

RESOURCE GUIDE | EAST COAST | NJ, PA, NY

LIFETIME TRANSFERABLE LIMITED WARRANTY

Oldcastle® Architectural, Inc. ("Belgard") is proud to inform you that all of our interlocking concrete paver and retaining walls ("Products") meet and/or exceed the requirements of ASTM C-936 and ASTM C-1372. Belgard® guarantees its Products against these standards for the lifetime of the Product defined by *ICPI*. This guarantee does not apply to splitting, chipping or other breakage that could be caused by impact, abrasion or overloading. This warranty is transferable. The original proof of purchase is required.

This warranty is only valid if the material is installed under the guidelines of the ICPI (www.ICPI.org), The NCMA (www.NCMA.org) or the Belgard Installation Guideline Manual. Improper installation voids this warranty. This warranty is for residential applications only and does not apply to commercial applications. It is recommended that the job be installed by a Belgard Authorized Contractor who guarantees their workmanship for a minimum of 2 years from the date of install. For warranty service, contact Belgard at 1-800-BELGARD. A service representative will investigate your claim within 10 business days. If the Belgard product fails to meet the specifications, Belgard will replace the defective product at no charge. Color matching cannot be guaranteed. Belgard will not be responsible for any replacement labor, consequential damages or incidental damages. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. SOME STATES DO NOT ALLOW FOR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

For specific information regarding warranty coverage and exclusions in regards to the Elements and Porcelain Paver products, please visit: **Belgard.com/Warranty**

ABOUT US

At Belgard®, we take our role as industry leaders seriously. Our rigorous research and development program is centered on innovation and quality. We never take it for granted that our products are the best in the business and constantly strive to improve and take the industry to the next level. Our overarching goal is to continue to find new and exciting ways to create beautiful outdoor spaces while maintaining incredibly high standards for product quality and performance.

Since 1995, our locally made and nationally backed products have transformed thousands of residential and commercial properties across North America. With more shapes, styles and textures than any other brand, Belgard's Outdoor Living paving and wall products aren't just functional, they infuse outdoor spaces with distinctive atmosphere and style.

Every day, our network of Belgard Authorized Dealers and Contractors helps customers realize their outdoor dreams. And every year, we strive to improve our product and service offerings by dedicating more than 20,000 hours to research and development. By staying ahead of design trends, we are able to provide design-forward products that homeowners envision for their backyard spaces.

All of our outdoor products—when installed by a Belgard Authorized Contractor—are covered by a transferable lifetime limited warranty. That's just part of our commitment to lasting outdoor beauty.

INSTALLATION & PRODUCT INFORMATION

PAVERS & SLABS

5 Paver Laying Guides
7 Paving System Installation Guide
9 Peak Performance from Concrete Pavers
11 Dimensions™ 3-Piece System
16 Dublin Cobble®
19 Holland Stone
23 London Cobble
27 Mega-Arbel® Patio Slab
29 Old World Paver™
31 Old York™
35 Origins™ 3-Piece System
38 Origins™ Accent

PERMEABLE PAVER

42 Permeable Interlocking Concrete Pavement
45 Aqua Roc™ I
49 Turfstone™

PORCELAIN PAVERS & PLANKS

53 About Porcelain
54 Porcelain Paver Installation Guide
57 Ardesie
58 Glocal
59 Noon
60 Quarziti 2.0
61 Verona
62 Unico

WALLS

64 Wall Types
66 Before You Begin
67 Estimating Base Course Materials
68 Basic Installation Construction Guide
82 AB® Collection
83 Aspen Stone®
84 Belair® Wall
86 Brookshire
88 Diamond® 9D
90 Diamond Pro® PS
89 Diamond Pro® PS Quarried Face
91 U Start Base Block
92 Weston Stone™

VERSATILE LANDSCAPING

94 Artforms™
96 Ashlar Tandem™ Wall
97 Lafitt Tandem™ Wall
98 Tandem® Column Kits
99 Tandem® Modular Grid

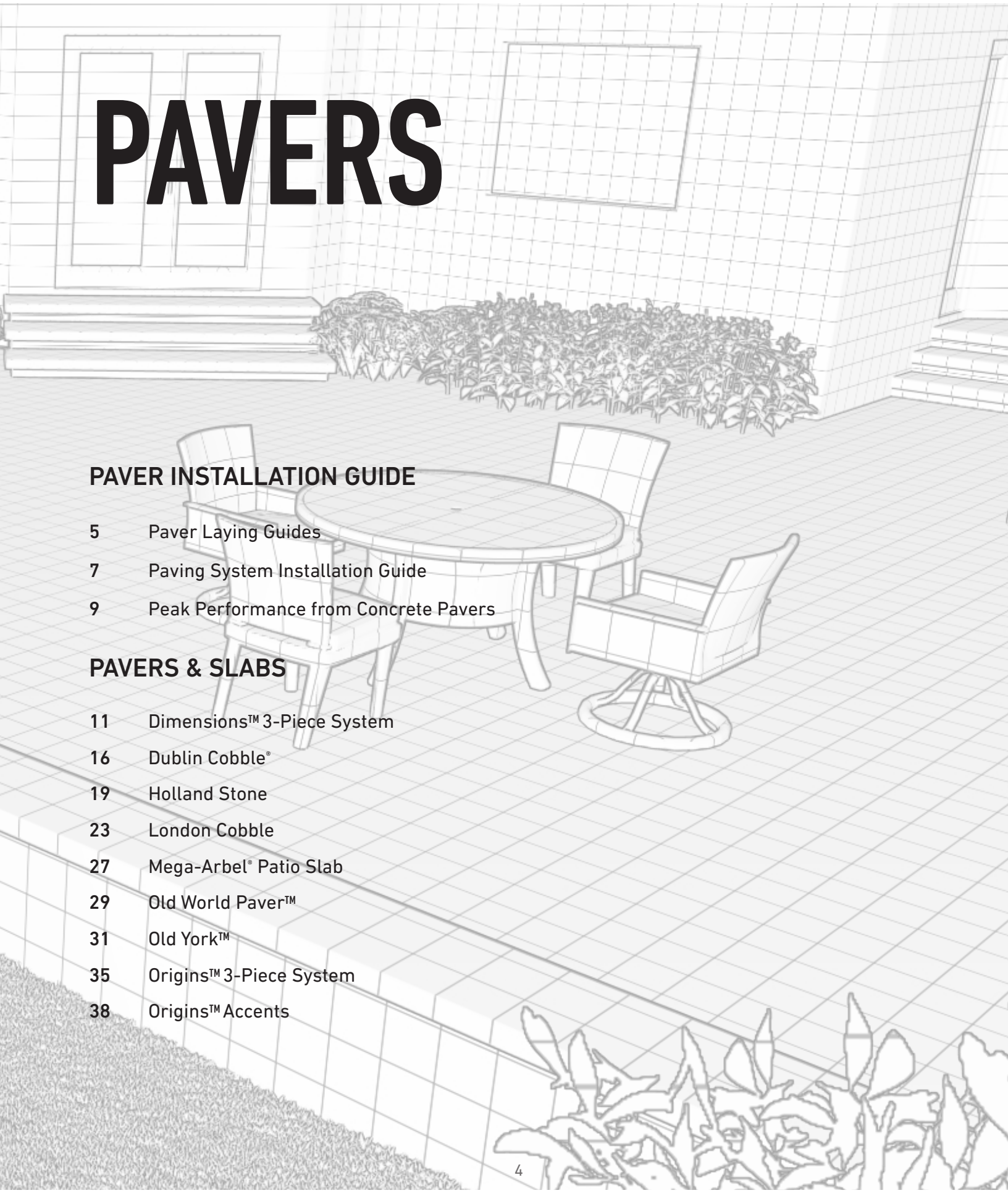
FIRE FEATURES

103 Bordeaux Series™
106 Brighton Series™
108 Bristol Series™
110 Brookshire™ Fire Pit Kit
111 Weston Fire Pit Kit™

ACCESSORIES

113 Angila Edger®
114 Brookshire™ Curb
115 Country Manor® Curb
116 Laguna™ Coping
117 Landings™ Step Unit
119 Marina™ Coping

PAVERS



PAVER INSTALLATION GUIDE

5 Paver Laying Guides

7 Paving System Installation Guide

9 Peak Performance from Concrete Pavers

PAVERS & SLABS

11 Dimensions™ 3-Piece System

16 Dublin Cobble®

19 Holland Stone

23 London Cobble

27 Mega-Arbel® Patio Slab

29 Old World Paver™

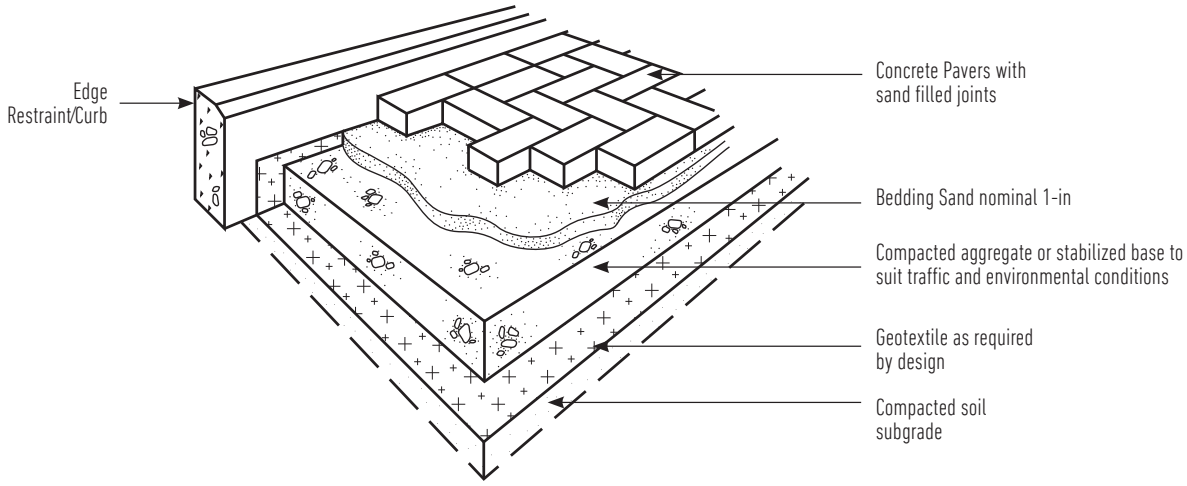
31 Old York™

35 Origins™ 3-Piece System

38 Origins™ Accents

PAVER LAYING GUIDE*

TYPICAL COMPONENTS OF INTERLOCKING CONCRETE PAVEMENT



PAVER & BEDDING LAYER

Attribute	Tolerance
Paver Joint Width	1/16–in to max. 3/16–in
Paver Surface Flatness	±3/8–in 10-ft (non cum.)
Lippage at Catch Basins/Drains	1/8–in to 3/8–in (non ADA)

Lippage between individual pavers maximum 1/8-in for pedestrian access routes.

Attribute	ICPI Recommendation
Paver aspect ratio (l:t) (length divided by thickness)	max. 4:1 for pedestrian & driveways max. 3:1 for street/parking
Joint fill depth	max.1/2-in measured from top of pavement
Bond lines[1]	±1/2-in max. over 50-ft
Slope for drainage	min. 2%
Cut pavers[5]	No less than 1/3-in for vehicular application No less than 3/8-in for all other applications
Paver laying pattern[2]	Acceptable for application
Minimum paver thickness	31/8-in for street/parking 23/8-in for pedestrian & driveways
Bedding layer thickness	1-in nominal
Joint sand gradation	ASTM C144 or C33 CSA A23.1 FA1 or CSA A179
Bedding sand gradation	ASTM C33 or CSA A23.1 FA1

BASE AND SUBBASE LAYER

Attribute	Tolerance
Top of base surface variation	**± 3/8-in over 10-ft (non cum.)**

Attribute	ICPI Recommendation
Base thickness variation[3]	+ 3/4-in to -1/2-in
Compaction	min. 98% standard Proctor
Over-excavation (dense graded bases)	greater of 6-in or equal to base thickness
Geotextile	as needed

Minimum base thickness

Sidewalks, patios, pedestrian	4-in
Residential driveways	6-in
Parking lot/residential street	8-in

Edge Restraint/Curb Edge

Attribute	Tolerance
No Movement	Firmly in place
Proper Restraint	Acceptable for application (see "Guide References on next page)

NOTES:

*This guide does not apply to permeable interlocking concrete pavements or tumbled pavers.

[1]Bond lines: Unless it is deemed that the pavement is not adequately restrained at the edges the bond line tolerance is considered cosmetic

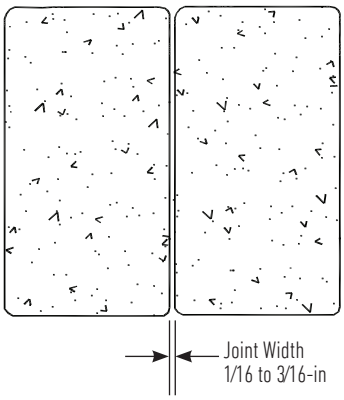
[2]Paving layer pattern: ICPI recommends herringbone laying pattern for all vehicular applications

[3]Base thickness variation: An example of an acceptable variation is 71/2 in. to 83/4-in for an 8-in required total base thickness. The excavated cut should have the same slope and contouring as the final surface profile.

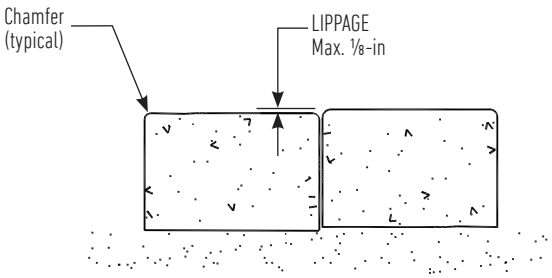
[4]Minimum base thickness: These are for well drained soils. Increase thickness in colder climates or weak soils.

[5]The contractor should have the discretion on cuts no less than 1/3 paver size. Sometimes it is not possible to adjust the cuts to less than 1/3 paver size without adjusting laying pattern, and sometimes it is not possible to adjust laying pattern with certain shapes.

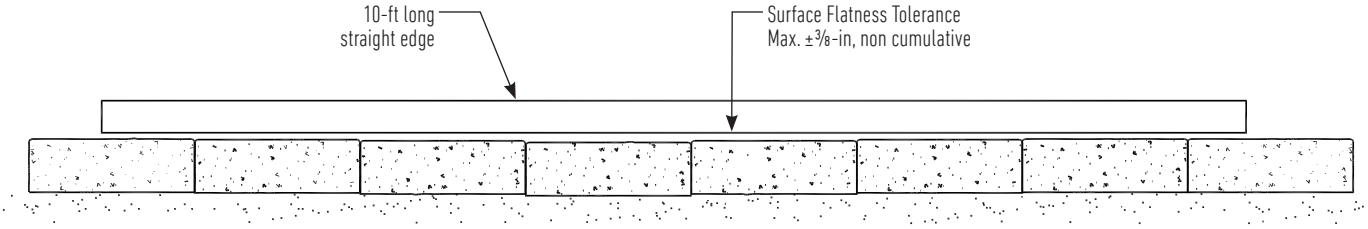
TOLERANCE MEASUREMENT GUIDANCE



Joint widths are measured with a ruler from inside edge of paver to inside edge paver between adjacent pavers.



Lippage is measured from the top of a paver to the top of the adjacent paver.



Paver surface flatness and top of base surface variation are measured with a straight edge for simple slopes and with a transit for complex contours

GUIDE REFERENCES

Specification and design references

ASCE 58-10 Structural Design of Interlocking Concrete Pavements for Municipal Streets and Roadways
ICPI Tech Spec 4–Structural Design of Interlocking Concrete Pavement for Roads and Parking Lots
ICPI Tech Spec 9–Guide Specification for the Construction of Interlocking Concrete Pavement

Pavement system references

ASTM C936 Standard Specification for Solid Interlocking Concrete Paving Units
CSA A231.2 Precast Concrete Pavers
ICPI Tech Spec 1–Glossary of Terms for Segmental Concrete Pavement
ICPI Tech Spec 2–Construction of Interlocking Concrete Pavements
ICPI Tech Spec 4–Structural Design of Interlocking Concrete Pavement for Roads and Parking Lots
ICPI Tech Spec 5–Cleaning, Sealing and Joint Sand Stabilization of Interlocking Concrete Pavement

Bedding and joint sand references

ASTM C33 Standard Specification for Concrete Aggregates
CSA A23.1 Concrete Materials and Methods of Construction
ASTM C144 Standard Specification for Aggregate for Masonry Mortar
CSA A179 Mortar and Grout for Unit Masonry
ICPI Tech Spec 17–Bedding Sand Selection for Interlocking Concrete Pavements in Vehicular Applications

Base, subbase and subgrade layer references

ASTM D 2940 Standard Specification for Graded Aggregate Material For Bases or Subbases for Highways or Airports
ICPI Tech Spec 2–Construction of Interlocking Concrete Pavements
ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort

Edge restraint references

ICPI Tech Spec 3–Edge Restraints for Interlocking Concrete Pavements

PAVING SYSTEMS INSTALLATION GUIDE

INSTALL THE EDGE RESTRAINTS



Install edge restraints.

Place edge restraint on one or two sides of the area to be paved to create a square area. If installing a circle or curve, edging can be installed after pavers are placed. Anchor the edging with fasteners, approximately one fastener every 12 inches (follow instructions per edge restraint manufacturers). Before compacting pavers into the sand bed, all edging should be installed. The edging goes on the base, not on top of the sand. Remove excess sand from the edge of the paved area before installing the edging.

INSTALL THE BEDDING SAND



Install bedding sand.

Place at least two pipes of 1-inch outside diameter directly on the base. Place them 6 to 8 feet apart and parallel to each other. Spread the sand between the pipes. Use a shovel and rake to smooth it out. The sand should be moist but not wet or saturated.

Use a straight piece of wood (an 8-foot 2 x 4) to screed the sand smooth

Pull the wood across the pipes several times until the area of sand is perfectly smooth. Remove the pipes and fill the voids with sand. Level these areas with a trowel. Don't walk on or disturb the screeded and leveled sand.

PLACE THE CONCRETE PAVERS

Start in the corner, if you have one in your design, and check to see that it is a 90-degree corner. Place a border course around the entire edge, then place the pavers in the desired pattern. See pattern and border on pages 105-114- for reference.

Continue to screed bedding sand and place pavers on the sand while maintaining consistent joint widths. String lines will help keep pavers straight.

Cut pavers as needed to fill in at the edges next to the border course. Use a diamond blade to cut the pavers.

Helpful hint for Rinn™ and Texturgard™ pavers for optimal aesthetics leave joint space between cut pavers.



Place pavers.

INSTALL REMAINING EDGE RESTRAINTS

Installing edge restraints after pavers have been installed allows for adjustments in size of paved area to help reduce pavers needing to be cut. Based on the shape and pattern we are using our 10- x 20-foot area may come to just under or over without having to cut pavers. When installing remainder of edging remember to remove sand from edge of pavers so edging sits on the base.



Compact pavers.

COMPACT THE PAVERS USING A PLATE COMPACTOR

Make at least two passes over all pavers, starting at the outside of the pavement, working around the edges toward the inside. Then compact back and forth like mowing grass. Remove and replace any pavers that crack from the compaction equipment. Adjust joints so they are consistent. A large screwdriver is effective for aligning paver joints.

SPREAD DRY JOINT SAND OVER THE SURFACE

Sweep some sand into the joints, then vibrate and compact it into the joints, sweeping and compacting as you go. Filling the joints with sand will take several passes with the plate compactor. After compaction, the sand in the joints might settle, especially after rainstorms. Apply extra sand to fill these joints as needed.

NOTE: Many recommend using polymeric jointing sand to fill the joints between pavers, which helps to stabilize the sand in the joints and control ants and weeds. Belgard® carries Techniseal® products such as HP NextGel Jointing sand. Make sure to follow all manufacturer recommendations in using and applying these products.

HELPFUL HINT FOR PAVER PROTECTION

Manufacturers of plate compactors recommend the use of mats or membranes between the compactor and pavers to protect the pavers from surface damage. Most plate compactor manufacturers sell accessories for this purpose.

Pavers with profiled tops, non-tumbled pavers and Rinn™ and Texturgard™ paver surfaces are more susceptible to damage from plate compactors. We recommend that you always protect the pavers with any of the following materials between the paver and the plate compactor.

- Cardboard
- Thin carpeting
- Luan plywood
- Urethane rubber mat



PEAK PERFORMANCE FROM CONCRETE PAVERS

Quality concrete pavers create a surface that can last for generations when placed on a well-prepared base. They need practically no maintenance when installed to ICPI guidelines. This guide will help you get the most value from your concrete paver installation.

JOINT SAND



During the course of normal use, the sand- filled joints receive dust from traffic on the pavement. This dust settles into the top of the joints, helping to hold the sand in place. Installations exposed to driving winds or runoff, however, may lose some joint sand that can be simply replenished with dry sand. Stabilized sand can be used instead of mason sand to reduce joint sand loss. Sealers can also help hold the sand in the joints. These are applied over the entire paver surface as a liquid and allowed to soak and cure in the joints. Ask your concrete paver manufacturer or distributor about these products and their application.

PREVENTING WEEDS AND ANTS



Weeds can germinate between pavers from windblown seeds lodged in the joints. They don't grow from the bedding sand, base or soil. Weeds can be removed by hand or with herbicides. Take care in using herbicides to not damage adjacent vegetated areas. Use biodegradable products that won't damage other vegetation or pollute water supplies when washed from the pavement surface. Besides stabilizing the joint sand, sealers can prevent seeds from germinating and discourage ants from entering.

SNOW AND ICE REMOVAL

Concrete pavers offer outstanding freeze-thaw resistance. They can resist damage from de-icing salts better than most pavement surfaces. Snow and ice are removed with shovels or plows like any other pavement. Electric or liquid snow-melting systems work well under concrete pavers, eliminating plowing and reducing slip hazards.



EFFLORESCENCE

Efflorescence is a white haze that may appear on the surface of pavers sometime after installation. It forms as a result of a natural chemical reaction that occurs when the lime or water soluble calcium oxide, produced by the cement contained in the pavers, reacts with water. When the water enters the microscopic capillaries in the pavers, calcium hydroxide is formed. The calcium hydroxide rises to the surface of the paver, reacts with the carbon dioxide in the air, and forms a white haze of calcium carbonate when the moisture evaporates from the surface. The appearance of efflorescence stops when there isn't any more calcium hydroxide available to move to the surface. This process sometimes can take several months.



Pavers with effloescence



Pavers after cleaning

Efflorescence does not damage pavers. However, it can be unappealing. The white haze may give the impression that the paver color is fading but this is not the case. Efflorescence may occur randomly or be concentrated in certain areas. Dark colored pavers show efflorescence more than lighter-colored ones. If efflorescence does occur, it can be removed with cleaners specially made for concrete pavers. Careless or improper cleaning can result in damage and discoloration to the concrete paver surfaces. Contact your Belgard sales representative for further information on efflorescence cleaners.

COLOR AND WEAR

Color in concrete pavers is achieved by adding pigment to the concrete mix during production. The cement in the concrete mix holds the pigments in place. They are very stable, showing little change in their properties over time. As the paver wears from traffic or weather, the cement and pigment particles gradually erode causing a color change over time. Like all pavements, concrete pavers receive dirt from foot or tire traffic which also changes the surface color. One way to moderate the rate of color change is by cleaning and sealing the surface of the concrete pavers. Besides enhancing their color, sealers can prevent dirt from lodging in the surface.



