation guidelines included below. Aspire accepts no liability or responsibility for the improper installation of this product. Aspire Pavers may not be suitable for every application and it is the sole responsibility of the installer to be sure that Aspire Pavers are a fit for the intended use. Since all installations are unique, it is also the installer's responsibility to determine specific requirements for each application. Aspire recommends that all applications be reviewed by a licensed architect, engineer or local building official prior to installation.

Recommended Tools

All Applications

- Miter Saw with low tooth count wood ripping blade
- Jig Saw with low tooth count wood ripping blade
- Safety Glasses
- Ear Plugs
- Caulk Gun
- Lexel Sealant, TiteBond ProVantage Landscape Adhesive, or comparable
- Blower and/or broom
- Marker (Sharpie or wax pen)
- Utility Knife
- Hand Dolly

Additional Tools for In-Ground and Permeable Applications

- Shovel
- Landscape Edging
- Landscape Spikes
- Hammer
- Two (2) 3/4" - 1.0" PVC Pipe
- 4' Level
- Hand or Vibratory Plate
- Compactor

STOP! Read this section before you start!

For most current care and cleaning, technical information and more, visit aspirepavers.com.

- **Do not install where standing, above-ground water conditions are anticipated.** Proper sub base grading and other storm-water management designs should prevent the appearance of water at grade-level. In areas where small pooling occurs, adhesive can be used to affix the pavers to the grids to increase installation integrity.
- **Do not install where high volume vehicle traffic is expected (e.g. crosswalk)**. Aspire Standard Pavers are designed for low volume, low speed vehicle traffic (e.g. driveways, parking lots).
- **Do not install for use as a fire pit**. Grills and fire bowls may be used when placed over a fire mat to prevent any damage from burning embers.
- Failure to install Aspire Pavers in accordance with applicable building codes and this Installation Guide may lead to personal injury, affect product performance and void the product warranty.

Please call Aspire by Brava Customer Service at (844) 290-4196 visit aspirepavers.com

Extreme Heat Warning

Be aware of excessive heat on the surface of Aspire products from external sources, such as but not limited to, fire or reflection of sunlight from energy-efficient window products. Low-emissivity (Low-E) glass can potentially harm Aspire products. Low-E glass is designed to prevent passive heat gain within a structure and can cause unusual heat build-up on exterior surfaces. This extreme elevation of surface temperatures, which exceeds that of normal exposure, can possibly cause Aspire products to melt, sag, warp, discolor, increase expansion/contraction, and accelerate weathering.

Current or potential Aspire customers that have concerns about possible damage by Low-E glass should contact the manufacturer of the product which contains Low-E glass for a solution to reduce or eliminate the effects of reflected sunlight.

Excessive Construction Debris

It is important during construction, the Paver surface stay clear from excessive build-up of dirt, sand, and dust from tile, concrete, landscape blocks, or any other masonry products. If these materials are not removed immediately, the Paver surface will become difficult to clean and can potentially damage the Paver's surface finish.

Do not use Aspire Pavers as a work surface.

If a build-up does occur please refer to the Care and Cleaning section in Aspire's installation guide or website, aspirepavers.com.

Expansion and Contraction

Aspire Pavers will expand and contract with temperature change (similar to other composite materials). Below is a table with measures to account for this expansion.

APPLICATION	PAVERS ONLY (Installed on Grids)	DRAINAGE MAT (EnkaDrain 3801)
FLAT ROOF	• Leave 1" gap between all damageable protrusions • Leave 1/2" gap between rigid protrusions	• Leave 1/2" gap between walls and rigid penetrations
LANDSCAPE	• Leave 1" gap between all damageable protrusions • Place 4" concrete ribbon between pavers and asphalt	**N/A**
RESURFACE	• Leave 1/2" gap between walls and rigid protrusions	**N/A**

Care and Cleaning

Storage & Handling

- Store Aspire Paver products on a flat and level surface.
- Units of Aspire Pavers are shipped from the manufacturer in a protective cover. Replace the cover over any remaining product if it is removed. If the covering is no longer available, take care to keep the product free from dirt and debris.
- If stored outdoors, the product must be covered with non-translucent material.

Care & Maintenance

- Aspire Pavers require virtually no maintenance other than occasional replenishment of joint sand and any necessary clean-up from spills or periodic maintenance cleanings as desired.
- Most surface spills and stains can be cleaned using household cleaners and warm water.
- Chemical spills (e.g. petroleum, paint) should be cleaned as soon as possible with an appropriate industrial cleaner and rinsed thoroughly with water. Chemical spills or stains left untreated over long periods of time may degrade the surface finish and integrity of the product and are not covered under warranty.
- Clean using a biodegradable cleaner and garden hose. Pressure washing is not recommended as it can damage the surface of the pavers.
- Always check the compatibility of cleaning products with plastics and rubber prior to using on Aspire Pavers.

1

DESIGN, PATTERN & COLOR CHOICE

Calculate Square-Footage:

Measure the dimensions of the area to be resurfaced and calculate the total square footage. Be sure to add extra to the measured square footage to allow for scrap and to have a few extras on hand in case of future damage.

Calculate Amount of Aspire Paver Product Required:

A full grid of Aspire Pavers includes a 16.0" x 16.0" grid filled with pavers (4 to 16 pavers depending on their size). Each grid covers 1.78 square feet. To calculate how many grids are needed, divide the total square footage of the project by 1.78.

MEASUREMENTS length x width = sq. ft.	REQUIRED NUMBER OF GRIDS		
	SINGLE COLOR BLEND	TWO COLOR BLEND	THREE COLOR BLEND
50 sq. ft.	29 grids	30 (15 of each color)	30 (10 of each color)
100 sq. ft.	57 grids	58 (29 of each color)	57 (19 of each color)
250 sq. ft.	141 grids	142 (71 of each color)	141 (47 of each color)
500 sq. ft.	282 grids	282 (141 of each color)	282 (94 of each color)

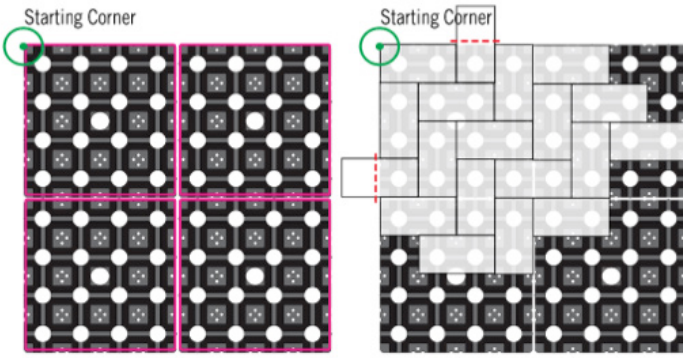
Pick Colors:

Aspire Pavers come in a variety of colors that can be used by themselves or combined to create unique blends.

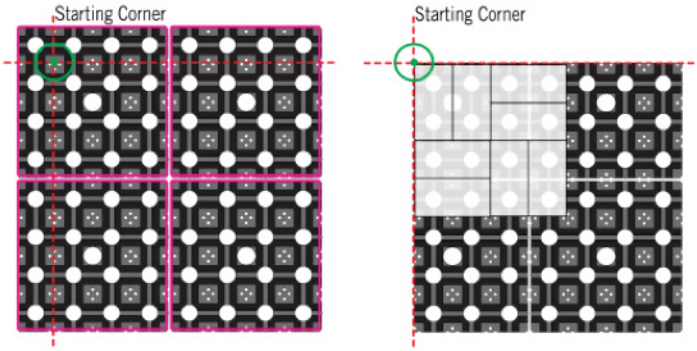
NOTE:
Aspire Pavers allow for any shape installation, including straight and curved edges.

IMPORTANT:
At least one paver must connect two grids in each direction.

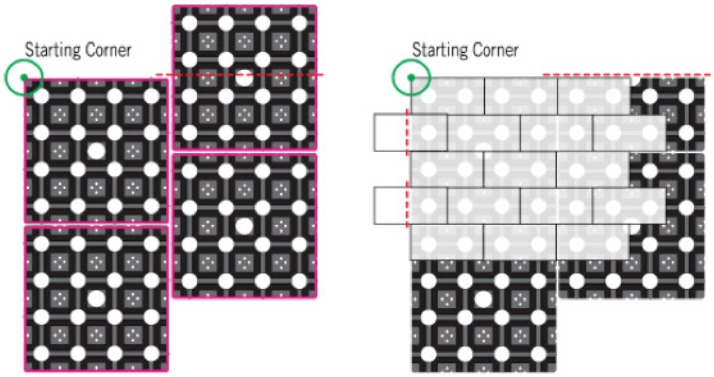
Herringbone



Basketweave



Running Bond



Choose Pattern:

Aspire Pavers can be installed in a multitude of different patterns and combinations. Designs can include small and large repeating patterns. Some example patterns are provided below:

At least one paver must connect two grids in each direction. The herringbone pattern does this without needing to specially orientate the grids.

Here is how the grids must be orientated to assure overlap in all directions for other patterns:

Herringbone:

This is the most popular and easiest to install pattern. Pavers will interlock grids in both directions.

- Lay the installation grids as illustrated at left.
- Start laying pavers at the starting corner.

Basketweave:

This is the simplest installation method for a Basketweave pattern, but it will require extra installation grids.

- The starting paver must be laid 4" down and 4" over from the top left corner of the grid. This will shift the pattern over and assure at least one paver will connect two grids in both directions.
- The leftover grid can either be trimmed off, or a 4" border can used to fill in the extra space.

Running Bond:

This pattern will require the staggering of grids to assure the pavers will connect them in both directions.

- The starting paver can be laid in the top left corner, but the next column of grids must be staggered halfway down the starting row. Every other column will need one half grid at the top.
- Each half of the cut grid can be used.

All Applications

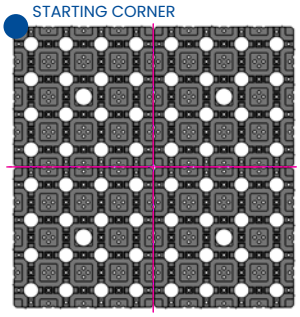
8x8, 4x8, and 4x4 Paver Patterns

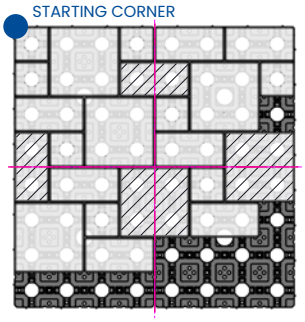
IMPORTANT:
At least one paver must connect two grids in each direction.

Choose Pattern:

Aspire Pavers can be installed in a multitude of different patterns and combinations. Designs can include small and large repeating patterns. Some example patterns are provided below:

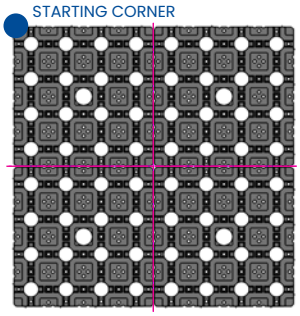
At least one paver must connect two grids in each direction.

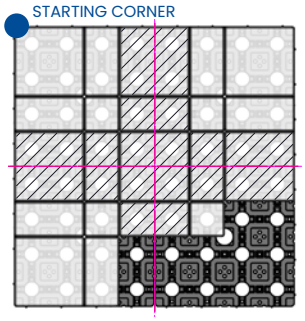




Plain Weave:

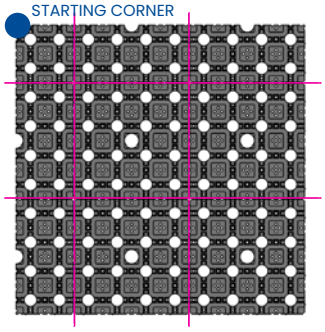
- 8 x 8 - 57.1%
- 4 x 8 - 28.6%
- 4 x 4 - 14.3%
- Lay the installation grids as illustrated at left.
- Start laying pavers at the starting corner.
- Compatible with 4" and 8" soldier course borders.