Sealed Unsealed

SETTLEMENT AND UTILITY REPAIRS



Settlement is often caused by inadequate soil or base compaction. Other factors can be water in the base or soil, too thick a layer of bedding sand, or washed out bedding and joint sand. Loose or inadequate edge restraints cause pavers to move apart and can also contribute to settlement. If the base or soil has settled and is stable, remove the pavers and bedding sand, place and compact additional base material to the correct level, then add bedding sand. The removed pavers can then be reinstated with no wasted paving materials or unsightly patches. Concrete pavers can be removed for access to underground utilities, and reinstated after repairs. When utility repairs are complete, fill the trench with base material and compact it. Remove about 18 in. (0.5 m) of pavers on either side of the opening, level the bedding sand and replenish as necessary. Reinstate the pavers, compact, fill the joints with sand and compact the surface again, filling joints as needed.

REMOVING OIL STAINS



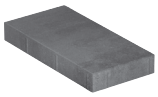
Concrete pavers aren't damaged by oil leaking from cars, but the stains can be difficult to remove. Stains should be treated as soon as possible since the longer they remain on the surface, the deeper they penetrate making removal harder. Wipe excess oil from the surface as soon as possible and apply liquid detergent. Allow it to soak for several minutes. Then scrub and wash the pavers with hot water. Several treatments may be necessary for particularly stubborn stains. Cleaners specially made for removing oil stains from concrete pavers are available and yield good results. In some cases, it may be simpler to replace the stained pavers with new ones. Cleaning and sealing concrete pavers early in their life can make removing stains easier since sealers prevent stains from soaking into the surface.

NEW
DIMENSIONS™ *12*

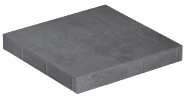
PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓					✓

SHAPES & SIZES

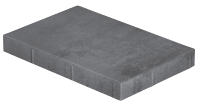
DIMENSIONS*12* | 60mm



6 x 12 x 2⅜



12 x 12 x 2⅜



12 x 18 x 2⅜

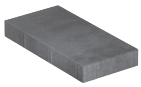
UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
DIMENSIONS*12* | 60MM							
6 X 12 X 2⅜	20	2	–	40	-	–	-
12 X 12 X 2⅜	40	4	–	40	-	–	-
12 X 18 X 2⅜	60	6	–	40	-	–	-
TOTAL	120	12	10	120	-	–	3348

NEW
DIMENSIONS™ *18*

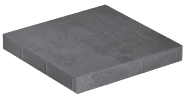
PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓					✓

SHAPES & SIZES

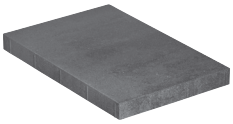
DIMENSIONS*18* | 60mm



9 x 18 x 2⅜



18 x 18 x 2⅜



18 x 27 x 2⅜

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
DIMENSIONS*18* | 60MM							
9 X 18 X 2⅜	22.5	2.25	–	20	-	–	-
18 X 18 X 2⅜	22.5	2.25	–	10	-	–	-
18 X 27 X 2⅜	67.5	6.75	–	20	-	–	-
TOTAL	112.5	11.25	10	50	-	–	3296

DIMENSIONS™

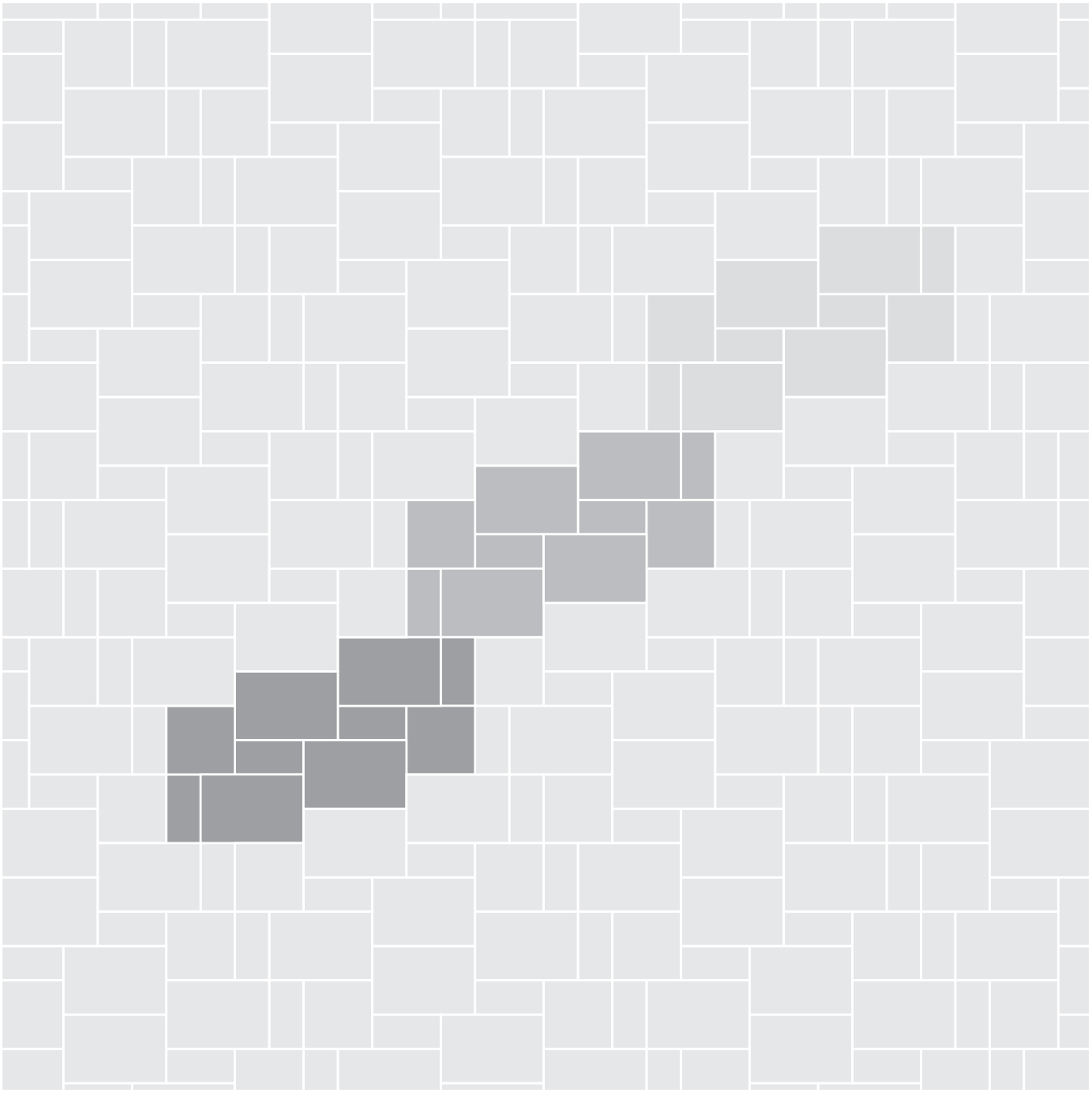
3-PIECE LARGE PATTERN A

NOTES:
AutoCAD® hatch pattern files can be downloaded from belgard.com for use in architectural drawings

Some patterns may not necessarily reflect the percentages of stone sizes within a particular pallet. In some cases you may have extras in one or more of the sizes. This must be accounted for in your planning and design.

Percentages are based on area by paver.

21%	6 x 12	21%	9 x 18
23%	12 x 12	23%	18 x 18
56%	12 x 18	56%	18 x 27



DIMENSIONS™

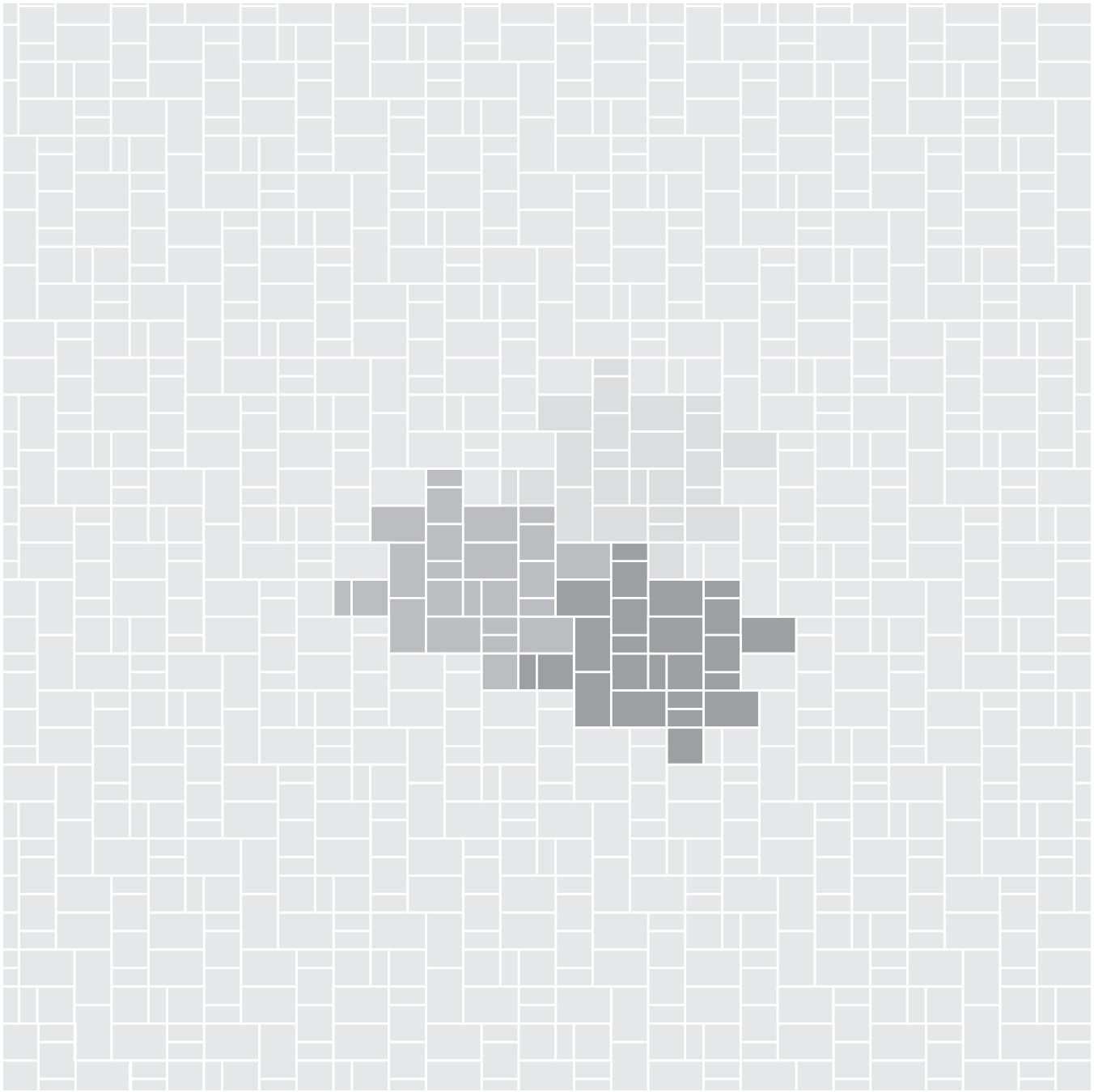
3-PIECE LARGE PATTERN D

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DIMENSIONS™

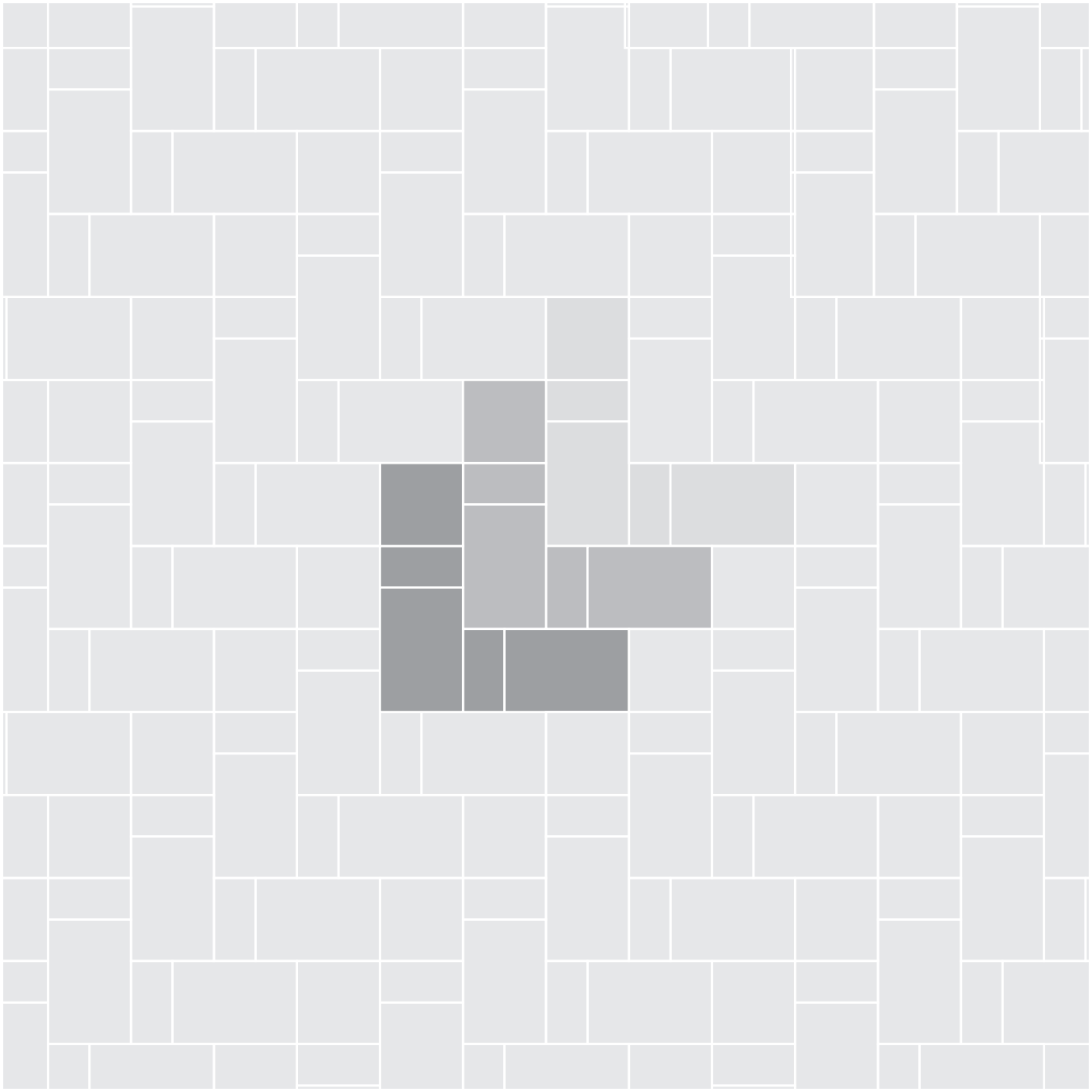
3-PIECE LARGE PATTERN E

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23%	12 x 12	23%	18 x 18
56%	12 x 18	56%	18 x 27



DUBLIN COBBLE®

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA
✓	✓			✓

SHAPES & SIZES

3-Piece | 60MM



2 15/16 x 5 15/16 x 2 3/8



5 15/16 x 5 15/16 x 2 3/8



5 15/16 x 8 7/8 x 2 3/8

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
3-PIECE | 60MM							
5 15/16 X 2 15/16 X 2 3/8	20.90	1.90	–	176	16	–	-
5 15/16 X 5 15/16 X 2 3/8	42.02	3.82	–	176	16	–	-
5 15/16 X 8 7/8 X 2 3/8	65.01	5.91	–	176	16	–	-
TOTAL	127.93	11.63	11	528	48	–	3440

DUBLIN COBBLE®

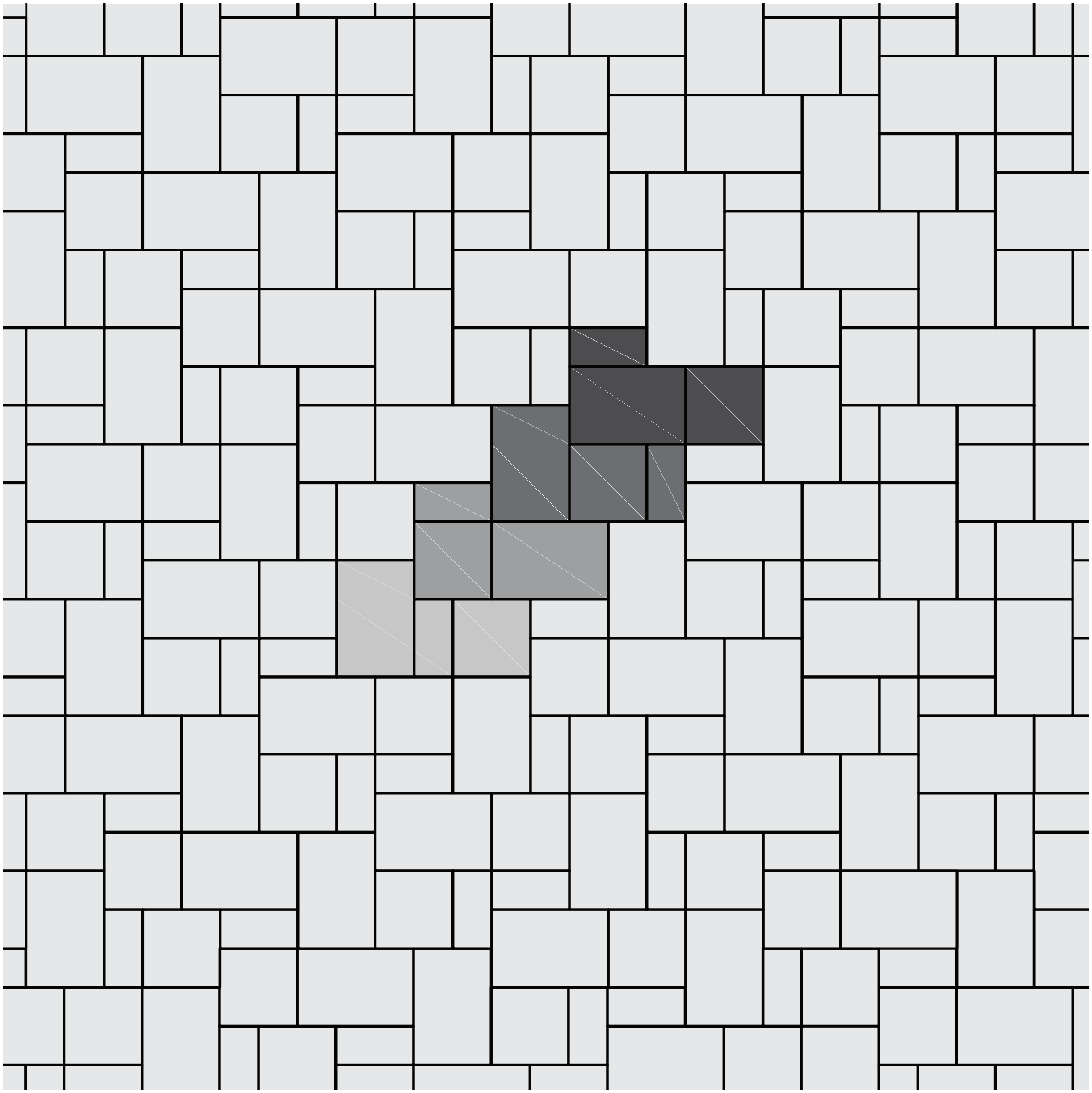
3-PIECE PATTERN

17% 2 15/16 x 5 15/16
33% 5 15/16 x 5 15/16
50% 5 15/16 x 8 7/8

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Percentages are based on area by paver.



DUBLIN COBBLE®

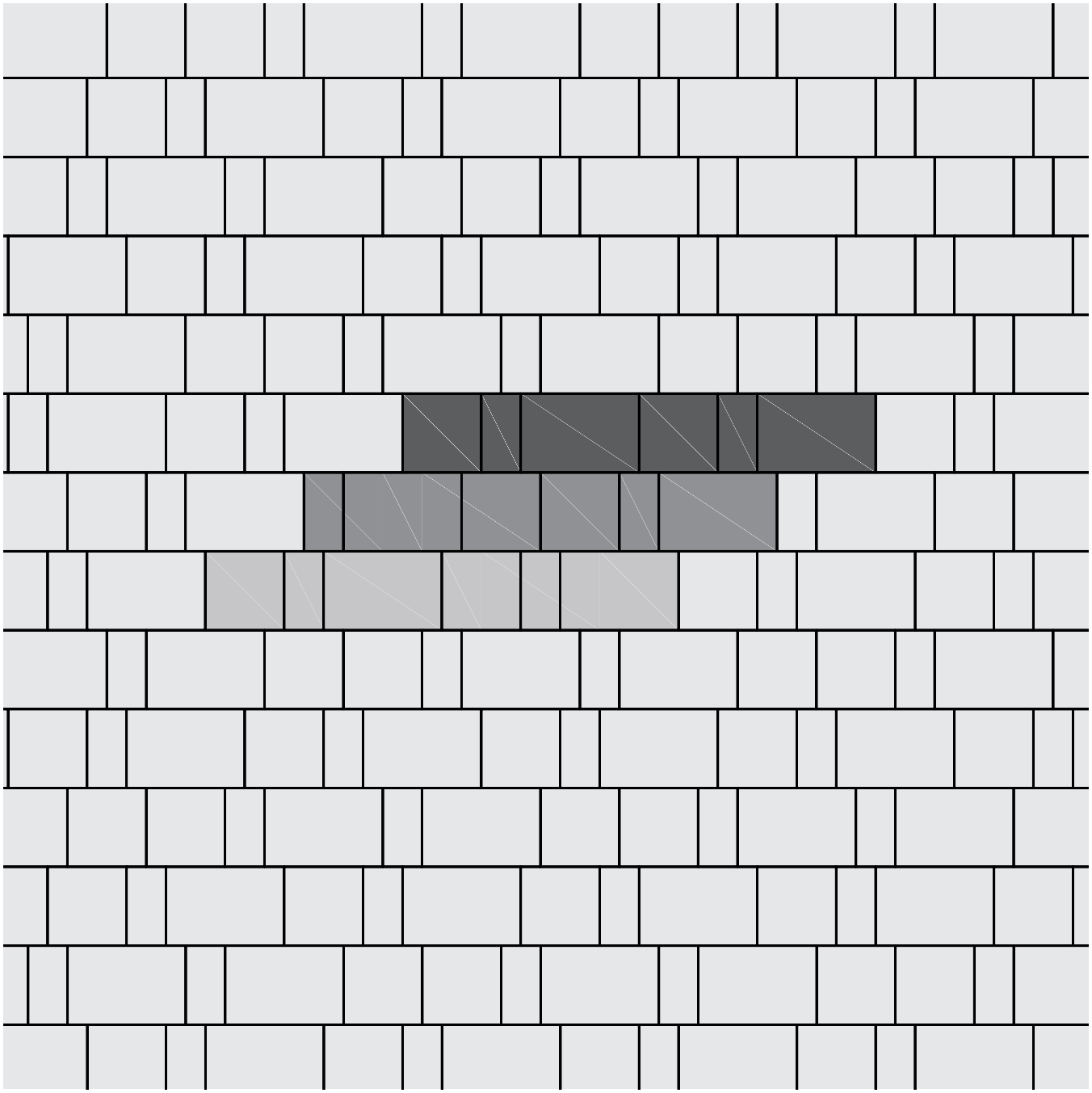
3-PIECE RUNNING BOND PATTERN

17% 2 15/16 x 5 15/16
33% 5 15/16 x 5 15/16
50% 5 15/16 x 8 7/8

NOTES:
AutoCAD® hatch pattern files can be downloaded from belgard.com for use in architectural drawings

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Percentages are based on area by paver.