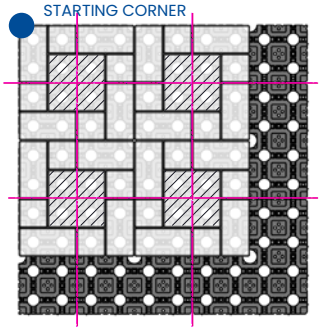




Block Lattice:

- 8 x 8 - 44.4%
- 4 x 8 - 44.4%
- 4 x 4 - 11.1%
- Lay the installation grids as illustrated at left.
- Start laying pavers at the starting corner.
- Perimeter 8" x 8" pavers can be replaced with 4" x 8" pavers to create an 8" soldier course border.





Soldiered:

- 8 x 8 - 25%
- 4 x 8 - 50%
- 4 x 4 - 25%
- Trim Grids as illustrated at left.
- All parts of quarter Grids and half Grids can be used.
- Lay the installation grids as illustrated at left.
- Start laying pavers at the starting corner.
- Adding 4" or 8" soldier course would eliminate the need to cut grids.

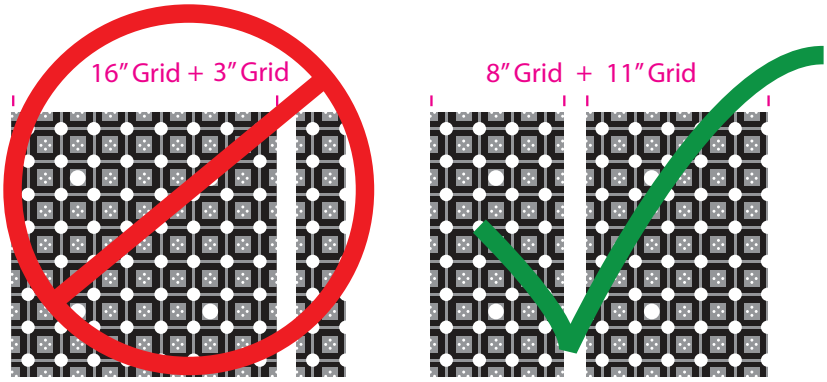
2

Laying Aspire Pavers

- Choose your starting point based on the project dimensions and desired look, keeping in mind any cutting that may need to happen.
- Begin by laying a handful of Aspire's patented installation grids in the arrangement that matches your pattern to ensure pavers overlap grids in both directions.
- To increase installation speed, order extra installation grids to get started.
- Bring over grids full of pavers, dump them next to where they will be placed into the grid, and place the empty grids into place.
- If mixing colors, bring over the ratio of colors being used and dump them in front of the person laying pavers. For example, for a pattern using 40% Boardwalk, 40% Olive, and 20% Waterwheel. The carrier would bring over 2 grids of Boardwalk, 2 grids of Olive, and 1 grid of Waterwheel each time.
- Begin laying pavers in the desired pattern; ensuring pavers are overlapping grids in both directions.
- When the edge is reached, grids can be cut to fit using a jigsaw or miter saw, and a low tooth count wood ripping blade.
- Continue laying pavers until all full pavers (i.e. not cut or trimmed) are installed.
- If the perimeter grid is less than 4", cut 4" or 8" off of the interior adjacent grid to increase the size of the perimeter grid. See example below.

NOTE:
Mix multiple pallets of the same color within an installation to disperse any potential slight variations in shade.

One example of cutting grids for optimal layout



REMINDER:
Installation grids must be orientated to allow the pattern of pavers to interlock grids in both directions.

3

Cutting Individual Grids and Pavers

- Pavers can be cut to any shape using a jigsaw or miter saw, and a low tooth count wood ripping blade.
- If using a miter saw, it works best to place the paver on a grid while cutting it. This allows the person cutting the product to both have more support holding the paver and keeps their fingers farther away from the blade. Short, quick motions with a miter saw also work better. Slow, continuous cuts may cause binding and warping of the blade.
- For pavers cut to dimensions smaller than half a paver, adhere the paver to the grid using a recommended adhesive.
- Use the recommended cutting equipment (see page 2).

IMPORTANT:
Always wear safety glasses and ear plugs when trimming pavers or grids. Obey all safety and operational instructions that came with the cutting equipment.

Flat Roof

Aspire Resurfacing or Standard Pavers Only

IMPORTANT:

Aspire Pavers are a luxurious, low-maintenance covering that installs over an existing or new flat roof. Aspire Pavers are not a structural replacement for flat roof surfaces, and are not suited for all flat roof applications. Please consider wind-uplift and fire rating guidelines, along with the weight capacity of the roof when designing a project. Always consult your Aspire Representative for the recommended rooftop adhesion guidelines for your specific project.

Aspire Pavers are designed to be a flat roof covering installed over a waterproofed, structural flat roof surface. Aspire Pavers are NOT a structural replacement for flat roof surfaces, and therefore, should NEVER be used as the structural element of the roof, as a ballast system, or in pedestal applications. Prior to installing, be sure to verify that the flat roof can support the addition of Aspire Pavers.

Sub-Structure Requirements

- The roof structure must meet all required codes.
- The system is designed for installation over a "low-sloped" roof (between $^1/_8$" per foot and $^1/_2$" slope per foot).
- The rooftop surface must have adequate drainage to meet local codes.
- The surface must be free from substantial undulations or "waves".
- Door and other thresholds must be able to accommodate the minimum added height.

	PAVERS ONLY (Installed on Grids)	DRAINAGE MAT	COMBINED HEIGHT (Pavers & Drainage Mat)
RESURFACING PAVERS	1.75"	0.25"	2"
STANDARD PAVERS	2.38"	0.25"	2.63"

Importance of Sheet Drain

A drainage mat is recommended for flat roof applications over waterproofing membranes. It serves to both protect the membrane from abrasion and allows a pathway for water to escape to the drains. Aspire Pavers recommends using EnkaDrain 3801 or another comparable sheet drain.

****Helpful Hint:** For small undulations in the flat roof surface, scrap pieces of rubber membrane can be used as shims. This will help create a smoother top surface once the Aspire Paver system is installed.

Installation Instructions - Flat Roof

Aspire Resurfacing or Standard Pavers Only

1 Install Drainage Mat

IMPORTANT:
Follow drainage mat manufacturers' installation recommendation.

- Before beginning installation, inspect and approve quality of subsurface waterproofing and insulation to ensure that it is acceptable for subsurface drain installation and that the plaza has adequate slope to drain the area properly.
- Clean the area of any loose debris.
- Start at the edge and install the drainage mat with the fabric flap facing the perimeter edge, and the length of the roll going with the slope of the roof.
- Cut it to length so that there is a $^1/_2$" gap between the material and all walls and protrusions.
- Apply a bead of construction adhesive $^1/_8$" to $^1/_4$" in a zigzag pattern along the edge of the strip of drainage mat without the fabric overlap. Install the next strip of drainage mat — overlapping and bonding the fabric flap onto the previous strip.
- Repeat procedure until entire plaza deck floor is covered.
- Remove excess material from last strip without eliminating the fabric overlap.
- Be sure to cut drainage mat around any drains or where water must escape.
- DO NOT adhere the material to the waterproofing membrane.

2 Adhering Pavers to Grid

In certain cases, pavers must be adhered to the grid for security (e.g. cut pavers, wind uplift conditions, around drains or where potential standing water could exist, stairs). Consult your Aspire Paver representative in all applications where wind uplift is a concern for recommendations.

- Using a recommended adhesive (see page 3) place a $^1/_4$" bead across the top ribs of the grid.
- Place the paver in the grid and press down firmly.
- Let pavers sit undisturbed for duration of adhesive cure time.
- A 28 oz. tube of adhesive will cover approximately 25 square feet.

3 Securing Perimeter Pavers

Each application is different, and the perimeter must be secured accordingly. Aspire Pavers recommends adhering a minimum of 16" around the perimeter. For applications that do not end at a wall or parapet, Aspire Resurfacing Bullnose Pavers or Aspire Resurfacing Transition Pavers can be used to finish off the open perimeter. See pages 22 or 23 for installation details.

IMPORTANT:
Aspire Pavers are designed to be a deck covering installed over a structural deck surface. Aspire Pavers are NOT a structural replacement for a deck surface, and should NEVER be used as the structural element of the deck. Prior to installing, be sure to verify that the deck can support the addition of Aspire Pavers.

Sub-Structure Requirements

- The deck structure must meet and maintain all local codes.
- Any existing deck boards must be flat and have no protruding or loose fasteners.
- The boards should be made from rot / mildew resistant materials.
  - Consider using a water sealant where appropriate.
- A 1 1/4" treated deck board is recommended for a new deck surface under the pavers.
- Door and other thresholds must be able to accommodate the 1 3/4" added height.
- Refer back to page 8 for laying Aspire Pavers.

Edging and Trim

To secure the perimeter, there are a couple common methods:

Use Aspire Resurfacing Bullnose Pavers:

- Refer to page 22 for installation guidelines.

Use Aspire Resurfacing Transition Paver:

- Refer to page 23 for installation guidelines.

Use a Skirt Board Around the Perimeter:

- A skirt board can be installed around the open perimeters (not against the house).
- Install the skirt board 1 3/4" above the deck surface to meet up with the height of the pavers.
- Fasten the skirt board with the appropriate fasteners.
- Remember to leave the appropriate expansion gap between the pavers and the skirt board.
  - Refer to the “Account for Expansion” section on page 4 for more information.

IMPORTANT:
Do not sweep sand in paver joints on decks

Covering Stairs

Deck stairs can be covered in a similar fashion as the deck surface, but a few more steps are needed.

Screw Grids to the Stair Treads:

In all stair applications it is required to fasten the grid to the stair tread with deck screws.

- Use 1 1/2" deck screws.
- Screw each grid to the stair tread with four screws, each placed approximately 2" in from the corners.

Adhering Pavers to Grid:

OPTIONAL: To reduce movement of the pavers, a recommended adhesive can be used between the pavers and the grid. Some customers may prefer this in high traffic areas (e.g. outside of doors, at the top of steps).

- Using a recommended adhesive (see page 3) place a 1/4" bead across the top ribs of the grid.
- Place the paver in the grid and press down firmly.
- Let pavers sit undisturbed for duration of adhesive cure time.
- A 28 oz. tube of adhesive will cover approximately 25 square feet.

Edging and Trim:

In a similar fashion as edging the surface of the deck, the stairs must also be edged to secure the pavers in place and give them a finished look.

Use a Skirt Board for the Riser and Side Trim:

- Run the skirt board up 1 3/4" above the deck surface to meet up with the height of the pavers.
- Fasten the skirt board with the appropriate fasteners.

Use Aspire Resurfacing Bullnose Pavers:

- Refer to page 22.

Aspire Pavers should not be filled with joint sand when installed on a deck. For specific application questions, please call (844) 290-4196 or visit aspirepavers.com

Installation Instructions - Concrete Resurfacing

Aspire Resurfacing Pavers Only

IMPORTANT:
Water will flow out underneath the Aspire Paver system. The surface being covered should be sloped appropriately (typically 1 inch every 6 feet).
Aspire Resurfacing Pavers and Resurfacing Accessories are not designed nor recommended for vehicular traffic.