HOLLAND STONE

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓	✓	80MM		✓	✓

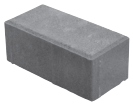
SHAPES & SIZES

60mm



3 15/16 x 7 7/8 x 2 3/8

Special Order 80mm



3 15/16 x 7 7/8 x 3 1/8

UNIT	SQFT/ PALLET	SQFT/ BAND	LAYER/ PALLET	UNITS/ PALLET	UNITS/ BAND	UNITS/ SQFT	WEIGHT/ PALLET
60MM							
3 15/16 X 7 7/8 X 2 3/8	120	20	6 BANDS	540	90	–	3285
80MM SPECIAL ORDER							
3 15/16 X 7 7/8 X 3 1/8	97	12	8	432	54	–	3188

HOLLAND STONE

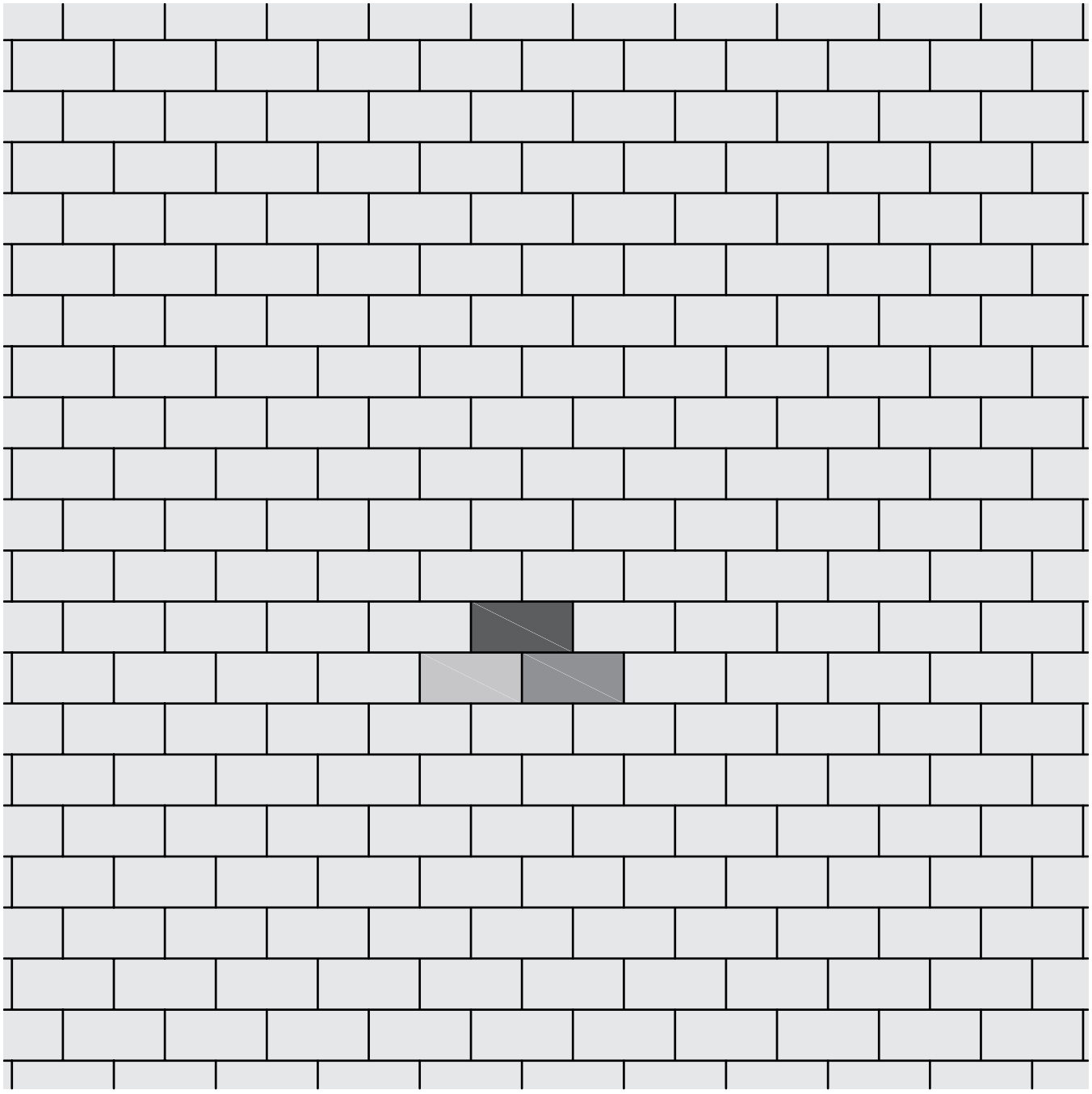
1-PIECE RUNNING BOND PATTERN

100% 3 15/16 X 7 7/8

NOTES:
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Percentages are based on area by paver.



HOLLAND STONE

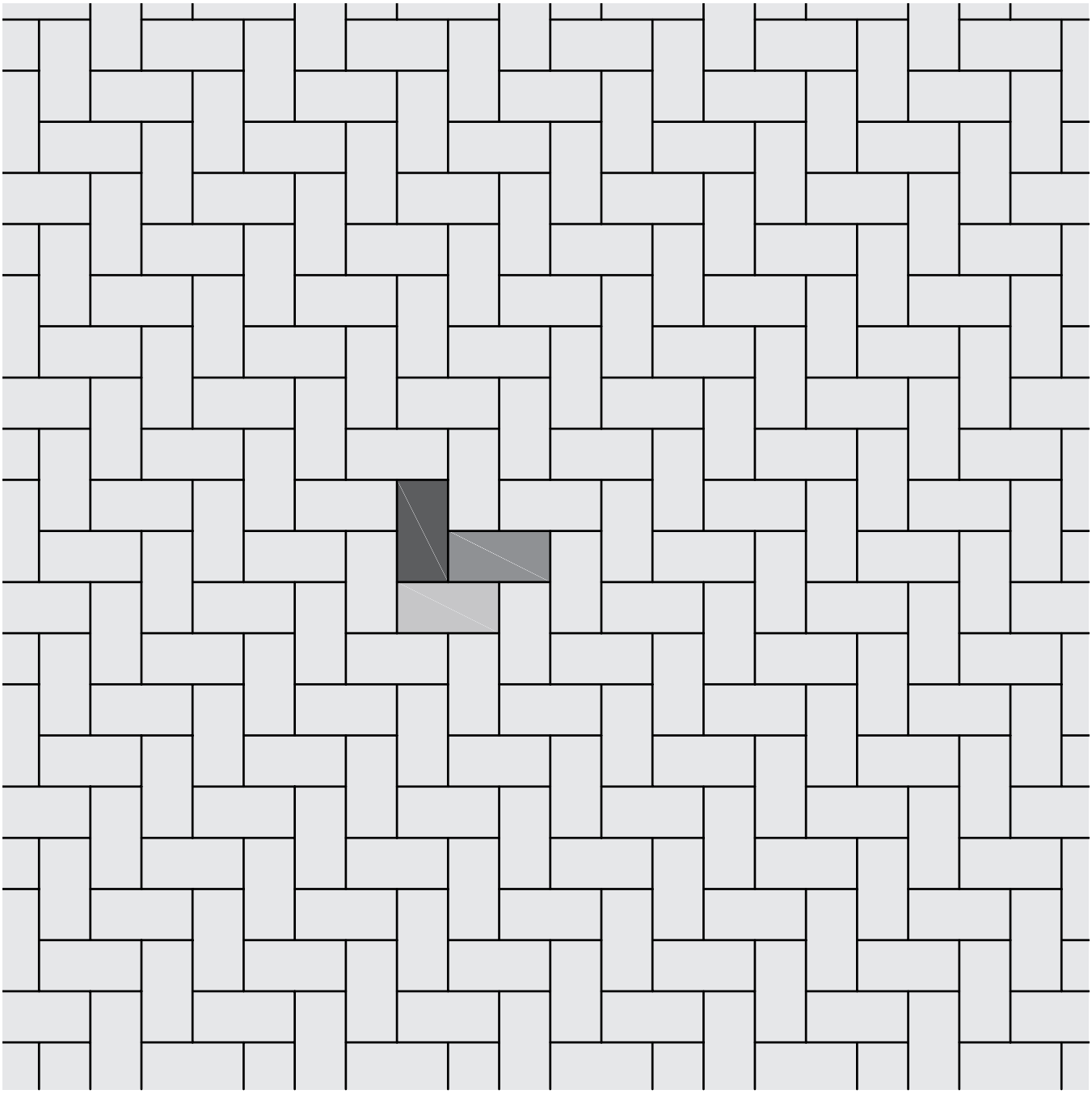
1-PIECE HERRINGBONE PATTERN

NOTES:
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Percentages are based on area by paver.

100% 3 15/16 X 7 7/8



HOLLAND STONE

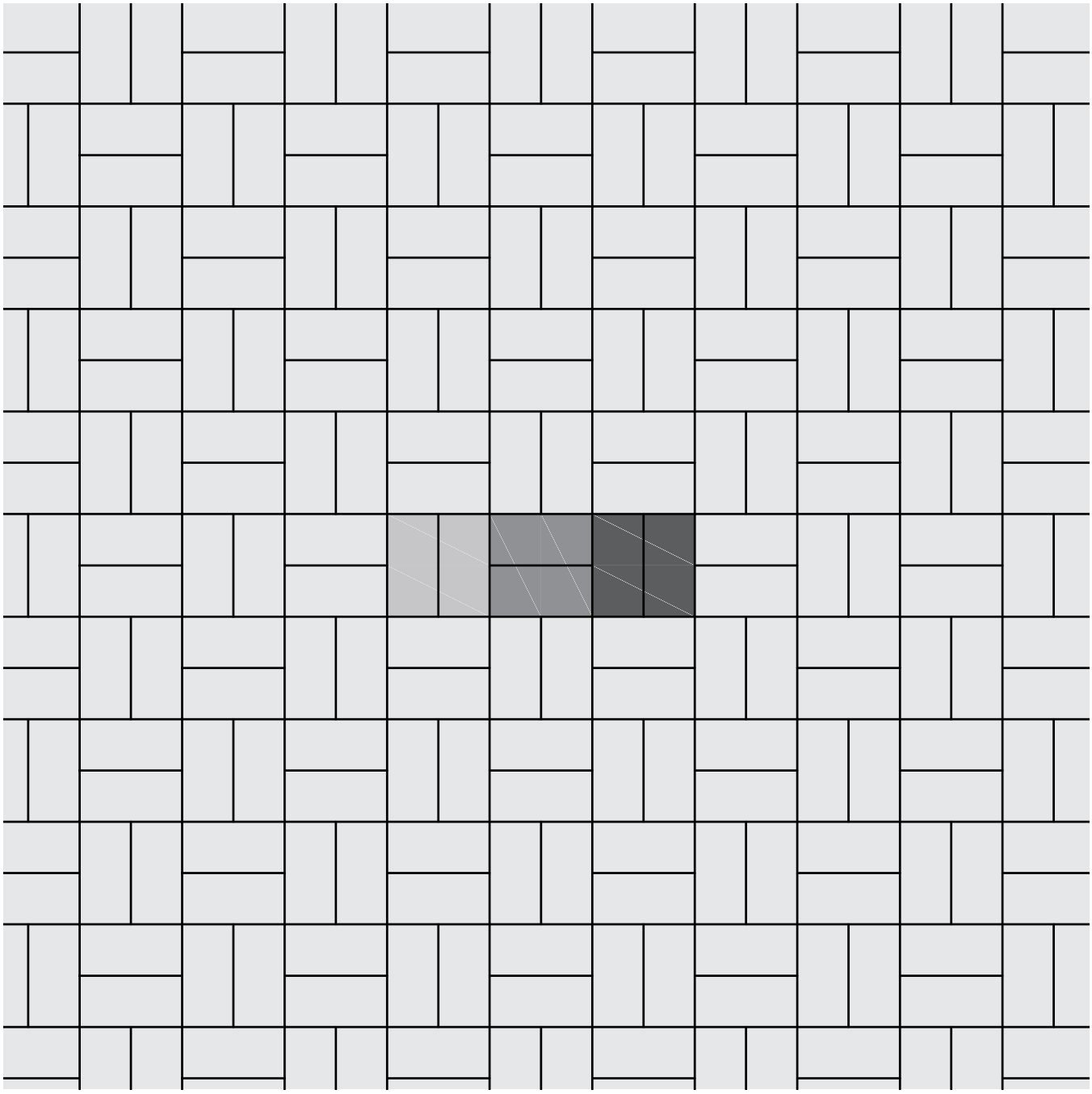
1-PIECE BASKET WEAVE PATTERN

100% 3 15/16 X 7 7/8

NOTES:
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Percentages are based on area by paver.



LONDON COBBLE®

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓	✓				✓

SHAPES & SIZES

Square



6 x 6 x 2⅜

Rectangle



6 x 9 x 2⅜

UNIT	SQFT/ PALLET	SQFT/ BAND	BAND/ PALLET	UNITS/ PALLET	UNITS/ BAND	UNITS/ SQFT	WEIGHT/ PALLET
SQUARE							
6 X 6 X 2⅜	120	15	8	480	60	–	3240
RECTANGLE							
6 X 9 X 2⅜	112	22.4	5	300	60	–	3024

LONDON COBBLE®

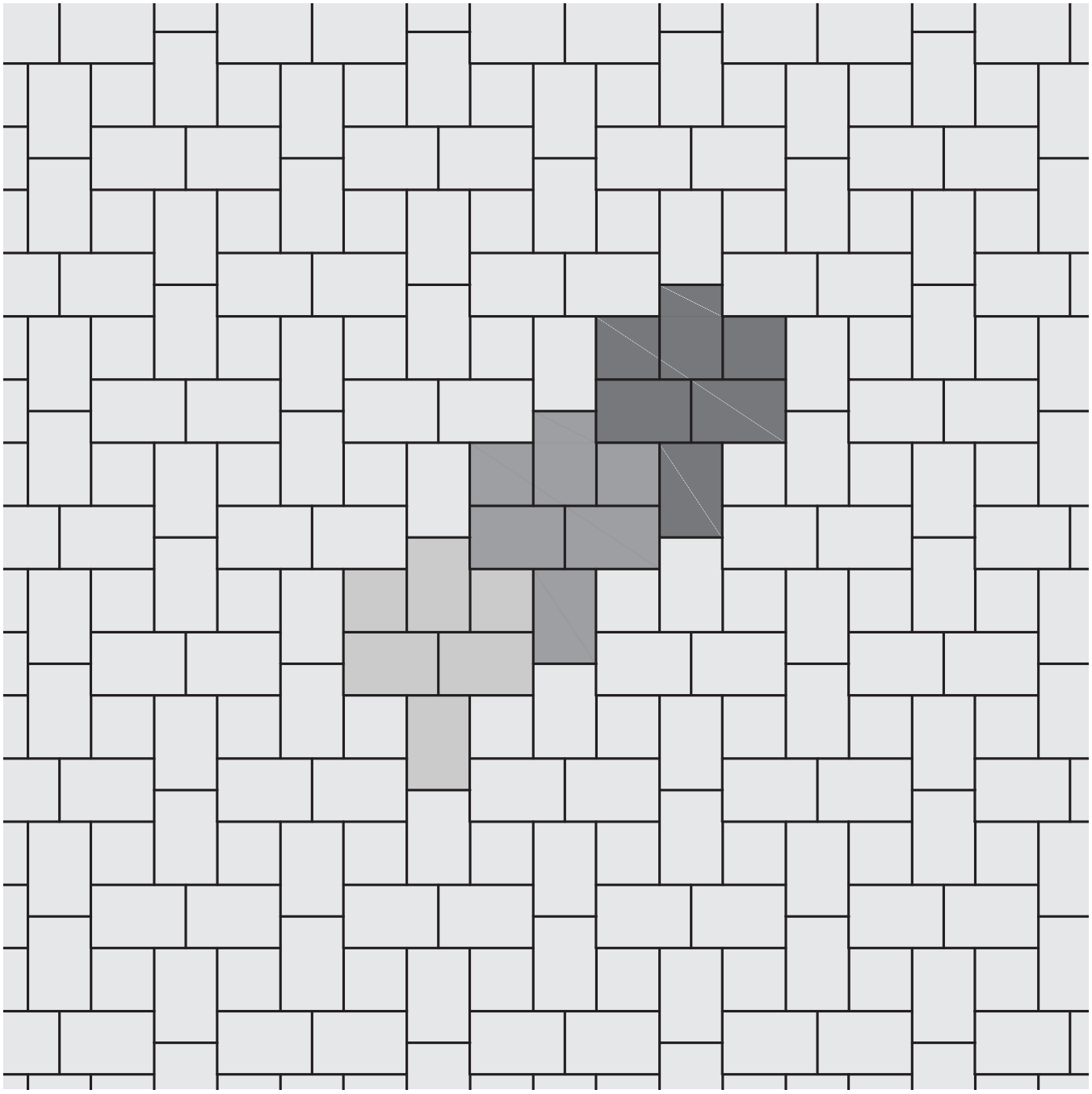
2-PIECE I-PATTERN

NOTES:
AutoCAD® hatch pattern files can be downloaded from belgard.com for use in architectural drawings

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Percentages are based on area by paver.

30% 6 x 6
70% 6 x 9



LONDON COBBLE®

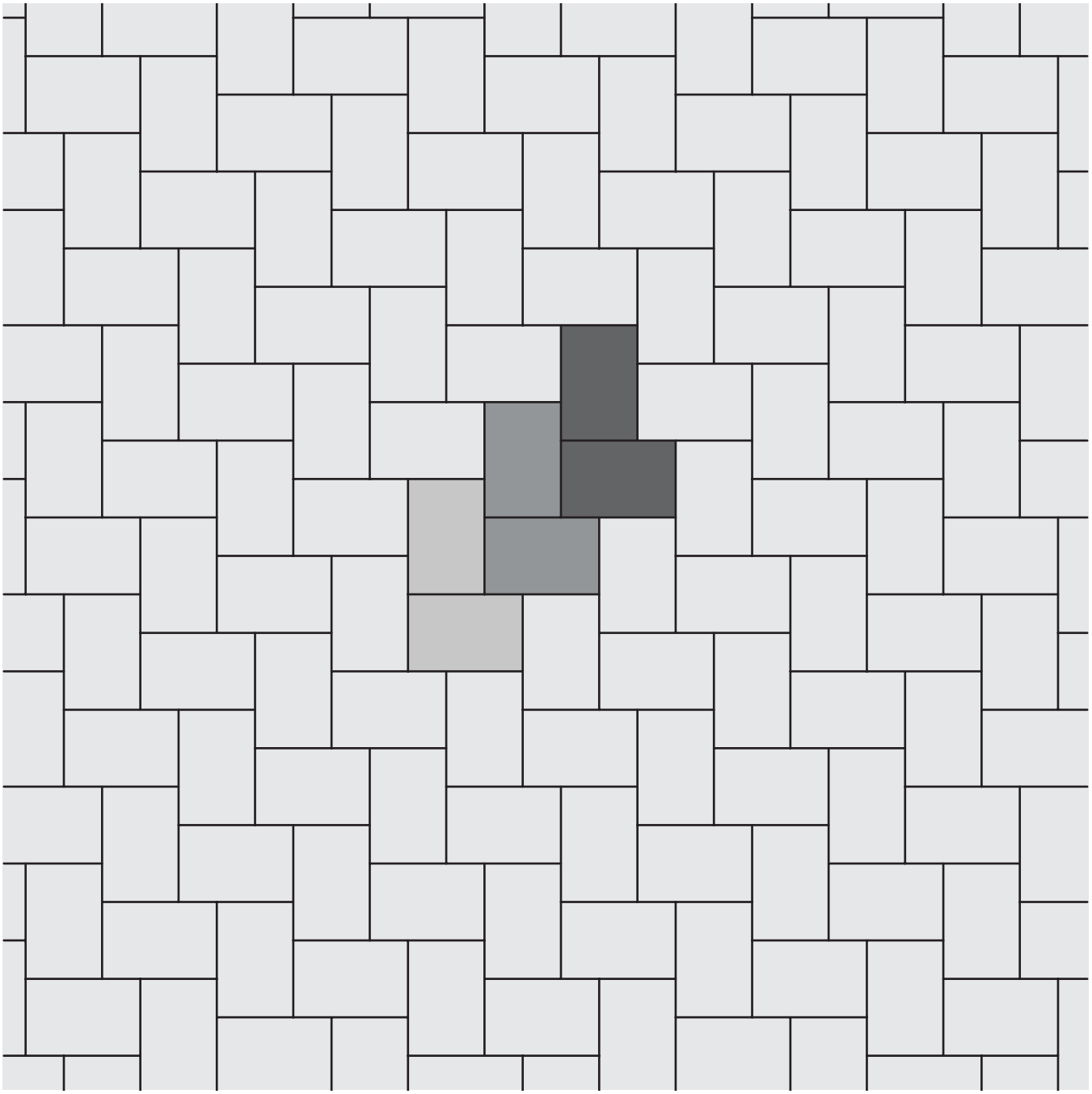
1-PIECE HERRINGBONE PATTERN

100% 6 x 9

NOTES:
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Percentages are based on area by paver.



LONDON COBBLE®

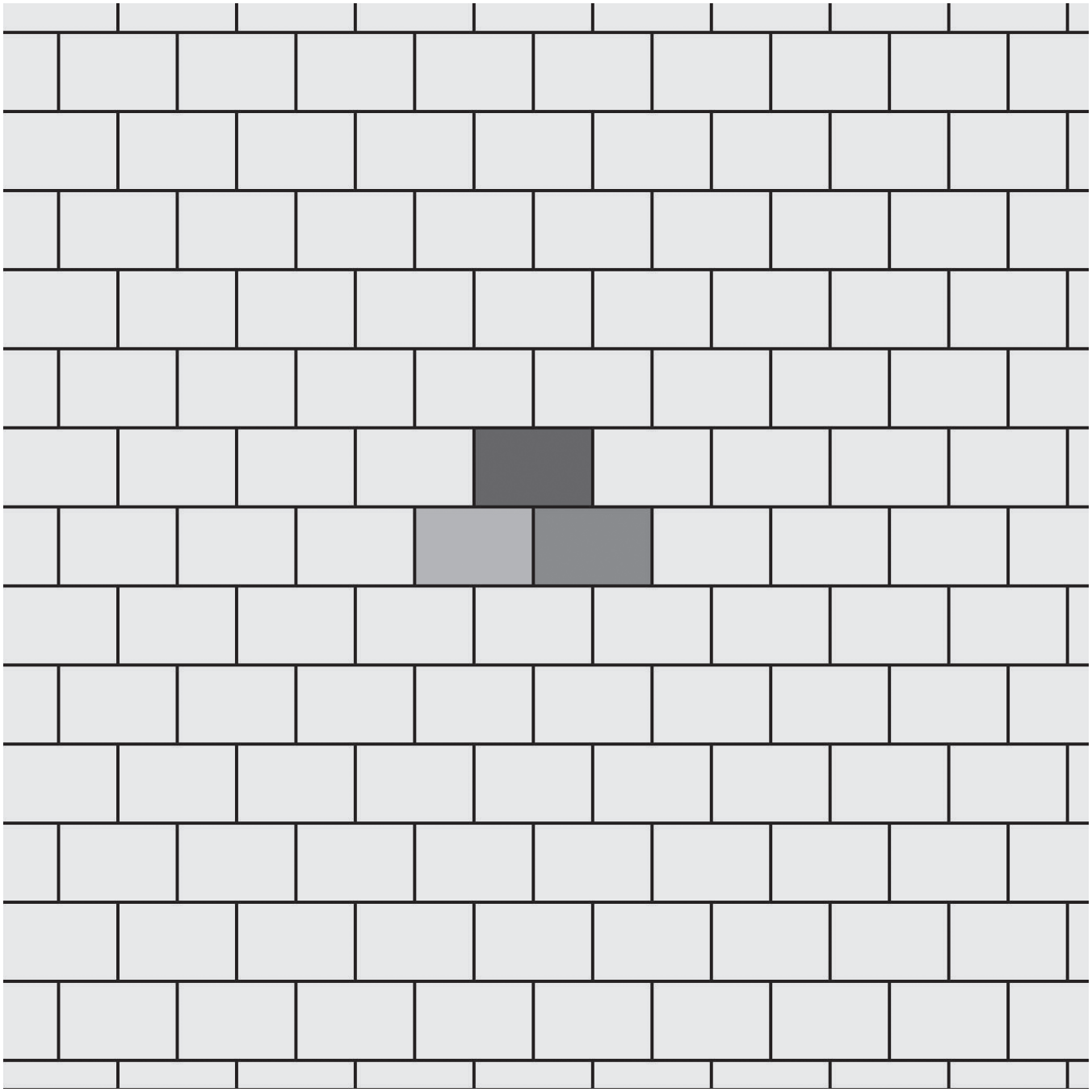
1-PIECE STACK BOND PATTERN

100% 6 x 9

NOTES:
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Percentages are based on area by paver.