Sub-Structure Requirements

Aspire Pavers are designed to cover an existing hardscape free from major undulations. Aspire Pavers will contour to the surface in which they are resting, and will reflect any imperfections. The following techniques can be used to reduce undulations:

- A self-leveling concrete or similar product can be used to fill in any low areas.
- High areas can be knocked down and evened out to create a smooth surface.
  - It does not need to look good, as the resurfacing pavers will cover it.
- Door and other thresholds must be able to support 1-$^{3}/_{4}$" added height.
- Refer to page 8 for laying Aspire Pavers.

IMPORTANT:
Do not sweep sand in paver joints on decks

Edging the Perimeter

To secure the perimeter, there are a couple common methods when the perimeter is up against a penetrable surface (e.g. dirt, grass):

Use Aspire Resurfacing Bullnose or Transition Pavers:

- Refer to pages 22 or 23 for installation guidelines.

Use a Paver Restraint:

- A paver restraint (e.g. plastic, aluminum) can be used around any perimeter not bordered by an existing structure.
- Pound 10" metal spikes through the edging and into the ground every 6" to 12".
- Back fill up to the edging with dirt, sod, or other landscaping material.

Use a Recommended Adhesive:

An alternative way to edge the pavers is to adhere the pavers to the grid 12" around the perimeter. Do not adhere the grid to the substructure.

- Using a recommended adhesive (see page 2) place a $^{1}/_{4}$" bead across the top ribs of the grid.
- Place the paver in the grid and press down firmly.
- Let pavers sit undisturbed for duration of adhesive cure time.
- A 28 oz. tube of adhesive will cover approximately 25 square feet.
- Back fill up to the edge of the pavers with dirt, sod, or other landscaping material.

Aspire Pavers should not be filled with joint sand when used in a resurfacing application. For specific application questions, please call (844) 290-4196 or visit aspirepavers.com.

Installation Instructions – In-Ground

Aspire Standard Pavers Only

1

Site Planning and Marking

Mark Project Area:

Once the project layout has been determined, mark or spray paint the overall outline, approximately 12" wider than the planned installation area. This will provide the additional excavation area needed for installing edging. Any pavers that abut structures or other paved areas will not require installed edging and therefore do not require the additional 12" of excavation.

IMPORTANT:

Locate Utilities. Prior to beginning the installation, ensure all underground utilities (e.g. electrical lines, phone lines, water lines) have been properly located and identified.

2

Base Material Design

The subgrade is the existing soil or surface that the installation will be built upon. Subgrades that are primarily clay or silt are the weakest subgrades and typically require additional base material.

Geotextile material can be used to help prevent poor subgrade conditions from mixing with the base material. Heavy foot or vehicular traffic conditions are also good conditions for using geotextiles. The geotextile will be placed between the subgrade and the base material.

Base material should be a dense graded aggregate. Aggregate graded to $^{3}/_{4}$" minus is a commonly used base material, often referred to as “Class 5” or “road base.” Please refer to local requirements and specifications or ASTM D 2940 for further information. Do not use stone dust or screedings.

IMPORTANT:

The preparation of the site and base material is critical to a long lasting, flat and premium looking installation. Also, a properly prepared site will reduce installation time. Please contact a landscape professional if required.

IMPORTANT:
These are general guidelines only and all base requirements vary by soil conditions, weather conditions, and other site-specific conditions. Areas that see freeze-thaw cycles or have wet, clay or silt type subgrades generally require a deeper base. Consult a landscape professional for more customized base recommendations.

Patios, Walkways, Plazas, Other Foot Traffic	4" to 6"
Driveways, Other Light Traffic	6" to 12"
Parking Lots, Fire Lanes, Other Heavy Traffic	Consult Landscape Professional

The base material needs to be compacted every 2" as it is spread out. This will reduce any chance of the base material settling over time making the installation uneven.

Additional resources for base design can be found at ICPI Project Drawings (www.icpi.org)

Slope:
It is very important to slope the base in the direction that water is preferred to go. The typical slope is approximately 1" over 6'.

Sand Bed:
A layer of bedding sand is spread out on top of the compacted base material. This layer should be a maximum of $^{3}/_{4}$" to 1". This will create a workable surface for the pavers to be installed upon and will make it easier to make the installation even.

- Use coarse sand that is washed and conforms to ASTM C 33.
- Do not use mason sand, stone dust, or sands with excess fine particles.

3 Excavation

To install the necessary base material, the existing ground material must be taken out. To calculate how deep to excavate, add up these layers:

Excavation Depth = Base Material Thickness + Sand Bed Thickness + 2.38" (Pavers) – $^{1}/_{4}$"

Once the excavation depth is known:

- Excavate site to the appropriate depth.
- Try not to disturb the subgrade beneath the required depth.
- The subtraction of $^{1}/_{4}$" leaves room for compaction that occurs during the final tamping.
- Level and compact the subgrade to a 95% proctor density (ASTM D 698)
- Always have the compaction formally tested to ensure it meets the required standards.

4

Install Base Material And Sand Bed

Install and Compact Base:

- Add base material 2" at a time.
- Compact each layer completely with a plate compactor or hand tamper.
- Compact to 95% proctor density (ASTM D 698).
- Be sure to compact all edges and corners thoroughly as these are at the most risk to degradation.
- Limit any undulations to under 1/4" to limit any dips or humps in the final installation.

IMPORTANT:
Be sure to install base material at the proper slope. This should be approximately one inch over six feet to ensure sufficient water drainage.

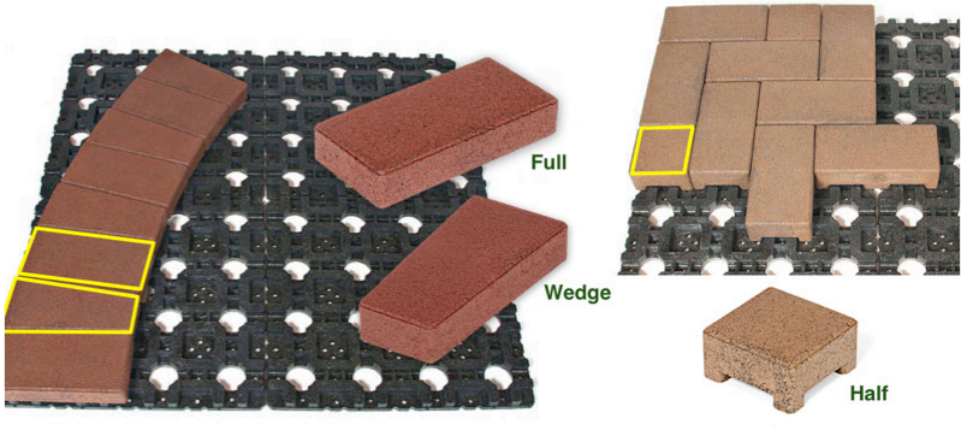
Do not use sand to level depressions in the base layer. Instead, add base material to level the area.

Install and Level Sand Bed:

- Add a 3/4" to 1" layer of bedding sand.
- Lay down two parallel pieces of conduit (3/4" or 1" diameter).
- Place bedding sand between the two pieces of conduit and pull a screed board or straight edge down the conduit to level the sand out.
- Add sand to areas that are uneven and re-level.
- Pull the conduit out and fill in the area, leveling with a trowel or float.
- Do not compact the bedding sand.
- Refer back to page 7 for laying of Aspire Pavers.

Decide on Border / Soldier Course:

The Aspire Paver system allows for several border and soldier course options. These can either be straight or curved. The accessory pavers can help limit the cutting and give a finished look to the project.



5

Install Borders And Accessory Pavers

If the project requires curved or straight borders the accessory pavers can eliminate much of the cutting. These include legless full pavers and wedge pavers.

- Draw the shape of the desired border onto the pavers that will need to be cut. Laying the accessory pavers on top of the other pavers and tracing the interior edge is the easiest. A string line may also be used.
- Cut the pavers on the line in place using a jigsaw (do not cut through the grid), or using a miter saw.
- Place the legless full and/or wedge pavers on top of installation grids to create the border. To calculate the number of full and wedge pavers needed for a given radius.
- Use a recommended adhesive between the accessory pavers and the grid (see page 3).

6

Install Edging

Edge Restraints:

Aspire Pavers require the use of an edge restraint around the perimeter.

Edge restraints help keep the installation from moving, and perimeter pavers from tipping off the grid. The edging is generally staked down using 10" stakes, one every 6" to 12". Plastic, aluminum, or concrete edging will work.

Edge restraints can be installed next to, or on top of, Aspire Installation Grids. For areas that will eventually be bordered by sod, or that have a curved perimeter, some installers may prefer to install edging over the top of the installation grids. If this is done, drill holes in the grid where the stakes will go.

IMPORTANT:
When installed up against asphalt, a 4" wide ribbon of concrete the depth of the base material is recommended. If abutted directly to asphalt, expansion of the Aspire Paver system may push the asphalt and cause it to buckle.

7

Tamping Pavers and Joint Sand

The final steps to finish up the installation are a combination of tamping and sanding the pavers. This will even out small undulations and lock the pavers into place.

Tamp (Compact) Pavers:

Prior to sanding the pavers, use a vibratory plate compactor or a hand tamper to work the pavers into the sand bed. This will typically cause the pavers to sink approximately $^{1}/_{4}$" into the bedding sand and will reduce small undulations.

- A vibratory plate compactor will take one to two passes in both directions.
- A hand tamper will require several strikes in each location.
  - Move around as you strike the pavers and make several passes.
- The high undulated areas can be further tamped to even the surface.

IMPORTANT:
Review the surface after tamping for any imperfections. If any are found, lift up the pavers and grid and either add or remove sand to make it level. Re-tamp the pavers after the imperfections have been removed.

Do not use polymeric sand with the Aspire Paver system. As the system expands and contracts it may cause the polymeric sands to break away from the edges of the pavers.

Sweep in Joint Sand and Tamp Pavers:

The same sand used for the sand bed can be used for the joint fill. This is a clean, sharp and well-graded coarse sand. Do not use overly fine sands; coarse sand will perform better. The standard specification for joint sand is ASTM C 33.

- Start by spreading the sand across the pavers with a shovel.
- Allow the sand to dry completely; this will make it easier to get into the joints.
- Use a broom to spread the sand across the joints, sweeping in all directions.
- Continue to spread and sweep the sand while tamping the pavers.
  - This can be done with a hand tamper or plate compactor.
- When the joints appear to be filled to the desired level, sweep the installation clean of any remaining sand or dust.
- The pavers will return to their original color once the pavers have been cleaned by rain.
- Additional joint sand applications may be necessary after rain or settling of the joint sand occurs.

1

PERMEABLE BASE MATERIAL

Each permeable application is different, and there are multiple considerations that must be taken into account (e.g. amount of rainwater, runoff water from hills and downspouts, soil type, the infiltration rate of the pavers).

A permeable base is typically comprised of multiple layers of different sized fractured-face stones. The base material should be an open-graded aggregate, free from sands and other small particles. Please refer to local requirements and specifications, or visit ICPI.org for more information.

IMPORTANT:
A civil engineer, landscape professional, or local municipality, is recommended to design the appropriate permeable base.

Here is a generic permeable base found on the ICPI website.

Top Layer ($^{3}/_{8}$" chip rock or No. 8 stone)	**2 inches**
Middle Layer (1" stone or No. 57 stone)	**4 inches**
Bottom Layer (2 $^{1}/_{2}$" stone or No. 2 stone)	**6+ inches**

* Geotextile fabric optional between sub-base and bottom layer

The base material needs to be compacted every 2" as it is spread out. This will reduce any chance of the base material settling over time making the installation uneven. Additional resources for base design can be found at www.icpi.org

Slope:

It is very important to slope the sub base (ground beneath the permeable base material) away from any building structures or foundations. The typical slope is approximately 1" over 6'.