MEGA-ARBEL®

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓	80MM				✓

SHAPES & SIZES

60mm



15⅜ x 21 x 2⅜

80mm Special Order



15⅜ x 21 x 3⅛

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
60MM							
15⅜ X 21 X 2⅜	104.4	8.69	12	72	6	–	2818
80MM SPECIAL ORDER							
15⅜ X 21 X 3⅛	77.4	8.6	9	54	6	–	2950

MEGA-ARBEL®

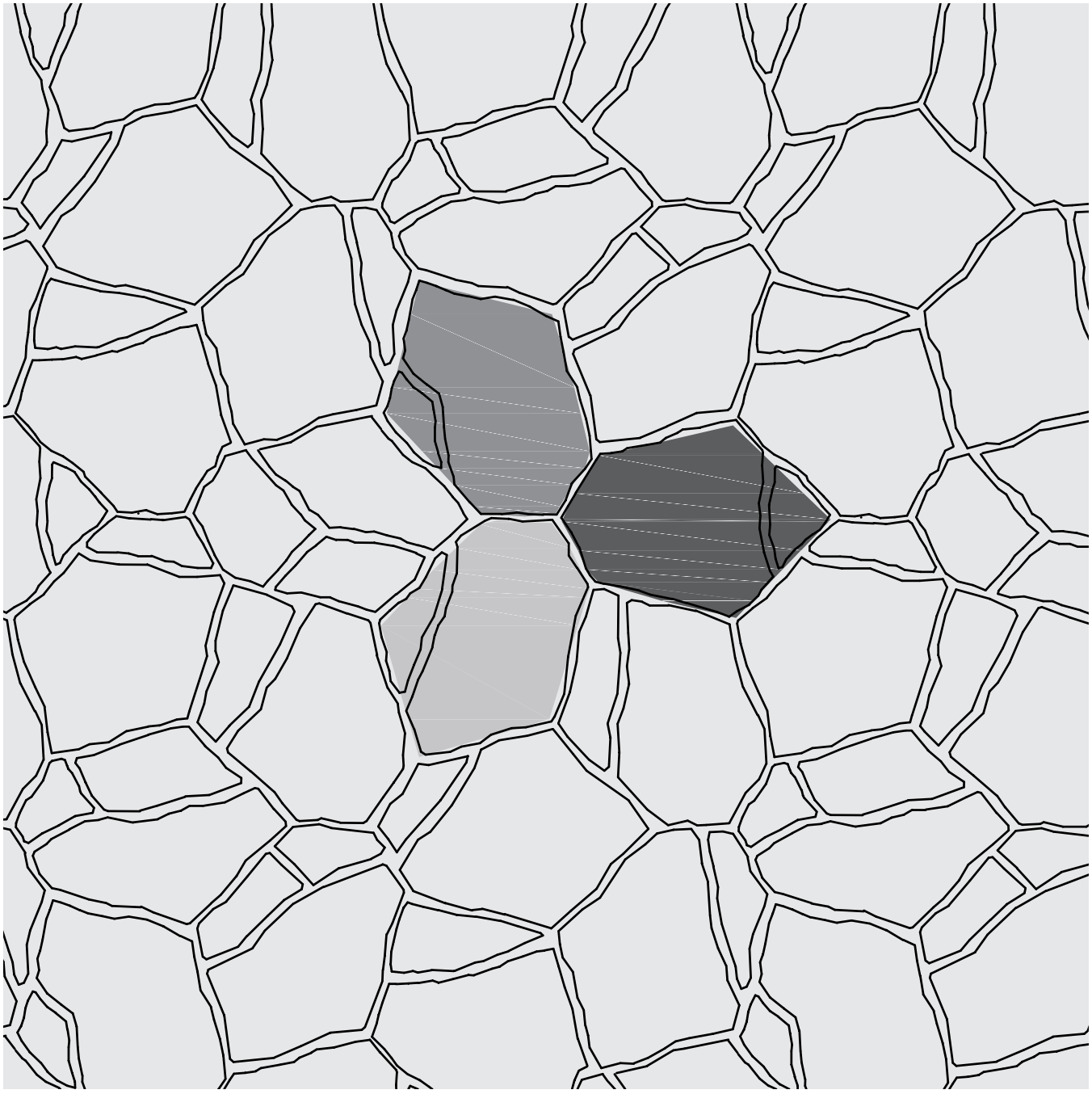
1-PIECE CLOVERLEAF PATTERN X

100% 15⅜ x 21

NOTES:
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Percentages are based on area by paver.



OLD WORLD PAVER™

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓	✓	✓	✓		

SHAPES & SIZES

3-Piece



5⅛ x 7¾ x 3⅛



5⅛ x 10¼ x 3⅛



5⅛ x 12¹³⁄₁₆ x 3⅛

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
3-PIECE							
5⅛ X 7¾ X 3⅛	–	–	–	88	11	–	-
5⅛ X 10¼ X 3⅛	–	–	–	96	12	–	-
5⅛ X 12¹³⁄₁₆ X 3⅛	–	–	–	72	9	–	-
TOTAL	90.27	11.28	8	256	–	–	3250

OLD WORLD PAVER®

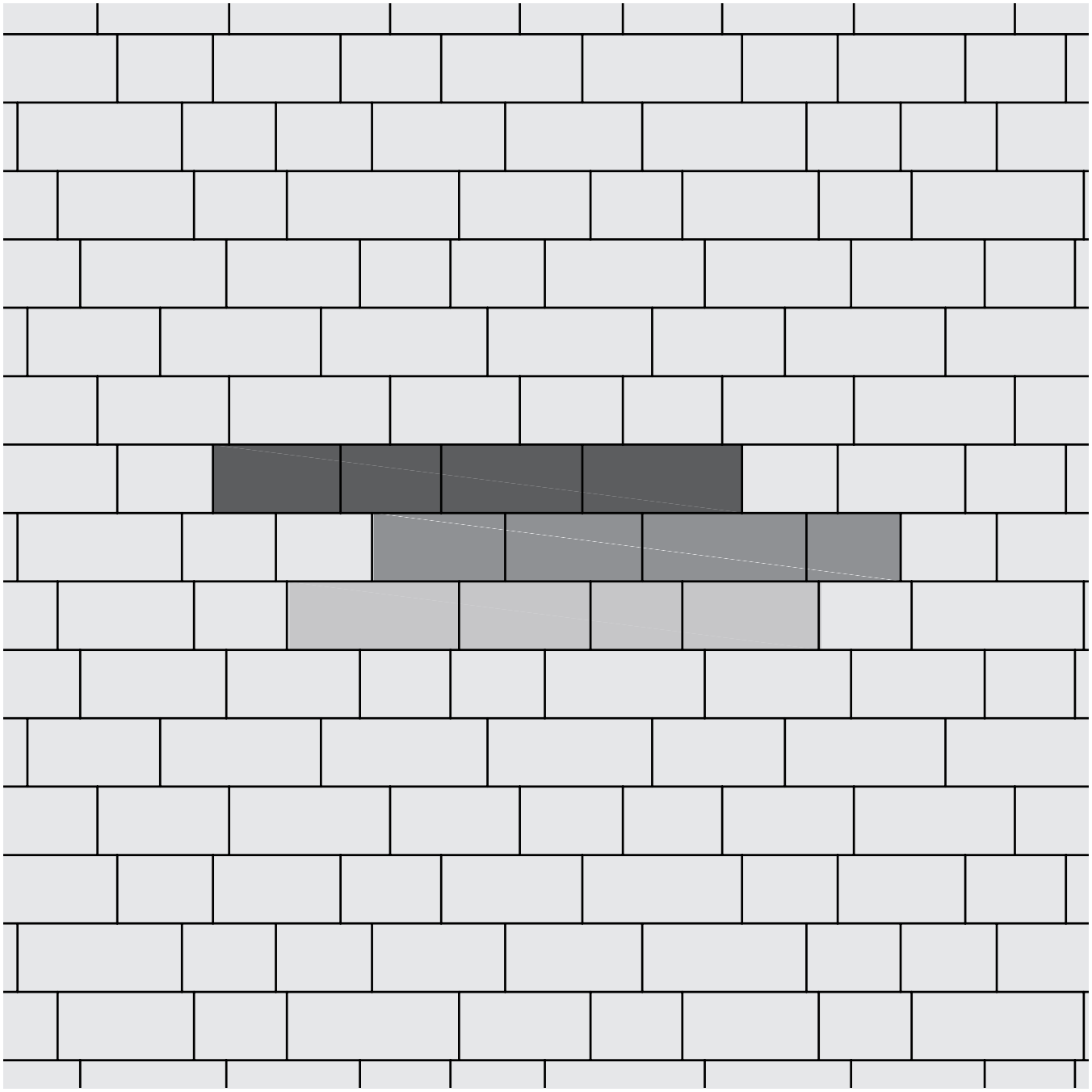
3-PIECE RUNNING BOND PATTERN

25% 5⅛ x 7¾
75% 5⅛ x 10¼
75% 5⅛ x 12 13/16

NOTES:
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Percentages are based on area by paver.



OLD YORK™

NOTE: Old York™ can be used as a permeable paver.

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓	✓		✓		✓

SHAPES & SIZES

1-Piece



3 15/16 x 7⅞ x 2⅜

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
1-PIECE							
3 15/16 X 7⅞ X 2⅜	120	12	10	540	54	–	3250
TOTAL	120	12	10	540	–	–	3250

OLD YORK™

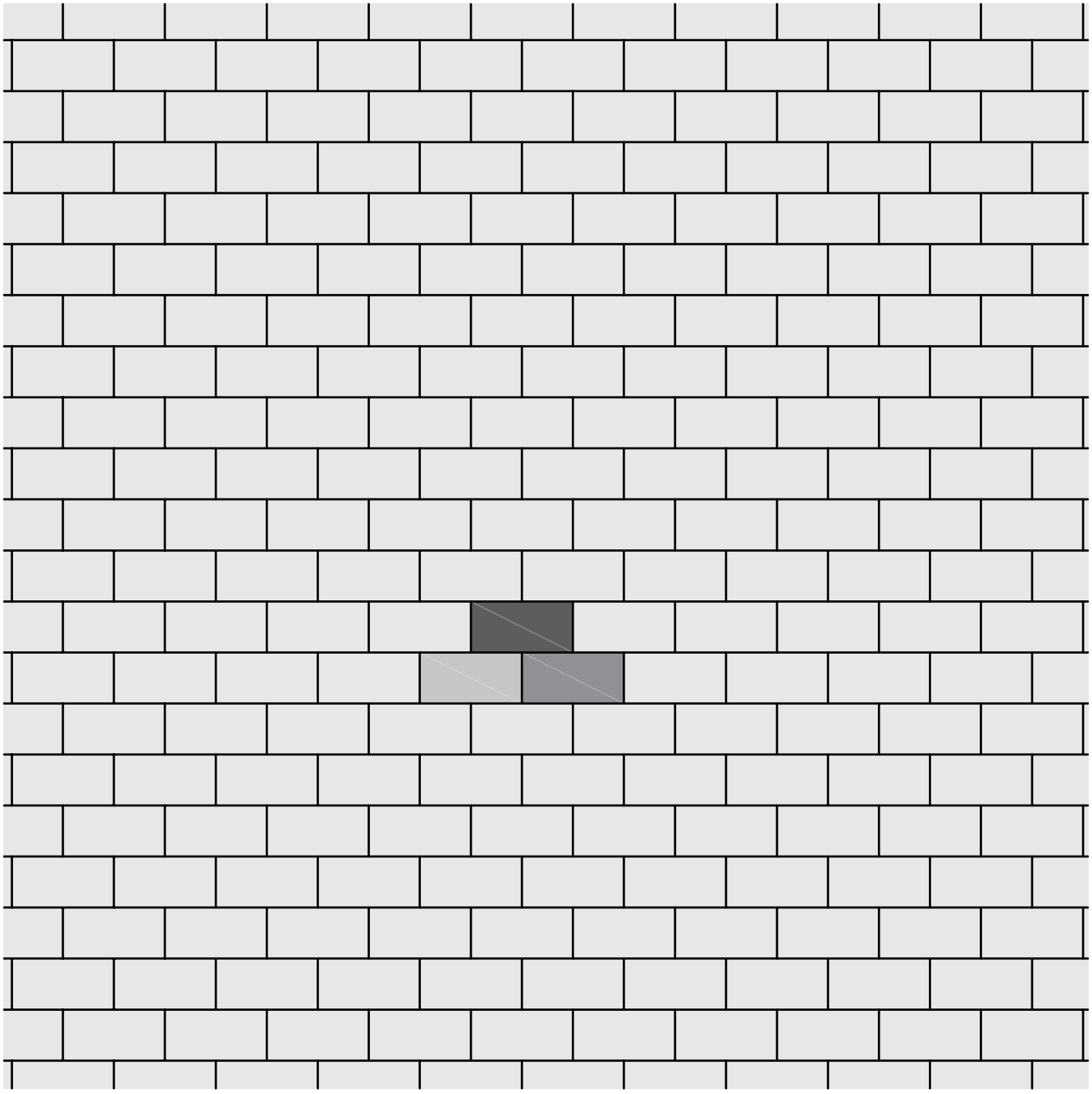
1-PIECE RUNNING BOND PATTERN

100% 3 15/16 X 7 7/8

NOTES:
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Percentages are based on area by paver.



OLD YORK™

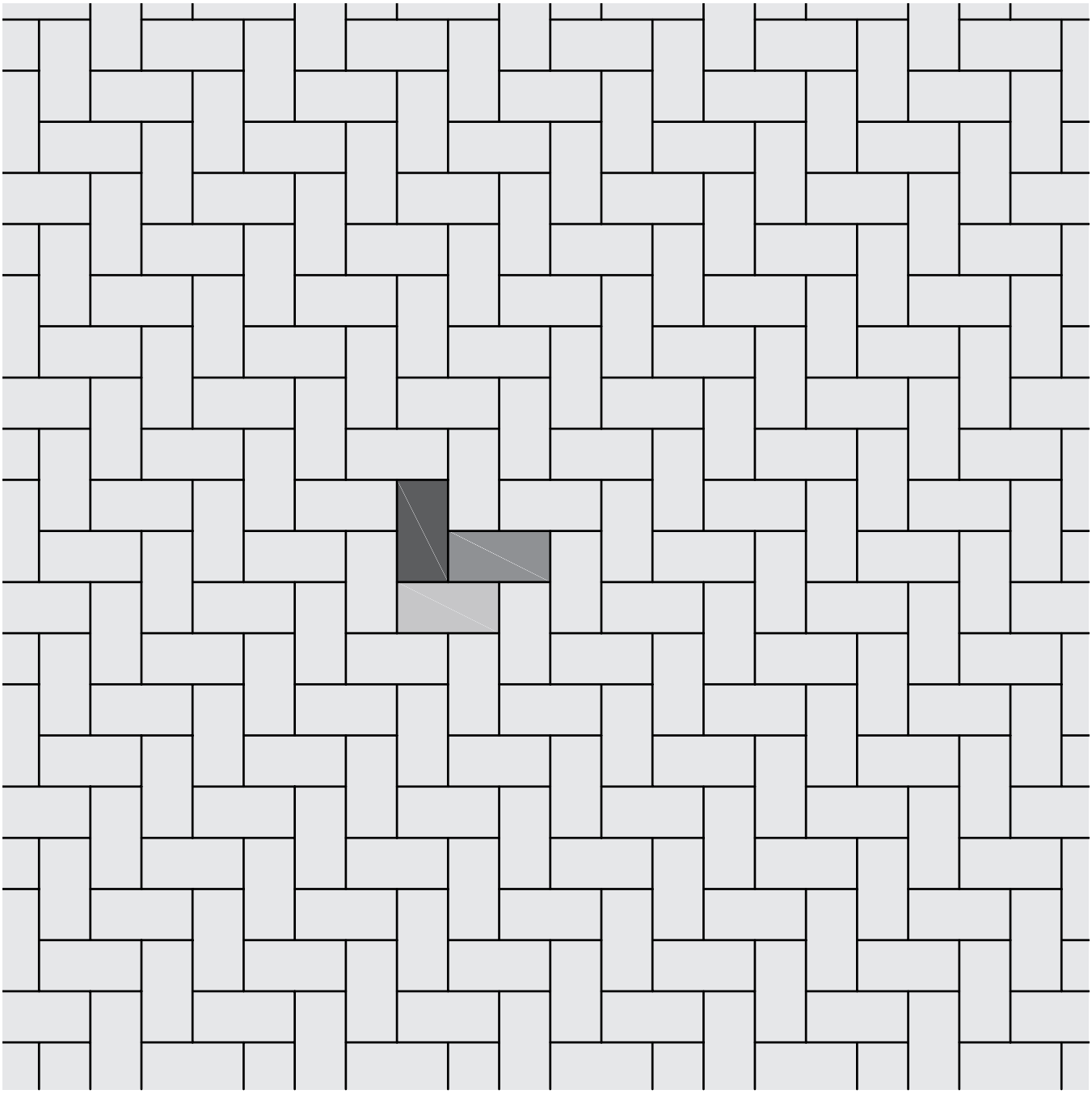
1-PIECE HERRINGBONE PATTERN

100% 3 15/16 X 7 7/8

NOTES:
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Percentages are based on area by paver.



OLD YORK™

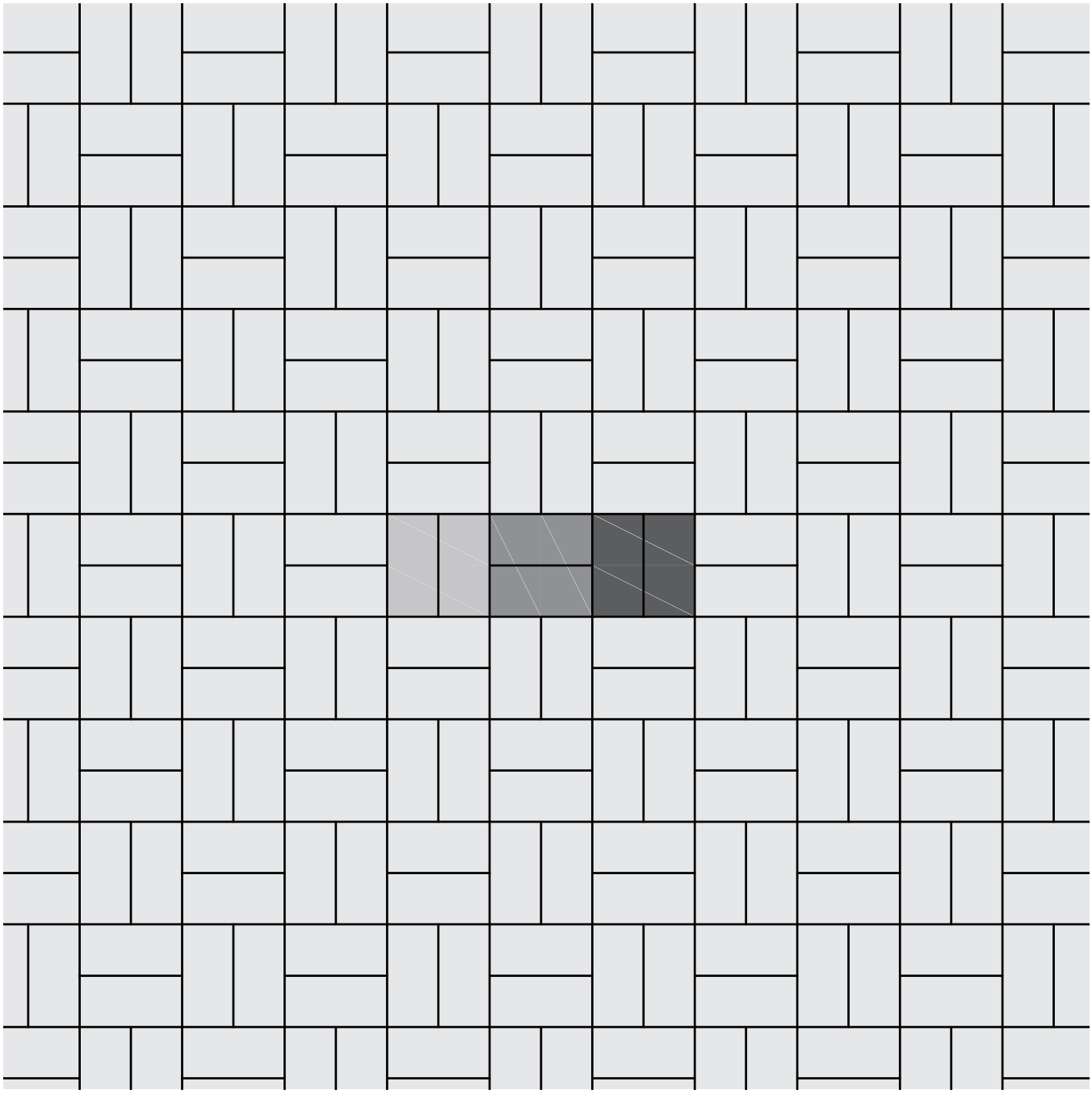
1-PIECE BASKET WEAVE PATTERN

100% 3 15/16 X 7 7/8

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Percentages are based on area by paver.