2

INSTALL BASE MATERIALS

Install and Compact Base:

- Add base material 2" at a time.
- Compact each layer completely with a plate compactor or hand tamper.
- Compact to 95% proctor density (ASTM D 698).
- Be sure to compact all edges and corners thoroughly as these are at the most risk to degradation.
- Limit any undulations to under $^{1}/_{4}$" to limit any dips or humps in the final installation.

Install, Compact, and Level Bedding Layer:

- Add a 1 $^{1}/_{2}$" to 2" layer of chip rock ($^{3}/_{8}$" clean, fractured-face rock or No.8 stone)
- Level the bedding layer appropriately and tamp with a hand tamper or vibratory plate compactor.
- Add chip rock to areas that are uneven and smooth them out.
- Refer back to page 7 for laying of Aspire Pavers.

3

TAMPING PAVERS AND JOINT FILL

The final steps to finish up the installation are tamping and sweeping chip rock between the pavers. This will even out small undulations and lock the pavers into place.

- Refer back to page 8 for laying Aspire Pavers.
- Refer back to page 18 for borders and edging.

IMPORTANT:
Review the surface after tamping for any imperfections. If any are found, lift up the pavers and grid and either add or remove chip rock to make it level. Re-tamp the pavers after the imperfections have been removed.

Do not use sand or polymeric sand with the Brava Permeable Paver system.

Tamp (Compact) Pavers:

Prior to sweeping chip rock between the pavers, use a vibratory plate compactor or a hand tamper to work the pavers into the bedding layer. This will typically cause the pavers to sink approximately $^{1}/_{4}$" into the bedding layer and will even out any small undulations.

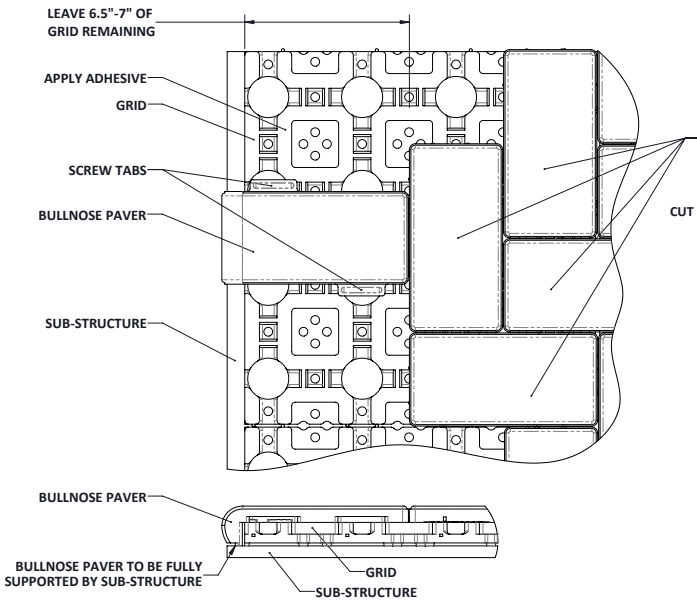
- A vibratory plate compactor will take one to two passes in both directions.
- A hand tamper will require several strikes in each location.
  - Move around as you strike the pavers and make several passes.
- The high undulated areas can be tamped down more to even the surface.

Sweep in Joint Fill:

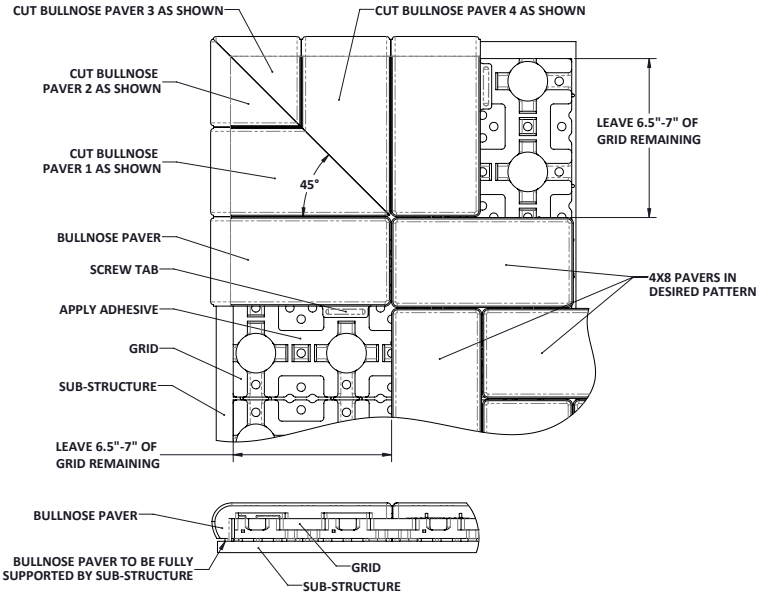
The same chip rock used for the bedding layer can be used for the joint fill. This is a $^{3}/_{8}$" clean, fractured-face stone. The standard specification for permeable joint fill is ASTM No. 8 stone.

- Start by spreading the chip rock across the pavers with a shovel.
- Using a broom spread the chip rock across the joints, sweeping in all directions.
- When the joints appear to be filled to the desired level, sweep the installation clean of any remaining chip rock or dust.
- The pavers will return to their original color once the pavers have been cleaned by rain.
- An additional sweeping may be necessary after rain or settling of the joint fill occurs.
- Do not tamp the pavers after the chip rock has been placed on the pavers.

Resurfacing Bullnose Pavers



Corner Assembly

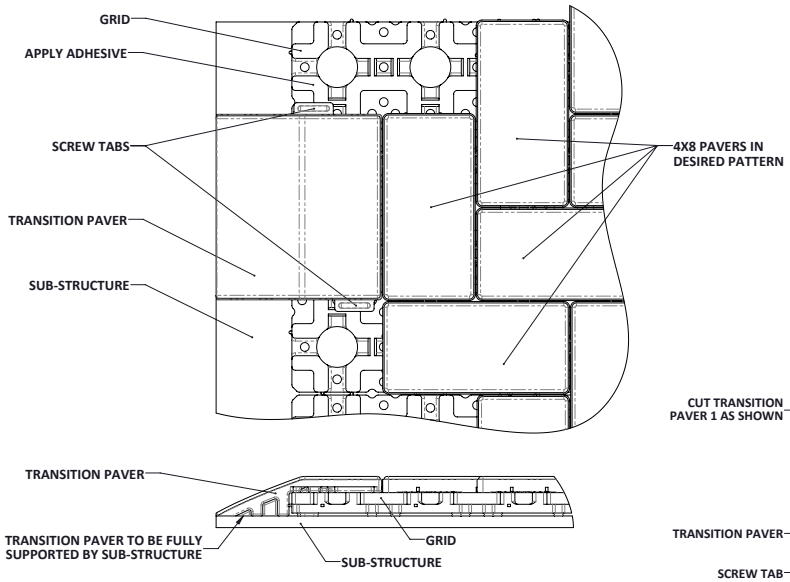


NOTE:

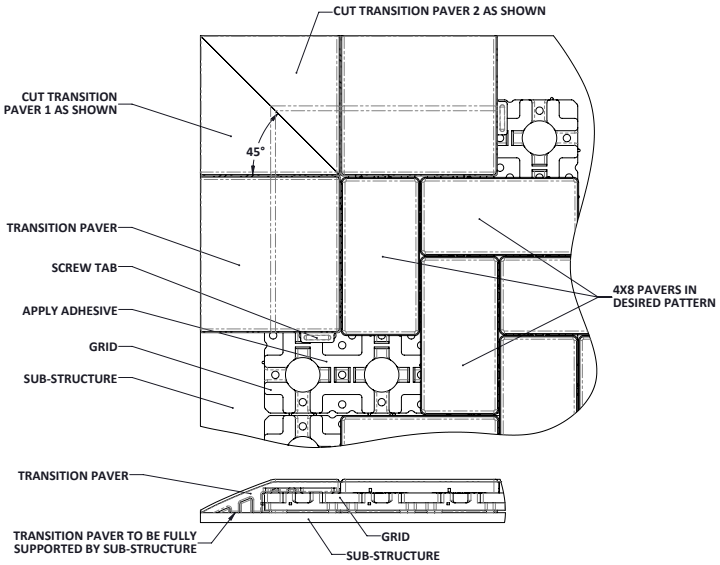
- **For best results, a stainless steel #8 screw with a flat head design (i.e., Bugle head or similar) - do not use a larger diameter screw than a #8, as this can damage the screw tab.**
- **Head diameter should not exceed $^{3}/_{8}$"**
- **Always drive screws flush – do not overdrive or screw tab may become damaged/ torn…do not leave screw heads sticking up, as this can cause interference with interlocking.**
- **In applications where screws are permitted to penetrate below/beyond the underlying grid, a stainless steel #8 decking screw, such as a 2" long headcote 305, or a #8 leola screw works well. This would be suitable for applications where pavers are placed over a wood structure to achieve additional holding power.**
- **In applications where the screw cannot penetrate beyond the underlying grid or surface below, a #8 stainless steel flat head screw with a length of no longer than 1" can be used, such as a stainless steel #8 x 1" sheet metal screw with a flat head.**

- Cut Grid to allow for adequate interaction of Grid and Paver and so the bottom of the Bullnose Paver is fully supported.
- Choose a starting point based on the dimensions of the project and the desired pattern.
- Fasten Grids on stair treads using $1\,^{1}/_{2}$" screws.
- Do not use screws to fasten grids on deck or flat roof surfaces.
- Apply $^{1}/_{4}$" bead of adhesive to the top ribs of the Grid. When applying adhesive, do not put the adhesive over top of the screw tabs, as this could cause the adhesive to squeeze up and out between pavers, making the adhesive visible.
- Place Bullnose Paver onto the Grid, pressing firmly.
- Screw down the visible tabs into the Grid.
- Do not screw into deck boards except on stairs.
- **Screws are not recommended on flat roof applications.**
- Slide adjacent Bullnose Pavers into place until finished. (May need to cut off exterior tabs)
- Let cure for a minimum of 72 hours.

Resurfacing Transition Pavers



Corner Assembly



NOTE:

- For best results, a stainless steel #8 screw with a flat head design (i.e., Bugle head or similar) - do not use a larger diameter screw than a #8, as this can damage the screw tab.
- Head diameter should not exceed $^{3}/_{8}$"
- Always drive screws flush – do not overdrive or screw tab may become damaged/torn... do not leave screw heads sticking up, as this can cause interference with interlocking.
- In applications where screws are permitted to penetrate below/ beyond the underlying grid, a stainless steel #8 decking screw, such as a 2" long headcote 305, or a #8 leola screw works well. This would be suitable for applications where pavers are placed over a wood structure to achieve additional holding power.
- In applications where the screw cannot penetrate beyond the underlying grid or surface below, a #8 stainless steel flat head screw with a length of no longer than 1" can be used, such as a stainless steel #8 x 1" sheet metal screw with a flat head.

- Choose a starting point based on the dimensions of the project and the desired pattern.
- Trim expansion nubs off front edge of grid.
- Apply $^{1}/_{4}$" bead of adhesive to the top ribs of the Grid. When applying adhesive, not put the adhesive over top of the screw tabs, as this could cause the adhesive to squeeze up and out between pavers, making the adhesive visible.
- Place Transition Paver onto the Grid, pressing firmly.
- Screw down the visible tabs into the Grid using 1" Screws.
- Do not screw into subsurface.
- Slide adjacent Transition Pavers into place until finished (may need to cut off exterior tabs).
- Let cure for a minimum of 72 hours.

Aspire

Installation Guidelines & Instructions

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