NEW
ORIGINS™ *6*

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓	✓				✓

SHAPES & SIZES

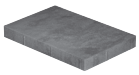
ORIGINS*6* | 60mm



3 x 6 x 2⅜



6 x 6 x 2⅜



6 x 9 x 2⅜

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
ORIGINS*6* | 60MM							
3 X 6 X 2⅜	20	2	–	160	16	–	-
6 X 6 X 2⅜	40	4	–	160	16	–	-
6 X 9 X 2⅜	60	6	–	160	16	–	-
TOTAL	120	12	10	480	–	–	3216

NEW
ORIGINS™ *12*

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓					✓

SHAPES & SIZES

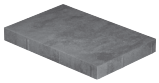
ORIGINS*12* | 60mm



6 x 12 x 2⅜



12 x 12 x 2⅜



12 x 18 x 2⅜

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
ORIGINS*12* | 60MM							
6 X 12 X 2⅜	20	2	–	40	4	–	-
12 X 12 X 2⅜	40	4	–	40	4	–	-
12 X 18 X 2⅜	60	6	–	40	4	–	-
TOTAL	120	12	10	120	12	–	3260

NEW
ORIGINS™ *18*

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓					✓

SHAPES & SIZES

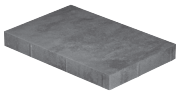
ORIGINS*18* | 60mm



9 x 18 x 2⅜



18 x 18 x 2⅜



18 x 27 x 2⅜

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
ORIGINS*18* | 60MM							
9 X 18 X 2⅜	22.5	2.25	–	20	2	–	-
18 X 18 X 2⅜	22.5	2.25	–	10	1	–	-
18 X 27 X 2⅜	67.5	6.75	–	20	2	–	-
TOTAL	112.5	11.25	10	50	–	–	3075

NEW
ORIGINS™ ACCENTS

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓	✓				✓

SHAPES & SIZES

1-Piece



6 x 9 x 2⅜

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
1-PIECE							
6 X 9 X 2⅜	120	12	10	320	32	–	3232

ORIGINS™

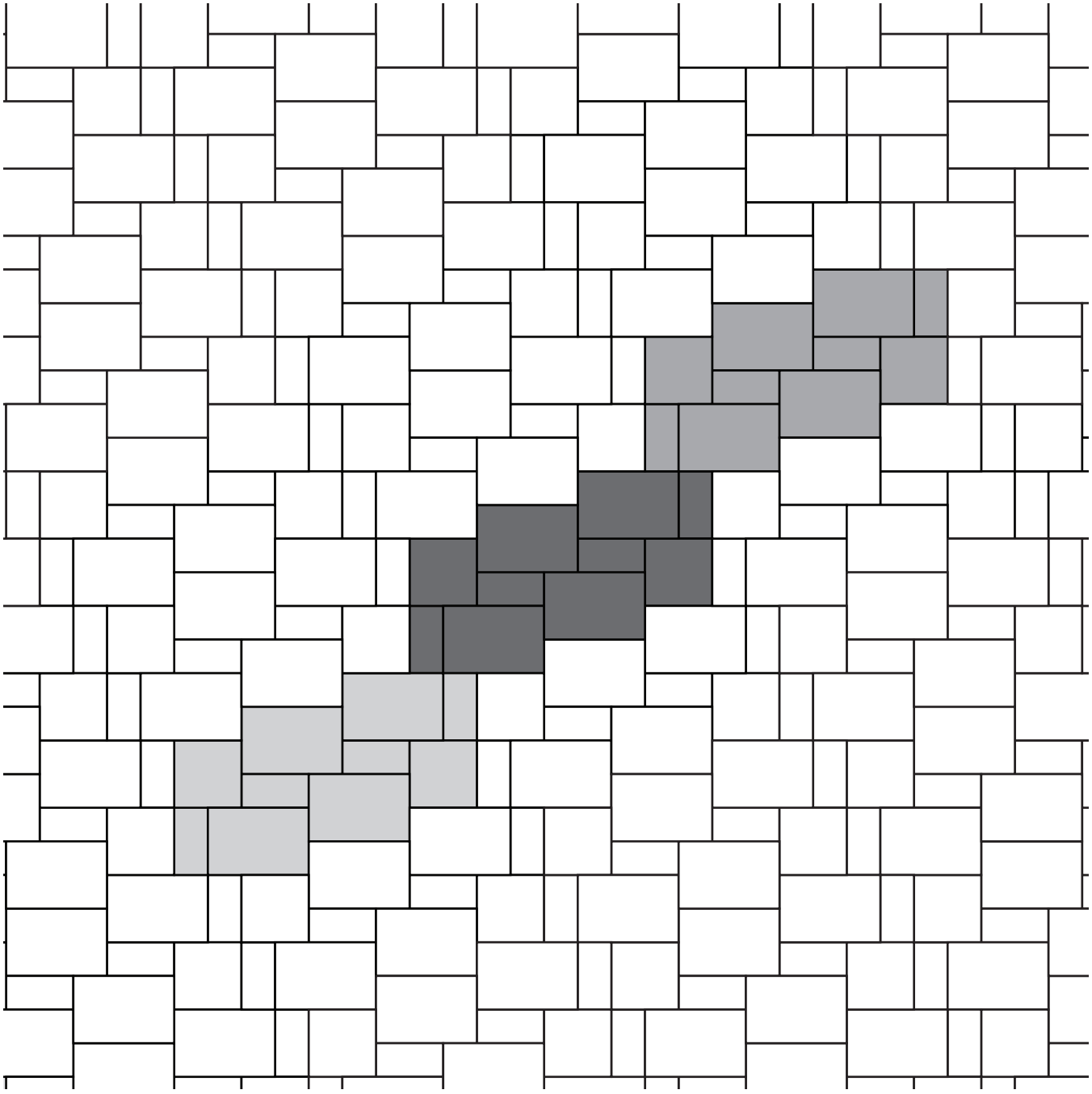
3-PIECE PATTERN A

NOTES:
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Some patterns may not necessarily reflect the percentages of stone sizes within a particular pallet. In some cases you may have extras in one or more of the sizes. This must be accounted for in your planning and design.

Percentages are based on area by paver.

21% 3 x 6	21% 6 x 12	21% 9 x 18
23% 6 x 6	23% 12 x 12	23% 18 x 18
56% 6 x 9	56% 12 x 18	56% 18 x 27



ORIGINS™

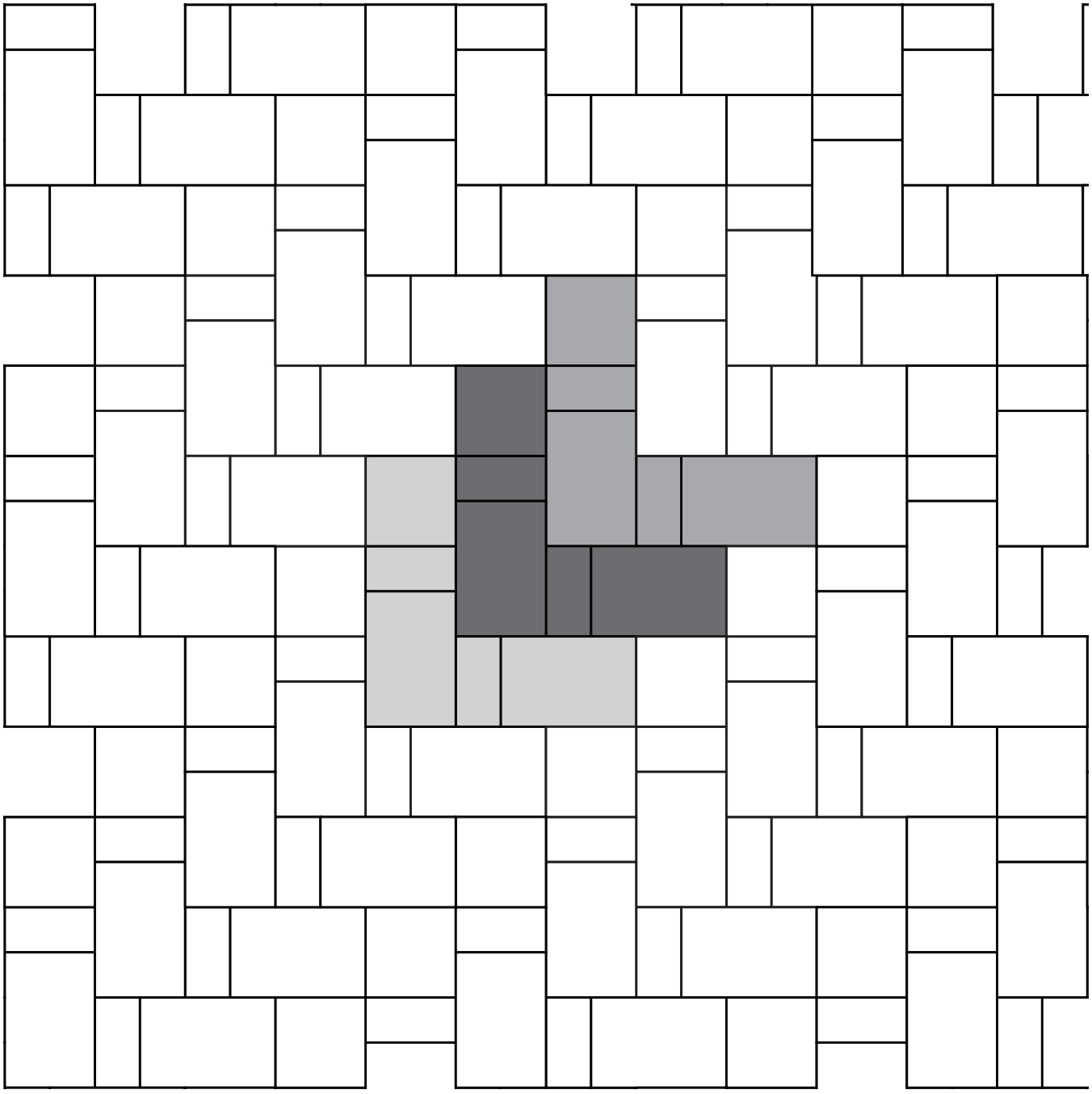
3-PIECE PATTERN E

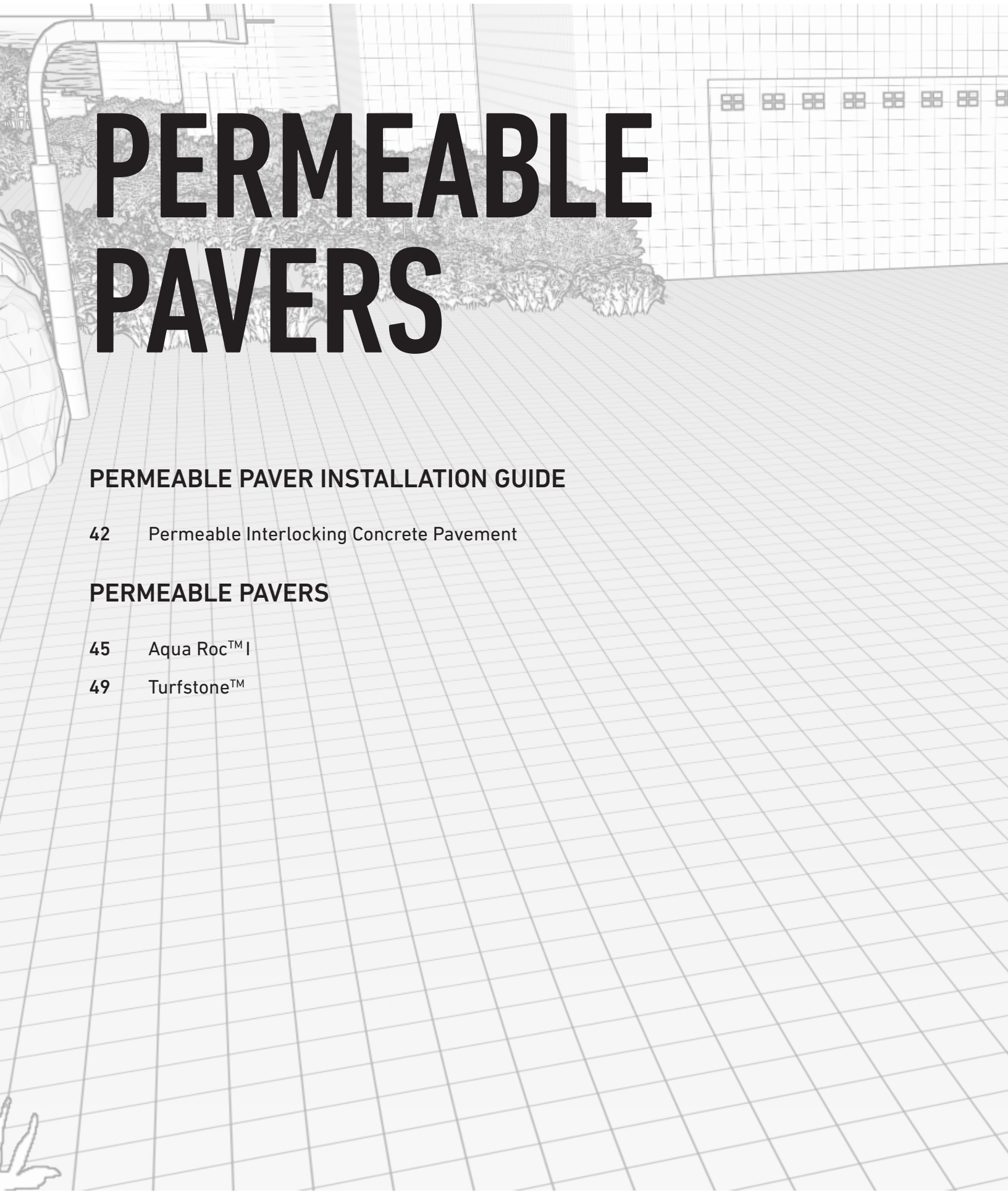
NOTES:
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Percentages are based on area by paver.

21% 3 x 6	21% 6 x 12	21% 9 x 18
23% 6 x 6	23% 12 x 12	23% 18 x 18
56% 6 x 9	56% 12 x 18	56% 18 x 27





PERMEABLE PAVERS

PERMEABLE PAVER INSTALLATION GUIDE

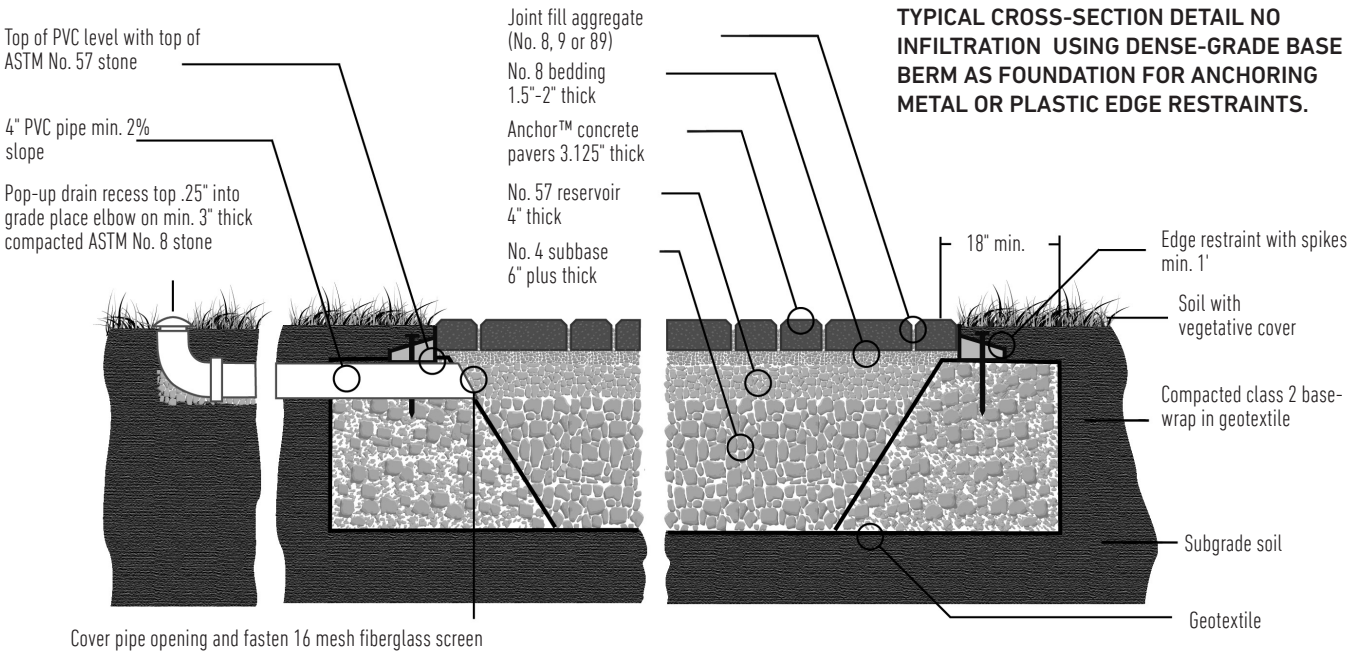
42 Permeable Interlocking Concrete Pavement

PERMEABLE PAVERS

45 Aqua Roc™ I

49 Turfstone™

PERMEABLE INTERLOCKING CONCRETE PAVEMENT (PICP)



TYPICAL CROSS-SECTION DETAIL NO INFILTRATION USING DENSE-GRADE BASE BERM AS FOUNDATION FOR ANCHORING METAL OR PLASTIC EDGE RESTRAINTS.

INSTALL GEOTEXTILES, IMPERMEABLE LINERS AND DRAIN PIPES IF REQUIRED IN THE PLANS AND SPECIFICATIONS

Geotextiles are used in some permeable pavement applications per the design engineer. If there are no concrete curbs and soil is restraining the sides of the base/subbase at its perimeter, then geotextile should be applied to prevent lateral migration of soil into the base/subbase aggregates. Geotextile is applied vertically against the soil with at least 1 foot (0.3 m) extending horizontally under the subbase and resting on the soil subgrade. A minimum 1-foot (0.3 m) overlap is recommended in stronger subgrade soils and 2-feet (0.6 m) overlap on poor-draining weaker soils (CBR<5%).

Drain pipes are installed according to plans and specifications and should be rigid PVC. Designs should have curb cut-outs or drain pipes from the PICP entering swales or storm sewer catch basins to handle overflow conditions.



Use 13,500 lbf (60 kN) plate compactor minimum two passes.

Place and compact the aggregate subbase

Subbase material should be spread in minimum 6-inch (150 mm) lifts. Compaction is typically done with a 10 ton (9 T) steel vibratory roller or a 13,500 lbf (60 kN) plate compactor. Greater lift thicknesses are normal (e.g., 12 inch or 0.3 m) when using either of these compactors. When using a roller, the first two passes are in vibratory mode and the last two are in static mode. Compaction is completed when no visible movement can be seen in the base when rolled by the compactor.

INSTALL CURBS OR OTHER EDGE RESTRAINTS

For pedestrian areas and residential driveways, an edge restraint option is using compacted, dense-graded berms around PICP base perimeter with plastic or metal edging fastened to their surface. The dense-graded base is a foundation for metal or plastic edging secured with steel spikes. These edge restraints are installed on the dense-graded berms in a manner identical to those on interlocking concrete pavement driveways. The edge restraint contains some of the bedding layer such that at least the bottom half of the pavers is also contained by the edging.

Place and compact the aggregate base

The ASTM No. 57 base layer is spread and compacted as one 4-inch (100 mm) lift. Like the subbase aggregate, the initial passes with the roller can be with vibration to consolidate the base material or a plate compactor also

can be used to compact the No. 57 base layer. Surface tolerance of the compacted No. 57 stone shall be ± 3⁄4-inch (19 mm) over a 10 feet (3 m) straightedge.

Place and screed the bedding layer

When subbase and base lifts are compacted the surface should then be topped with a 1 1⁄2- to 2-inch (50 mm) thick layer of No. 8 crushed stone bedding. This layer is screeded and leveled over the No. 57 base. Metal rails are placed on the compacted No. 57 layer and are used to guide screeding elevations. The surface tolerance of the screeded No. 8 bedding material should be ±3⁄8-inch over 10 feet (±10 mm over 3 m). Install the pavers manually or with mechanical installation equipment.



Manually screeding the No. 8 stone setting bed.

Geotextiles are used in some permeable pavement applications per the design engineer. If there are no concrete curbs and soil is restraining the sides of the base/subbase at its perimeter, then geotextile should be applied to prevent lateral migration of soil into the base/subbase aggregates. Geotextile is applied vertically against the soil with at least 1 foot (0.3 m) extending horizontally under the subbase and resting on the soil subgrade. A minimum 1-foot (0.3 m) overlap is recommended in stronger subgrade soils and 2-feet (0.6 m) overlap on poor-draining weaker soils (CBR<5%).

Drain pipes are installed according to plans and specifications and should be rigid PVC. Designs should have curb cut-outs or drain pipes from the PICP entering swales or storm sewer catch basins to handle overflow conditions.

Place and compact the aggregate subbase

Subbase material should be spread in minimum 6-inch (150 mm) lifts. Compaction is typically done with a 10 ton (9 T) steel vibratory roller or a 13,500 lbf (60 kN) plate compactor. Greater lift thicknesses are normal (e.g., 12 inch or 0.3 m) when using either of these compactors. When using a roller, the first two passes are in vibratory mode and the last two are in static mode. Compaction is completed when no visible movement can be seen in the base when rolled by the compactor.



PICP paver compaction shows that pavers need to be set about 3/4-inch (19 mm) above their final elevation before compaction and 3/8-inch (10 mm) after compaction to account for downward movement.

After screeding the bedding material, the pavers are placed on this layer. Paver installation can be by hand or with mechanical equipment. Border courses consisting of mostly whole (uncut) pavers are typically used against curbs at PICP edges and at transitions to other pavement surfaces. Paving units abutting border courses should be cut to fill spaces prior to compaction. Cuts should provide gaps around the entire perimeter of the stone that are consistent with the typical joint size — this will allow for proper interlock between units and prevent direct paver-on-paver contact. Cut units should be no smaller than one-third of a whole unit if subject to vehicular traffic.

Fill the paver joints and sweep the surface clean

The paver joints are filled with ASTM No. 8, 9 or 89 stone. Depending on the PICP area, spreading and sweeping can be done with shovels and brooms, or larger areas with machines, sweeping into the paver joints with powered brooms or sweepers. Once the joints are full (within 1⁄4-inch or 6 mm of the paver surface), the surface must be swept clean prior to compaction as loose stones on the surface can mar the pavers when in contact with a plate compactor.

Compact the pavers

After the PICP surface is swept clean, compact it with a plate compactor. Make a minimum of two passes with the second pass in a perpendicular direction from the first pass. The plate compactor should exert a minimum 5,000 lbf (22 kN) at
75-90 Hz.

Top up joints with joint filling stone as needed and sweep the surface clean

Compaction can cause some settlement of the aggregates inside the joints. If the aggregates are more than 1/4-inch (6 mm) from the paver surface, they should be topped up to this level with additional aggregates.

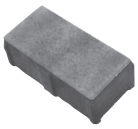
Additional resources and technical specifications online at www.icpi.org.
Source: ICPI Tech Spec, issue number 18

AQUA ROC™ I

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA
✓	✓	✓	✓	

SHAPES & SIZES

80MM



4½ x 9 x 3⅛

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
80MM							
4½ X 9 X 3⅛	90	11.25	8	320	40	–	3000
TOTAL	90	11.25	8	320	–	–	3000

AQUA ROC™ I

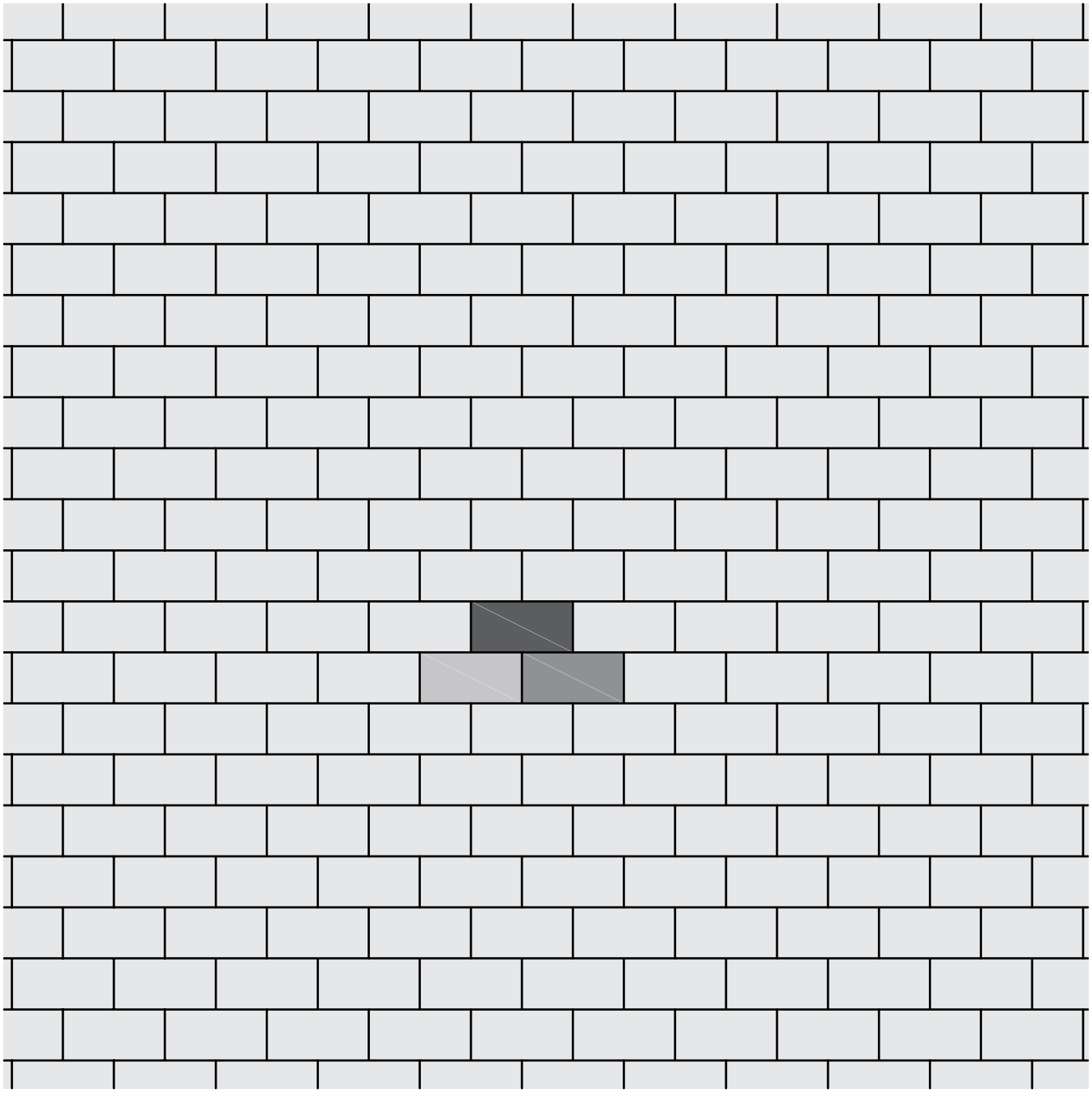
1-PIECE RUNNING BOND PATTERN

100% 4½ x 9

NOTES:
AutoCAD® hatch pattern files can be downloaded from belgard.com for use in architectural drawings

Some patterns may not necessarily reflect the percentages of stone sizes within a particular pallet. In some cases you may have extras in one or more of the sizes. This must be accounted for in your planning and design.

Percentages are based on area by paver.



AQUA ROC™ I

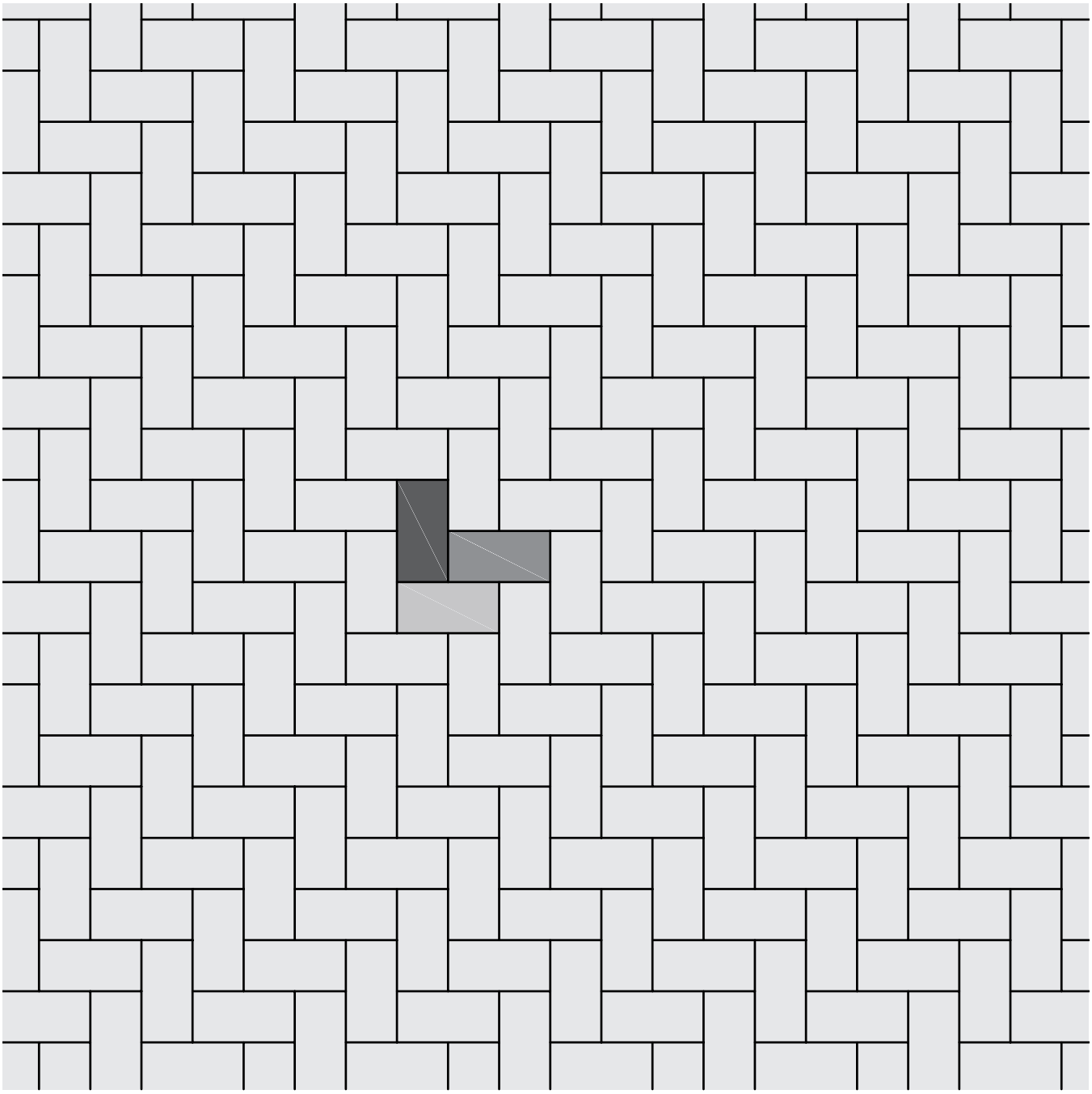
1-PIECE RUNNING BOND PATTERN

100% 4½ x 9

NOTES:
AutoCAD® hatch pattern files can be downloaded from belgard.com for use in architectural drawings

Some patterns may not necessarily reflect the percentages of stone sizes within a particular pallet. In some cases you may have extras in one or more of the sizes. This must be accounted for in your planning and design.

Percentages are based on area by paver.



AQUA ROC™ I

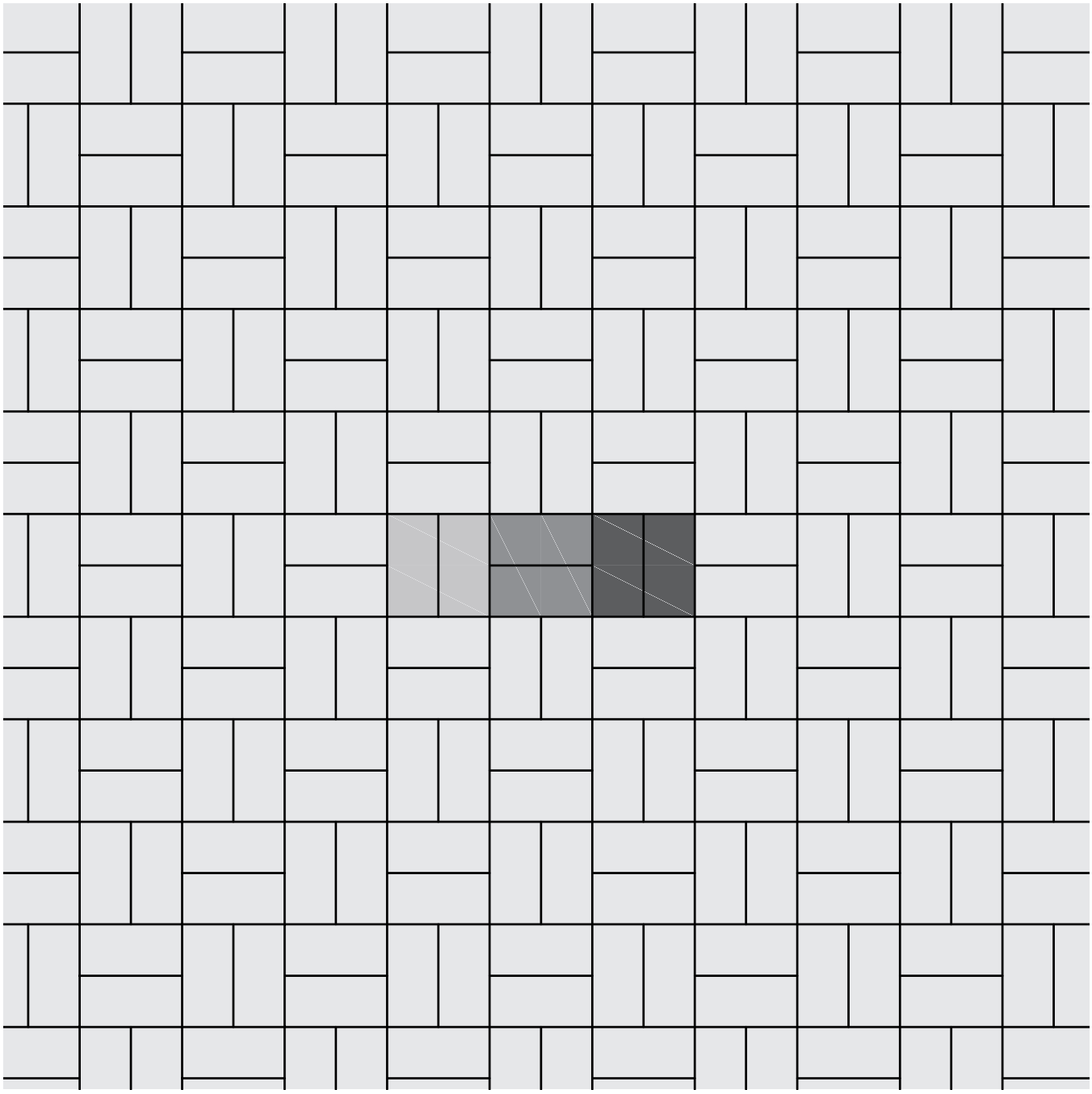
1-PIECE RUNNING BOND PATTERN

100% 4½ x 9

NOTES:
AutoCAD® hatch pattern files can be downloaded from belgard.com for use in architectural drawings

Some patterns may not necessarily reflect the percentages of stone sizes within a particular pallet. In some cases you may have extras in one or more of the sizes. This must be accounted for in your planning and design.

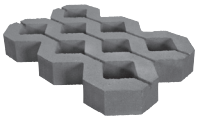
Percentages are based on area by paver.



PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA	TEXTUREGUARD PROCESS
✓	✓		✓		✓

SHAPES & SIZES

1-Piece



15¾ x 23⅝ x 3⅛

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
1-PIECE							
15¾ X 23⅝ X 3⅛	84	10.5	8	32	4	–	1915
TOTAL	84	10.5	8	32	–	–	1915

TURFSTONE™

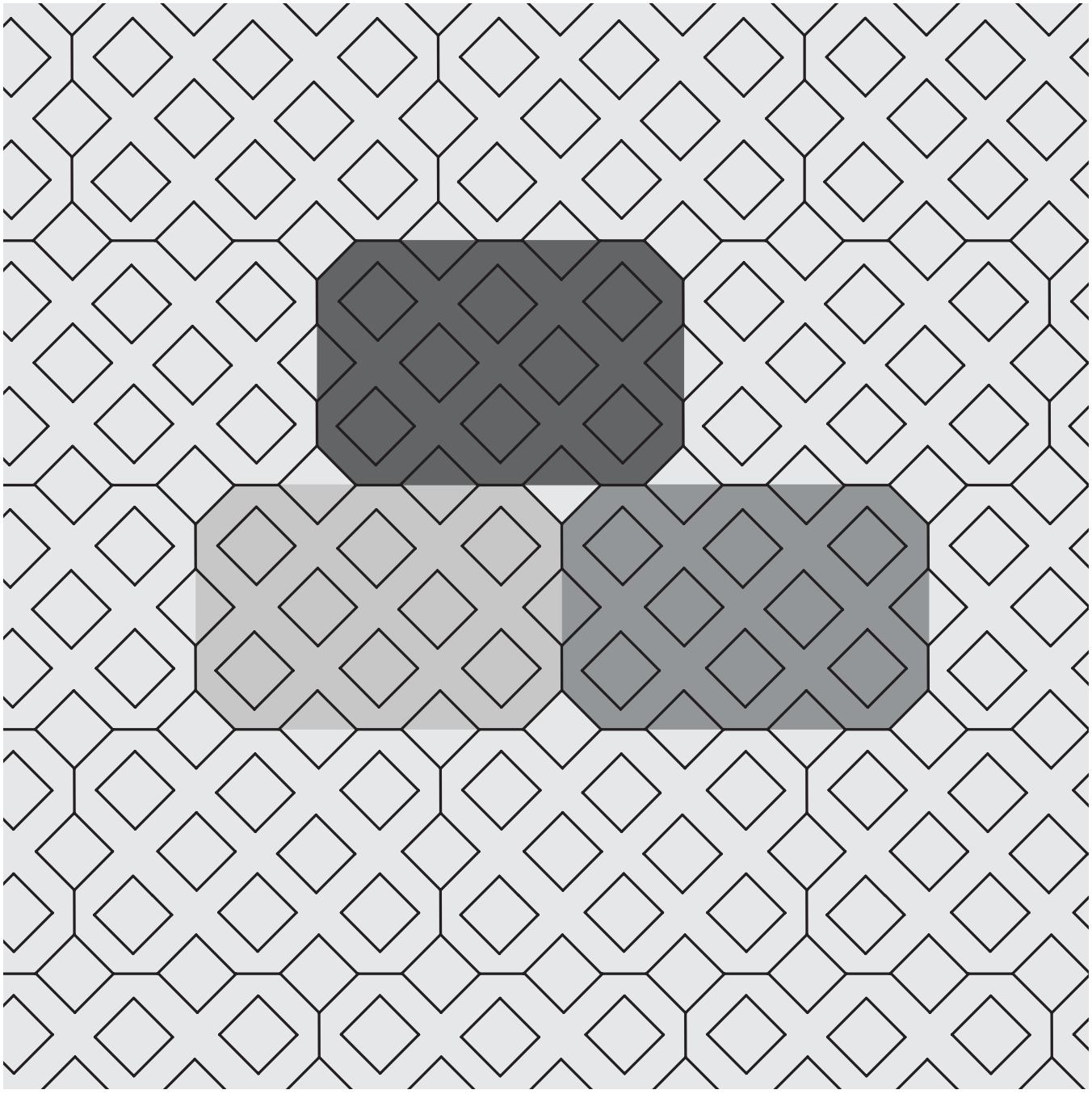
1-PIECE STAGGERED RUNNING BOND PATTERN

100% 15¾ x 23⅝

NOTES:
AutoCAD® hatch pattern files can be downloaded from belgard.com for use in architectural drawings

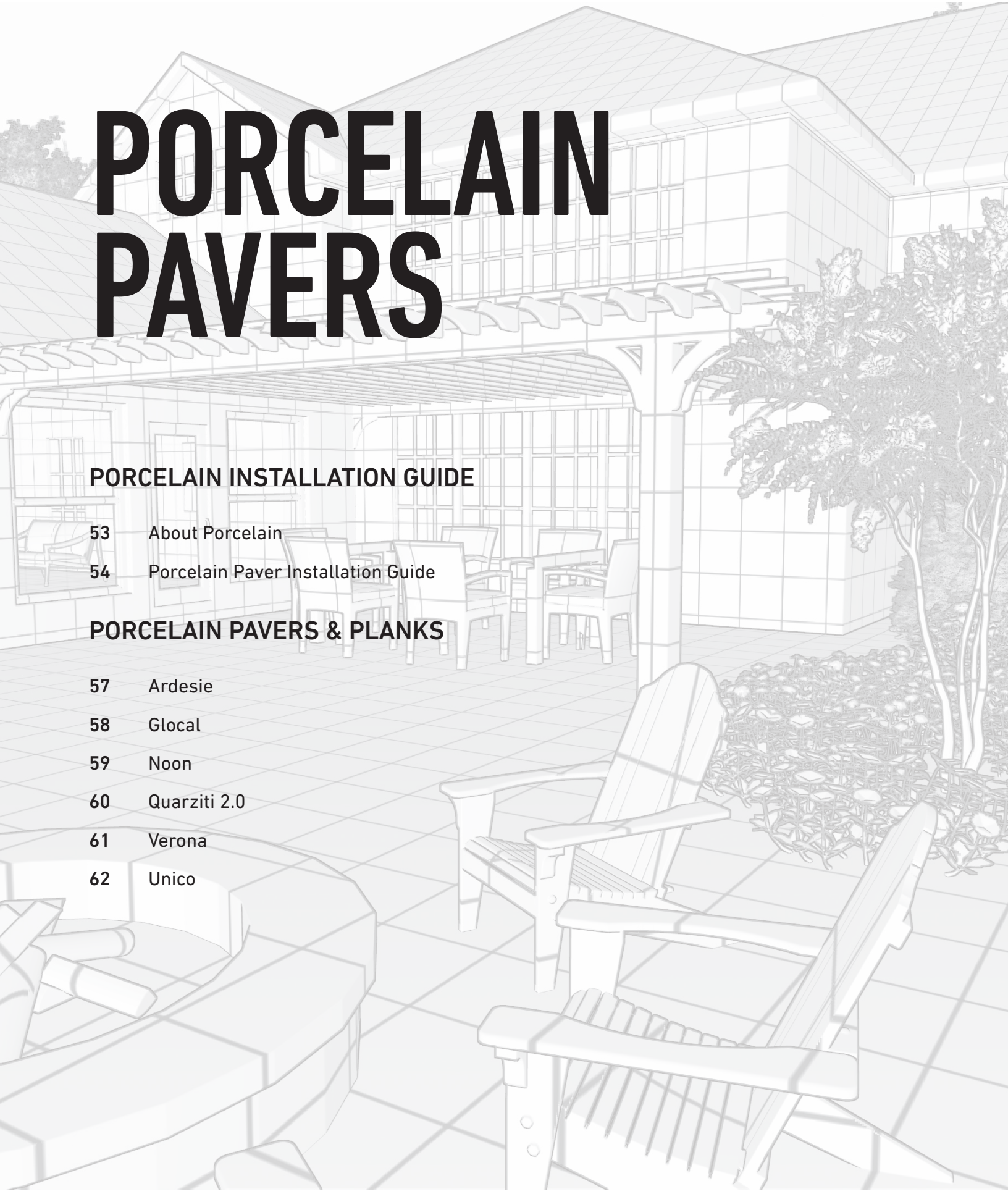
Some patterns may not necessarily reflect the percentages of stone sizes within a particular pallet. In some cases you may have extras in one or more of the sizes. This must be accounted for in your planning and design.

Percentages are based on area by paver.



NOTES

PORCELAIN PAVERS



PORCELAIN INSTALLATION GUIDE

53 About Porcelain

54 Porcelain Paver Installation Guide

PORCELAIN PAVERS & PLANKS

57 Ardesie

58 Glocal

59 Noon

60 Quarziti 2.0

61 Verona

62 Unico

PORCELAIN PAVERS

Belgard Porcelain Pavers are formed by pressing, followed by vitrification: this process involves the total fusion into a single material made from natural raw materials (sand, quartz, feldspars, kaolin, clays and inorganic pigments) which, fired at temperatures above 1226.67° C (2240° F), are transformed into a product with exceptional hardness, ultra-low absorption rate and unmatchable mechanical characteristics. Belgard porcelain pavers are eco-compatible and ecolabel-certified. Each unit is 20mm (0.7874") standard thickness or ¾" nominal thickness and is durable enough to withstand use in exterior applications.

PORCELAIN PAVERS ADVANTAGES:

- Freeze thaw resistant—They are 100% frost-free and their properties remain unaltered at temperatures ranging from -51.1° to + 60° C (-60° F to +140°F).
- Color durability—Color is fused by vitrification, becomes an integral part of the porcelain surface and is not affected by elements.
- Easy installation—Perfect fit and for fast installs.
- Low absorption rate—Spills, salt and other materials will not seep into pours.
- Easy to clean—Household cleaners can be used to wipe down spills and dirt; can even be pressure washed with a low pressure washing device* (see pressure washing warning below).*
- Stylish—Matches what homeowners are currently doing inside the home.
- Durable—High breakage loads of up to 3,587 lbs (1,627 kg) per foot based on ASTM-C648.
- Resistant— High compressive strength and ultra-low absorption rate creates a dense surface that resists mold, moss, dirt and other staining.
- Skid-resistant—Structured paver top textures create slip resistant surfaces for safety; perfect for around pools/spas or in wet climates.
- Modular Design—Superior accuracy in dimensional sizing and linear sides, the slabs allow for perfectly executed installations with tight and accurate lines.
- Light weight—16.8 kg (37 lbs) for the 24"x24" paver permit for easy installation, removal and serviceability and even reusability (Excluding adhered installations).
- Available in colors that have an SRI that qualifies for a LEED certification. The SRI on some units ranges between 60-80. To receive LEED credit, the SRI must be at least 29.
- Impermeable— Deicing salt and other deicing materials can be used without concern of damage.

* It is important that all pressure washing of your porcelain pavers be done with a low pressure washer with a maximum of 1600 psi and nothing more powerful. When pressure washing your installation, care should be taken to prevent damage to the grout (adhesive and grout installations) and some re-sanding will be necessary when power washing an installation with sand or polymeric sand joints.

SPECIALTY TOOLS FOR PORCELAIN PAVER CONSTRUCTION:

- Wet cut tile saw equipped with a diamond blade manufactured for wet cutting porcelain. The saw should be designed to safely cut a 24 inch length porcelain paver.
- A paver clamp for easy handling, which can be used to both install and remove pavers.
- The use of gloves is highly recommended while handling and installing porcelain slabs.
- Appropriate notched trowels and grout float tools for cementitious adhesive and grout installation. The appropriate tool selection would be based on the adhesive and grout manufacturer's recommendation
- Pallets of porcelain pavers are manufactured and shipped with a Heavy Duty plastic protective pallet cover and the individual porcelain pavers are packaged in protective card board boxes. To prevent damage to your pavers, do not remove the protective card board boxes until you are ready to install them.
- Caution: Removing pavers from their protective packaging and handling multiple loose stones together creates the possibility for chipping.

Once the Heavy Duty plastic pallet covers have been removed from the pallet, the unused boxed pavers should be protected from the elements to insure the integrity of the protective cardboard boxes.

CLEANING & MAINTENANCE FOR PORCELAIN PRODUCTS

Post-laying cleaning is obligatory after on site works. Inadequate or late removal of the grouting used on the joints can leave marks difficult to remove and create, on the flooring, a cement film able to absorb all types of dirt, thus giving the impression that it is the material that has become dirty.

It is indispensable to dissolve and remove these residues completely using buffered acids diluted in water (follow the instructions on the packs of the products used), which must then be removed completely and quickly, rinsing the floor with plenty of water to avoid residues or drops on the floor which could damage the tiles.

Allow the product to act on the wet floor, without letting it dry and rubbing it with colorless rags. Next, rinse it thoroughly with water to ensure that the floor is free of detergent residues. If necessary, repeat the operation.

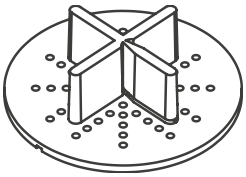
We suggest performing a preliminary wash on a sample surface of a few square meters; if the test is successful, extend clearing over the entire surface. When you have done the above wash, carry out a basic or alkaline wash using degreasing detergents. This is because acid can leave grease on the floor, which could contribute to retaining dirt.

PORCELAIN PAVER INSTALLATION

Each of the following option details will include specific information relative to the selected installation. Base thicknesses vary between different geographical and climatic locations and the contractor will be installing typical base thicknesses for paving installations in their location.

Installing porcelain pavers requires the bedding course sand to be pre-compacted and then struck off with a screed to the required thickness as shown in the detail drawings. The porcelain pavers are not compacted and therefore the sand layer beneath them requires pre-compaction. Do not compact dry sand, but insure the sand has a 5 to 6% moisture content so that it will compact cohesively and allow for a smooth strike off finish.

INSTALLATION INFORMATION THAT MUST BE FOLLOWED :



4mm spacers

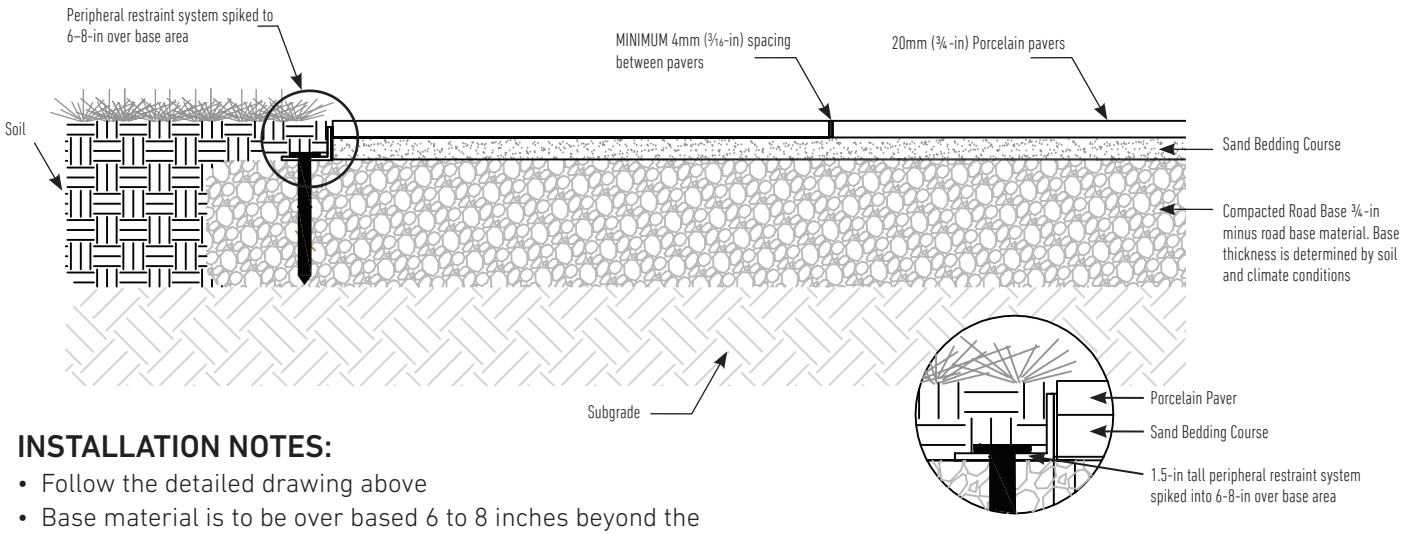
- NEVER compact porcelain pavers with a plate compactor.
- ALWAYS pre-compact and strike off your sand leveling course before installing your porcelain pavers in sand set installations.
- Porcelain pavers should only be wet cut with a tile saw equipped with a wet cut porcelain blade.
- NEVER install porcelain pavers without the required 4mm spacing between them. The porcelain pavers should never be installed with a porcelain to porcelain contact. Plastic 4mm spacers (shown at right) should be used on Sand Set and Permeable installations. The photo on the left illustrates the spacer installed in a perspective to support and space 4 paver corners and the photo on the right illustrates the installed spacer snapped apart (as designed) to form Space T that supports 2 paver corners. This versatility will permit your porcelain pavers to be installed in a stack bond pattern, a running bond patterns as well as a flush installation against another structure.





- For a 100 sf. project, approximately 34 spacers are needed; this allows for overages if needed.

SAND SET OVER COMPACTED ROAD BASE INSTALLATION (PEDESTRIAN FOOT TRAFFIC)

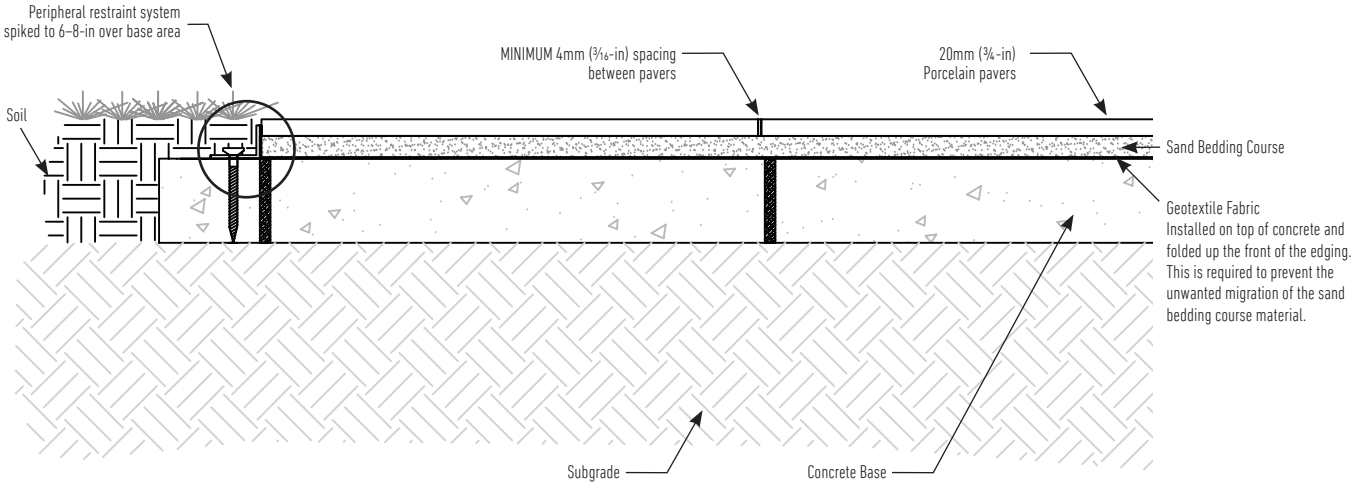


INSTALLATION NOTES:

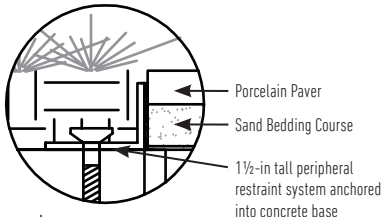
- Follow the detailed drawing above
- Base material is to be over based 6 to 8 inches beyond the edge of the pavement.
- Precompact the sand bedding course and screed to 1-in thickness with smooth surface
- The required edge restraint system is a low profile edge restraint with a vertical height of 1½-in as shown in the drawing.
- Insure that pavement is constructed with a 1 ½ to 2% slope that it is pitched away from any building.
- Insure the plastic 4mm spacers are installed at all corners of the installed pavers.

Belgard porcelain pavers can also be installed as a permeable system. Replace sand with 2 inch thick bedding course or 3/8 inch crushed open grade aggregate. Replace 3/4 minus base with 3/4 crushed open grade aggregate

SAND SET OVER CONCRETE OVERLAY INSTALLATION (PEDESTRIAN FOOT TRAFFIC)

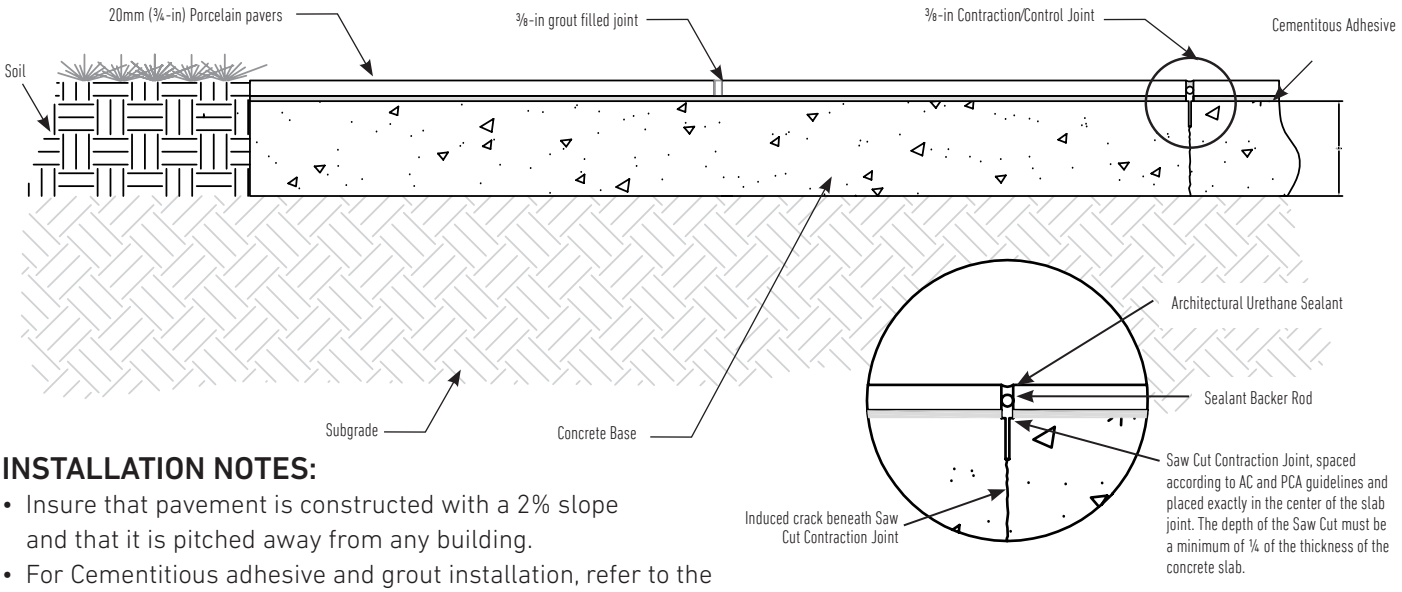


INSTALLATION NOTES:



- The required edge restraint system is a low profile edge restraint with a vertical height of 1½ inches as shown in the drawing.
- Precompact the sand bedding course and screed to 1-in thickness with smooth surface
- Mechanically anchor edge restraint into the concrete base.
- Insure geotextile is installed directly on top of the concrete to contain the bedding sand.
- Insure that pavement is constructed with a 1½ to 2 percent slope and that it is pitched away from any building.
- Insure the plastic 4mm spacers are installed at all corners of the installed pavers.

CEMENTITIOUS ADHESIVE OVERLAY, CONCRETE BASE INSTALLATION (LIGHT VEHICULAR TRAFFIC)



INSTALLATION NOTES:

- Insure that pavement is constructed with a 2% slope and that it is pitched away from any building.
- For Cementitious adhesive and grout installation, refer to the manufacturer's technical instructions and specifically as they relate to outdoor installations.
- For concrete foundation slabs that are not large enough to require contraction / control joints, a minimum 4mm (⅛" to 3/16") grout joint is acceptable, but for larger concrete foundation slabs that do require contraction / control joints, the joint width should be a ⅜". It is absolutely imperative that all contraction / control joints be located in the joint line of installed porcelain pavers and not beneath a paver.
- Caution: If a Porcelain Paver is installed over a control joint, the paver will reflectively crack along the contraction / control joint beneath it.

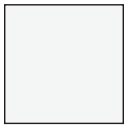
ARDESIE STONE FINISH

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA
✓	✓*			

**Porcelain must be wet laid on concrete and concrete must be designed by an engineer to support the traffic load that will be imposed.*

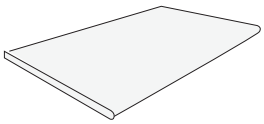
SHAPES & SIZES

24 X 24

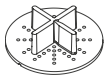


23.54 x 23.54 x ¾

Unico



12.99 x 23.54 x ¾



Spacers are recommended for all porcelain paver installations. PLEASE NOTE: For vehicular applications, must be a mortar install over a concrete slab. Please refer to the MIRAGE install guide for driveway install procedure.

UNIT	GROSS WEIGHT / BOX	PIECES / BOX	SQ FT / BOX	BOXES / FULL PALLET	SQ FT / PALLET	GROSS WEIGHT / PALLET
24 X 24						
23.54 X 23.54 X ¾	33 KG / 72 LBS	2	7.75	30	232.5	980 KG / 2160 LBS
UNICO						
12.99 X 23.54 X ¾	24 KG / 57 LBS	3	5.89	40	235.4	943 KG / 2450 LBS

NEW
GLOCAL

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA
✓	✓*			

**Porcelain must be wet laid on concrete and concrete must be designed by an engineer to support the traffic load that will be imposed.*

**Only available for the 24 x 24 size.*

SHAPES & SIZES

24 X 24



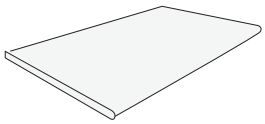
23.54 x 23.54 x ¾

24 x 48

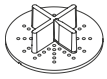


23.54 x 47.17 x ¾

Unico



12.99 x 23.54 x ¾



Spacers are recommended for all porcelain paver installations. PLEASE NOTE: For vehicular applications, must be a mortar install over a concrete slab. Please refer to the MIRAGE install guide for driveway install procedure.

UNIT	GROSS WEIGHT / BOX	PIECES / BOX	SQ FT / BOX	BOXES / FULL PALLET	SQ FT / PALLET	GROSS WEIGHT / PALLET
GLOCAL						
23.54 X 23.54 X ¾	33 KG / 72 LBS	2	7.75	30	232.5	980 KG / 2160 LBS
23.54 X 47.17 X ¾	34 KG / 74 LBS	1	7.75	35	271.25	1189 KG / 2621 LBS
UNICO						
12.99 X 23.54 X ¾	24 KG / 57 LBS	3	5.89	40	235.4	943 KG / 2450 LBS

NOON

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA
✓				

SHAPES & SIZES

8 X 48



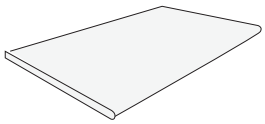
7.64 x 47.17 x ¾

12 x 48

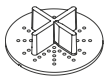


11.73 x 47.17 x ¾

Unico



12.99 x 23.54 x ¾



Spacers are recommended for all porcelain paver installations. PLEASE NOTE: For vehicular applications, must be a mortar install over a concrete slab. Please refer to the MIRAGE install guide for driveway install procedure.

UNIT	GROSS WEIGHT / BOX	PIECES / BOX	SQ FT / BOX	BOXES / FULL PALLET	SQ FT / PALLET	GROSS WEIGHT / PALLET
NOON						
7.64 X 47.17 X ¾	21 KG / 46 LBS	2	5.06	30	151.8	642 KG / 1415 LBS
11.73 X 47.17 X ¾	34 KG / 74 LBS	2	7.75	36	279	1208 KG / 2664 LBS
UNICO						
12.99 X 23.54 X ¾	24 KG / 57 LBS	3	5.89	40	235.4	943 KG / 2450 LBS

QUARZITI 2.0

PORCELAIN COLLECTION

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA
✓	✓*			

**Porcelain must be wet laid on concrete and concrete must be designed by an engineer to support the traffic load that will be imposed.*
**Only available for the 12 x 24 and 24 x 24 size.*

SHAPES & SIZES

Special Order 12 X 14



11.73 x 23.54 x ¾

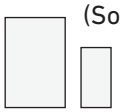
24 x 24



23.54 x 23.54 x ¾

Special Order Modular

(Sold as a pair)



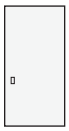
23.54 x 35.35 x ¾
11.73 x 23.54 x ¾

Special Order 18 x 36



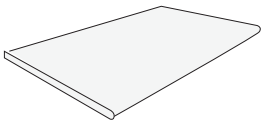
17.64 x 35.35 x ¾

24 x 48

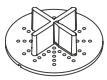


23.54 x 47.17 x ¾

Unico



12.99 x 23.54 x ¾



Spacers are recommended for all porcelain paver installations. PLEASE NOTE: For vehicular applications, must be a mortar install over a concrete slab. Please refer to the MIRAGE install guide for driveway install procedure.

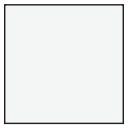
UNIT	GROSS WEIGHT / BOX	PIECES / BOX	SQ FT / BOX	BOXES / FULL PALLET	SQ FT / PALLET	GROSS WEIGHT / PALLET
QUARZITI						
11.73 X 23.54 X ¾	24.58 KG / 54.19 LBS	3	5.81	40	232.5	998 KG / 2201 LBS
23.54 X 23.54 X ¾	33 KG / 72 LBS	2	7.75	30	232.5	980 KG / 2160 LBS
17.64 X 35.35 X ¾	37 KG / 81.4 LBS	2	8.7	27	234.9	1014 KG / 2235 LBS
2-PIECE						
23.54 X 35.35 X ¾	33 KG / 72 LBS	2	7.75	20	279	708 KG / 1560 LBS
11.73 X 23.54						
UNICO						
12.99 X 23.54 X ¾	24 KG / 57 LBS	3	5.89	40	235.4	943 KG / 2450

PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA
✓	✓*			

**Porcelain must be laid on concrete and concrete must be designed by an engineer to support the traffic load that will be imposed.*

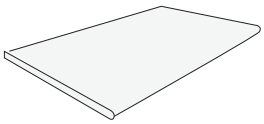
SHAPES & SIZES

24 X 24

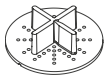


23.54 x 23.54 x ¾

Unico



12.99 x 23.54 x ¾



Spacers are recommended for all porcelain paver installations. PLEASE NOTE: For vehicular applications, must be a mortar install over a concrete slab. Please refer to the MIRAGE install guide for driveway install procedure.

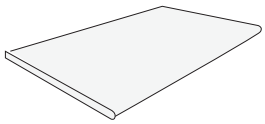
UNIT	GROSS WEIGHT / BOX	PIECES / BOX	SQ FT / BOX	BOXES / FULL PALLET	SQ FT / PALLET	GROSS WEIGHT / PALLET
24 X 24						
23.54 X 23.54 X ¾	33 KG / 72 LBS	2	7.75	30	232.5	980 KG / 2160 LBS
UNICO						
12.99 X 23.54 X ¾	24 KG / 57 LBS	3	5.89	40	235.4	943 KG / 2450 LBS

UNICO

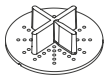
PEDESTRIAN	LIGHT/REGULAR TRAFFIC	HEAVY TRAFFIC	PERMEABLE	ADA
✓				

SHAPES & SIZES

Unico



12.99 x 23.54 x ¾

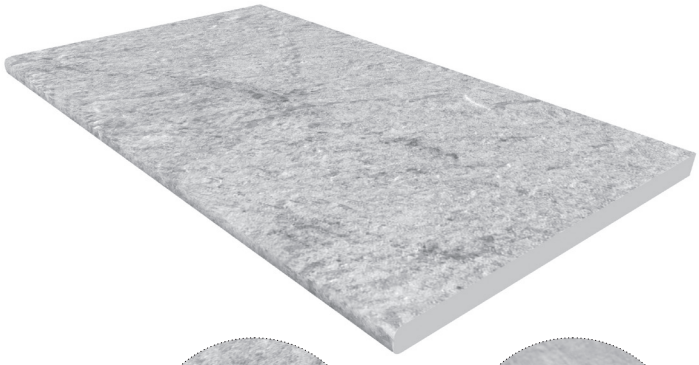


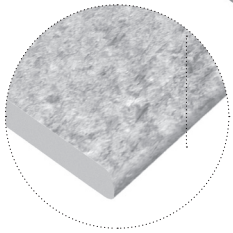
Spacers are recommended for all porcelain paver installations. PLEASE NOTE: For vehicular applications, must be a mortar install over a concrete slab. Please refer to the MIRAGE install guide for driveway install procedure.

UNIT	GROSS WEIGHT / BOX	PIECES / BOX	LF / BOX	BOXES / FULL PALLET	LF / PALLET	GROSS WEIGHT / PALLET
UNICO						
12.99 X 23.54 X ¾	60 LBS	3	5.89	40	235.4	2450 LBS

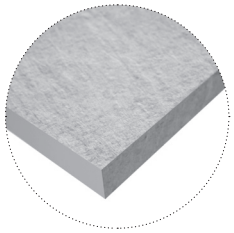
Two installation needs, a single solution. UNICO, size 12.99"x 23.54"x ¾", is processed on both sides, on one side it has a rounded edge and on the other a square edge.

An extremely versatile special piece, which can be used both as a step and as a special piece for swimming pools, with bullnose edge or straight edge, both colored along the side.

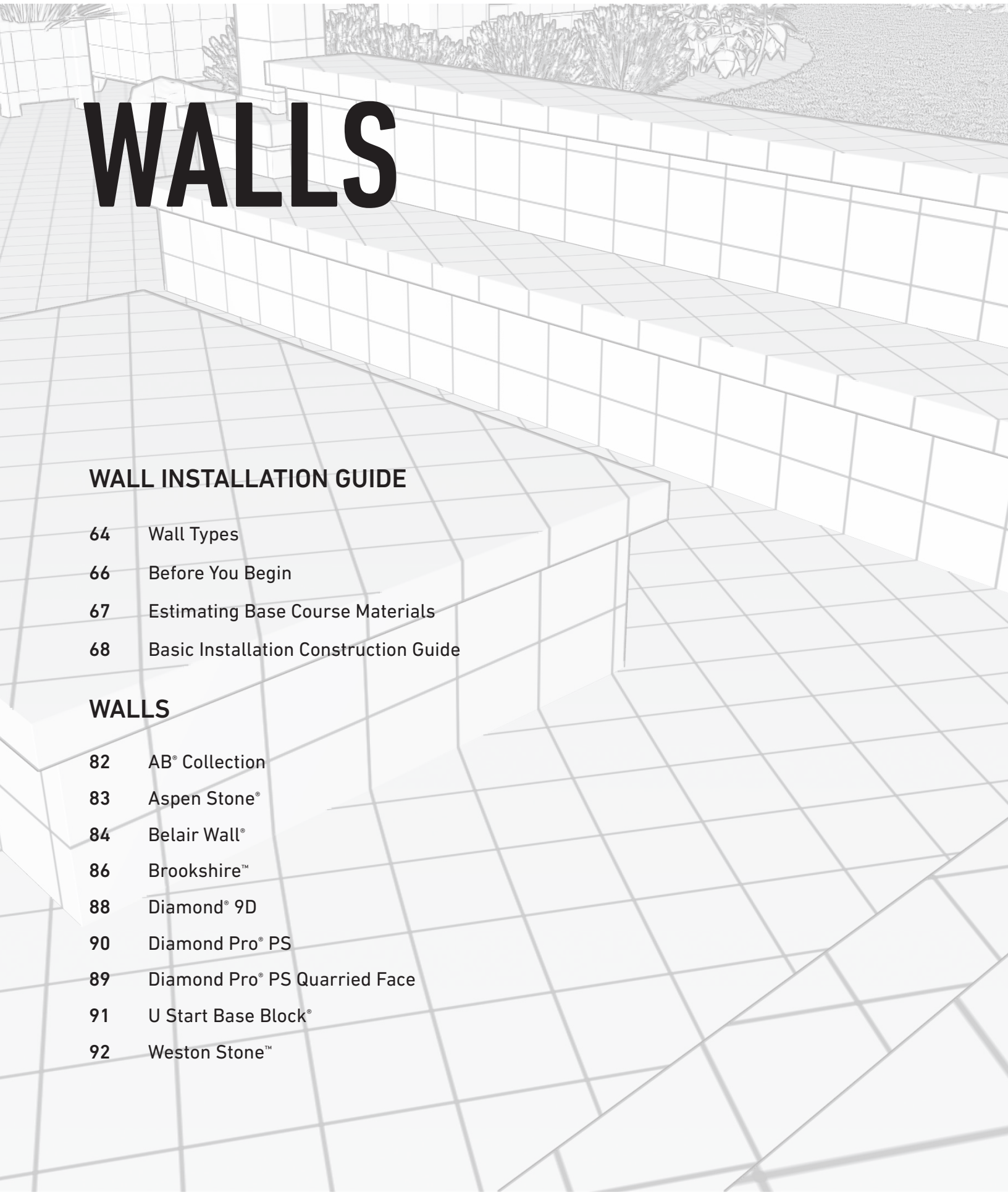




ROUNDED EDGE



STRAIGHT EDGE



WALLS

WALL INSTALLATION GUIDE

64 Wall Types

66 Before You Begin

67 Estimating Base Course Materials

68 Basic Installation Construction Guide

WALLS

82 AB® Collection

83 Aspen Stone®

84 Belair Wall®

86 Brookshire™

88 Diamond® 9D

90 Diamond Pro® PS

89 Diamond Pro® PS Quarried Face

91 U Start Base Block®

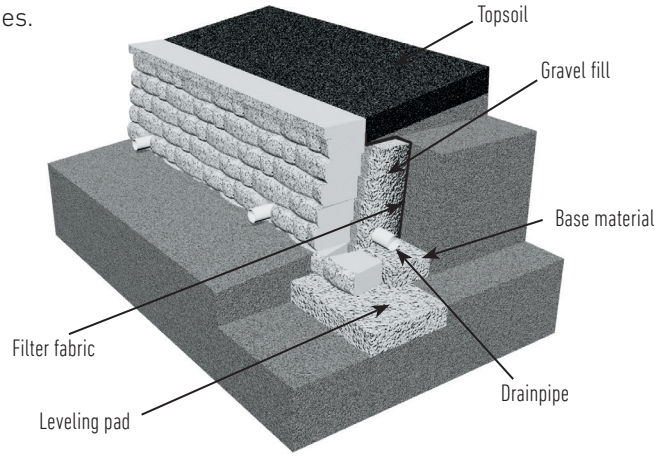
92 Weston Stone™

SEGMENTAL RETAINING WALL TYPES

Segmental retaining walls typically fall into one of three categories.

GRAVITY RETAINING WALL

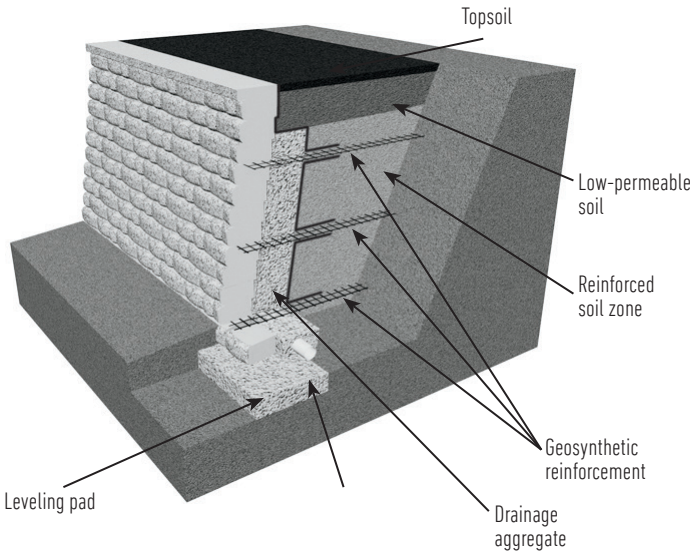
The first category — a gravity wall — is a retaining wall that does not use soil reinforcement. A gravity wall has height limitations specific to each product. An advantage of this type of retaining wall is that it requires a smaller work area behind the wall.
A gravity wall relies on the weight and setback of the block to resist the soil forces being exerted on the wall.



GEOSYNTHETIC-REINFORCED RETAINING WALL

The second category is a geosynthetic-reinforced wall, which needs to be designed by a qualified engineer. There are (theoretically) no height limitations with reinforced retaining walls, and they are used in larger applications. It requires more work area behind the structure.

The block of soil is stabilized by introducing reinforcement layers into the soil mass behind the facing units. The larger the stabilized soil mass, the more soil can be retained or held back. The geogrid in the soil extends past the theoretical failure plane and serves to create a large, rectangular mass of block and soil, restraining the retained soil.

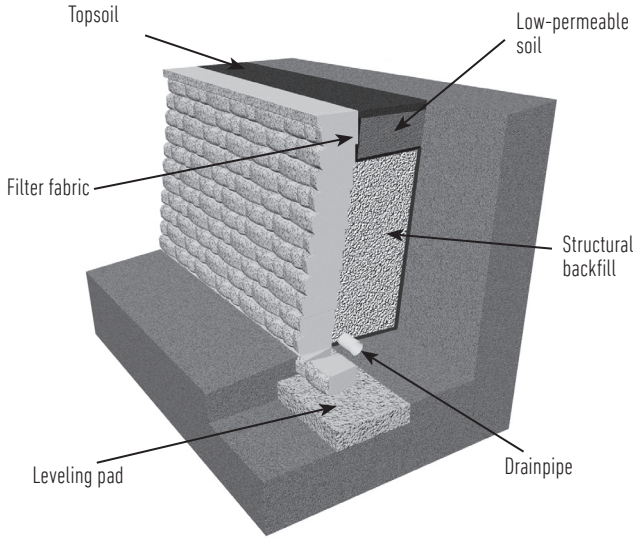


ANCHORPLEX® SYSTEM

The third category is the Anchorplex system, which offers a unique, non-conventional solution to problematic wall construction sites. It is a retaining wall built with Anchor™ products and structural backfill specified by Anchor Wall Systems, and backed by engineering support tools developed by Anchor.

Use of the Anchorplex system completely eliminates the need for the construction of a mechanically stabilized earth zone behind the wall facing and requires substantially less excavation than is usually necessary in geosynthetic-reinforced wall construction.

Contact Anchor Wall Systems at 1-877-295-5415 for more information about designing and building with the Anchorplex system.

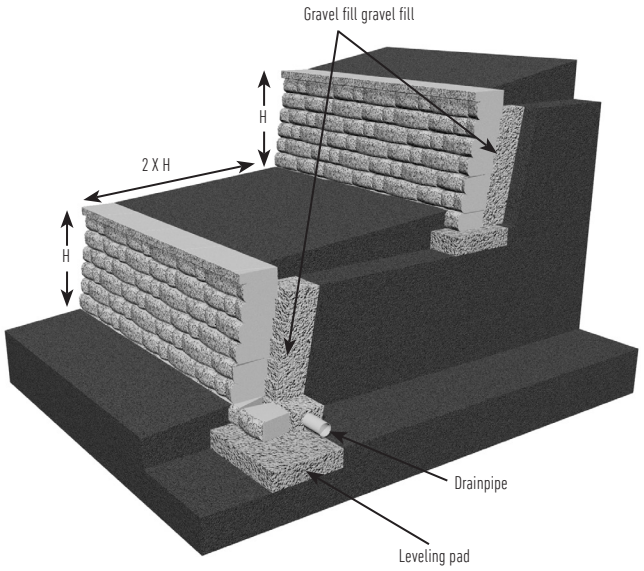


OTHER SEGMENTAL WALL APPLICATIONS

INDEPENDENT TERRACED WALLS

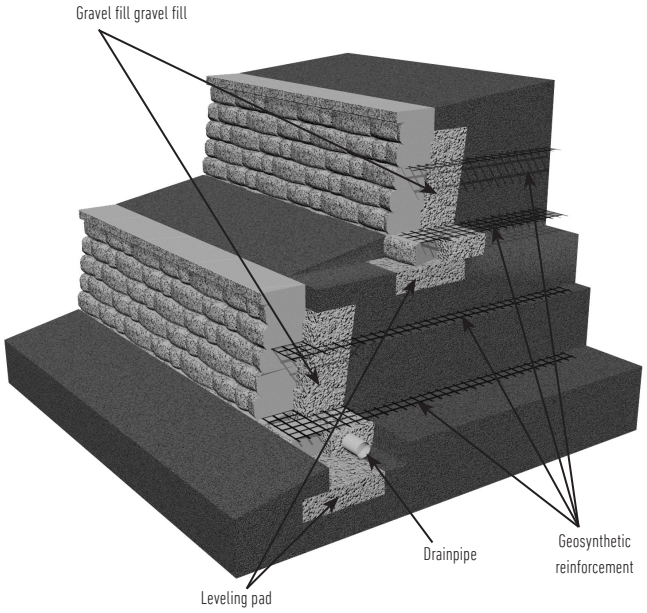
For each wall to be independent of others, they must be built using a 2:1 ratio: The upper wall must be built a distance away from the lower wall of at least twice the height of the lower wall. In addition, the upper wall must also be equal to or less than the height of the lower wall. Exceptions to this general rule include weak soil conditions or where slopes exist above, below or between wall locations. For example, if the lower terrace is 4 feet tall, the distance between the terraces must be at least 8 feet and the upper wall must not be higher than 4 feet.

Proper drainage is vital to maintaining stable, long-lasting terraced walls. A drainpipe must be installed so that the water is directed around or under the lower wall. Never place the drainpipe outlet for the upper wall above or behind the lower wall.



DEPENDENT TERRACED WALLS

When the distance between the lower and upper walls is less than twice the height of the lower wall, the walls become structurally dependent on each other. In this situation, it is important to take global stability into account, incorporating additional reinforcement — and longer layers — into the wall plan. In addition, structurally dependent walls require even more excavation, backfill and time. So plan ahead and be sure to check the wall plan for specific requirements. For structurally dependent walls, consult with a qualified engineer.



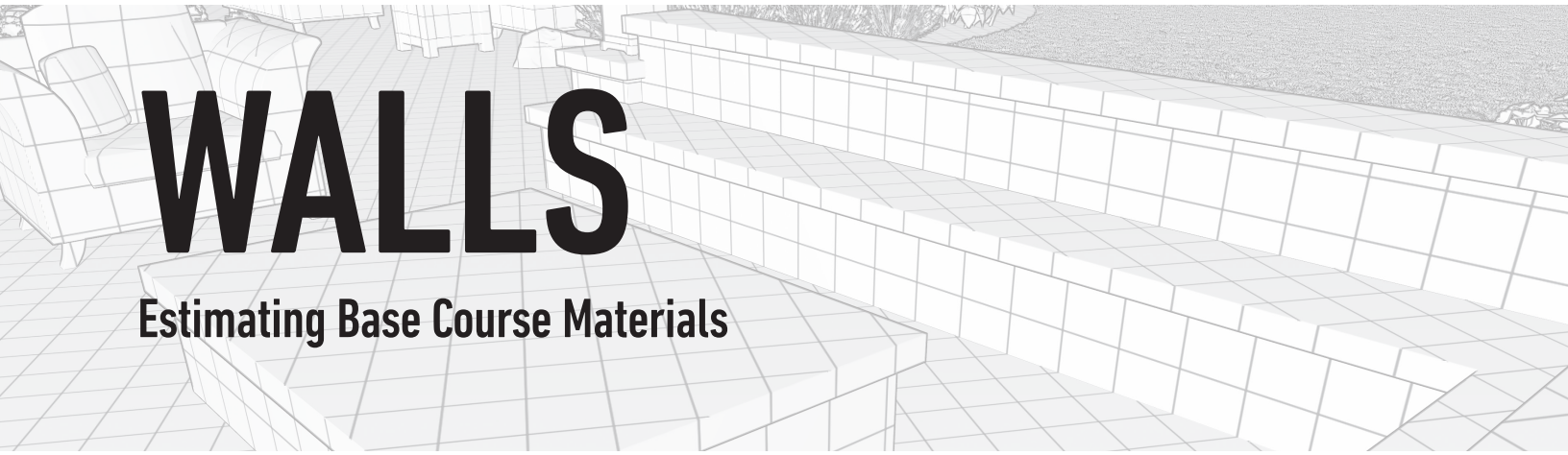
BEFORE YOU BEGIN

Advance planning and careful layout at the job site help ensure a successful retaining and freestanding wall project.

- Review the site plan to confirm lot lines, wall location, length and elevations.
- Understand on-site soils. Ideal soils are sand and gravel. For walls built in clay or poor soils, work with a local engineer to confirm the wall design and the required soil reinforcement. Black or organic soils should not be used as backfill.
- Confirm the location of underground utilities. Call 811.
- Seek all necessary building permits.
- Prepare a drawing of the site with the wall location, lengths and elevations.
- Plan drainage to avoid erosion or buildup of water behind the wall. Consider where the water will drain through the wall, where downspouts will expel and whether there's an underground sprinkler. For walls greater than three feet in height, a perforated drainpipe is recommended at the base of the aggregate to quickly remove large amounts of water.
- A best practice is to divert water away from the wall before it has an opportunity to enter the reinforced soil and gravel fill zone.
- Check the block delivered to ensure it is the correct product and color. Check the geogrids to confirm that it's the strength and weight specified in the engineering plans.
- Be sure to use the right tools. Hand tools include a shovel, 4-foot level, dead-blow hammer, 2- or 3-pound hammer, chisel, hand tamper, hydraulic splitter and string line. Power tools may include a circular saw with a diamond blade and a plate compactor.
- Always wear protective eye wear.

For additional wall installation references go to Belgard.com.





WALLS

Estimating Base Course Materials

1. HOW DO I ESTIMATING LEVELING PAD AGGREGATE?

Leveling pad aggregate is a compactible base material of ¾-inch minus (with fines). The leveling pad extends at least 6 inches in front of and behind the wall units and is at least 6 inches deep after compaction.

Wall length in feet (L) x width of trench in feet (W) ÷ 200 x depth of base in inches (D) x 1.25 = _____ tons.

2. HOW DO I ESTIMATE GRAVEL FILL?

Gravel fill gravel fill is clear 1-inch crushed stone (with no fines). The drainage column extends 12-inches behind the wall units. Wall length (L) in feet x total wall height (H) in feet = sq. ft. ÷ 27 x 1.1 = cubic yards (cu. yd.). cu. yd. x 1.6 = tons.

sq. ft. ÷ 27 x 1.1 = _____ cu. yd.

cu. yd. x 1.6 x 1.25 = _____ tons of aggregate with compensation for compaction.

BASIC INSTALLATION CONSTRUCTION GUIDE - RETAINING WALL

STAKE OUT THE WALL

- Have a surveyor stake out the wall's placement. Verify the locations with the project supervisor.

EXCAVATION

- Excavate for the leveling pad according to the lines and grades shown on the approved plans and excavate enough soil behind the wall for the geogrids material, if needed.
- The trench for the leveling pad should be at least 12 inches wider than the block you are installing and 6 inches deeper than the height of the block. *See Diagram 1.*

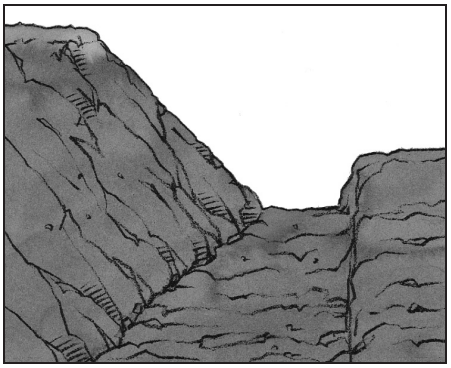


Diagram 1 – Excavation

LEVELING PAD

- An aggregate leveling pad is made of compactable base material of ¾-inch minus (with fines).
- The pad must extend at least 6 inches in front of and behind the first course of block and be at least 6 inches deep after compaction.
- If the planned grade along the wall front will change elevation, the leveling pad may be stepped up in 6-inch increments to match the grade change. Start at the lowest level and work upward whenever possible.
- Compact the aggregate and make sure it's level front to back and side to side. Mist lightly with water before compaction. *See Diagram 2.*

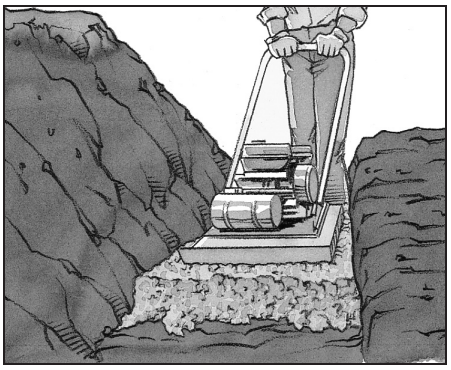


Diagram 2 – Leveling Pad

BASE COURSE

- This is the most important step in the installation process. Bury the base course of block.
- Begin laying block at the lowest elevation of the wall. Remove the rear lip (if applicable) of the block by hitting from the back so that it will lie flat on the leveling pad. *See Diagram 3.*
- Place first block and level, front to back and side to side; lay subsequent blocks in the same manner.
- Place the blocks side by side, flush against each other, and make sure they are in full contact with the leveling pad.
- If the wall is on an incline, don't slope the blocks; step them up so they remain consistently level.
- Use string line along the back edge of block to check for proper alignment.
- For multi-piece products, use the largest unit, 18 inches wide, for the base course.
- Fill cores (if applicable) and voids between blocks with 3/4-inch free-draining aggregate prior to laying the next course of block. Clean any debris off the top of the blocks. *See Diagram 4.*
- Install any location devises, such as pins, prior to placing the second course of blocks."

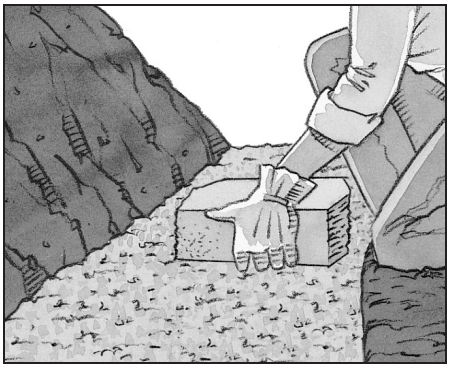


Diagram 3 – Base Course

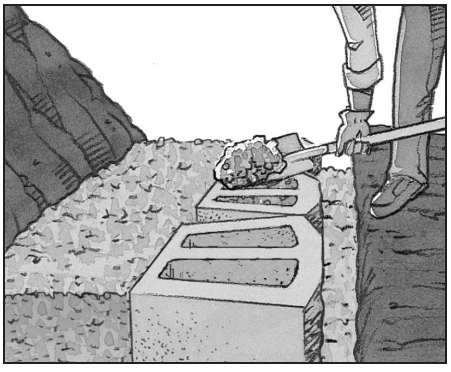


Diagram 4 – Core Fill

CONSTRUCTION OF SUBSEQUENT COURSES

- Clean any debris off the top of the blocks.
- Place the second course of blocks on top of the base course. Maintain running bond. Pull each block forward as far as possible to ensure the correct setback. *See Diagram 5.*
- Fill cores (if applicable) and voids between blocks with 1-inch free-draining aggregate prior to laying the next course of block. Clean any debris off the top of the blocks.
- Backfill with ¾-inch free-draining aggregate directly behind the block, adding 6 inches at a time followed by proper compaction. Fill thickness will be dependent on compaction equipment
- Add retained soil behind the aggregate. Compact before the next course is laid.
- Don't drive heavy equipment near the wall. Self-propelled compaction equipment should not be used within 3 feet from the back of the wall
- Keep the wall bond by placing units in a staggered relationship to the course beneath.
- You may need partial units to stay on bond. A saw with a diamond blade is recommended for cutting partial units. Use safety glasses and other protective equipment when cutting.

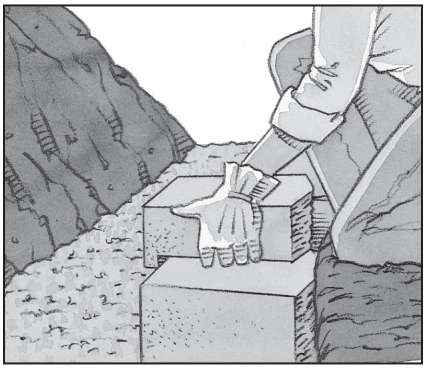


Diagram 5 – Next Course Construction

DRAINAGE DESIGN

- Each project is unique. The grades on your site will determine at what level to install the drainpipe.
- Place the drainpipe as low as possible behind the wall so water drains down and away from the wall into a storm drain or to an area lower than the wall. *See Diagram 6.*
- Fill in the area behind the blocks with 3/4-inch free-draining aggregate, at a minimum of 12-inches from behind the back of the block or 24-inches from the back of the block, whichever is greater.
- You may need to place and backfill several courses to achieve the proper drainage level. *See Diagrams 7 and 8.*
- The drainpipe outlets should be spaced not more than every 50 feet and at low points of the wall. In order for the gravel fill to function properly, it must keep clear of regular soil fill. See below diagram of daylight drainage system.

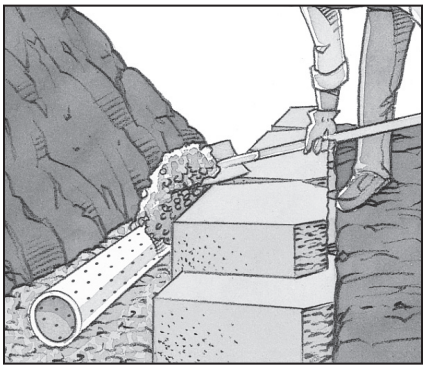


Diagram 6 – Drainage

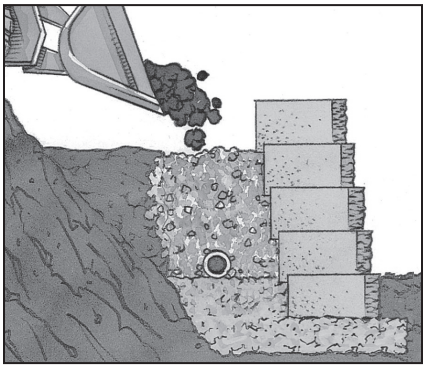


Diagram 7 – Backfill

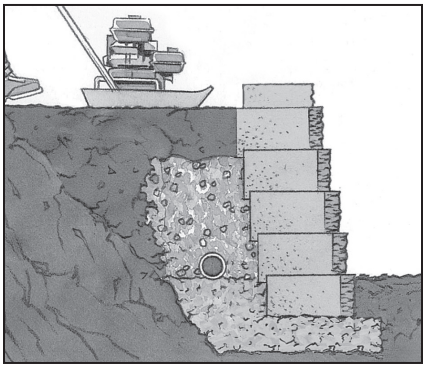
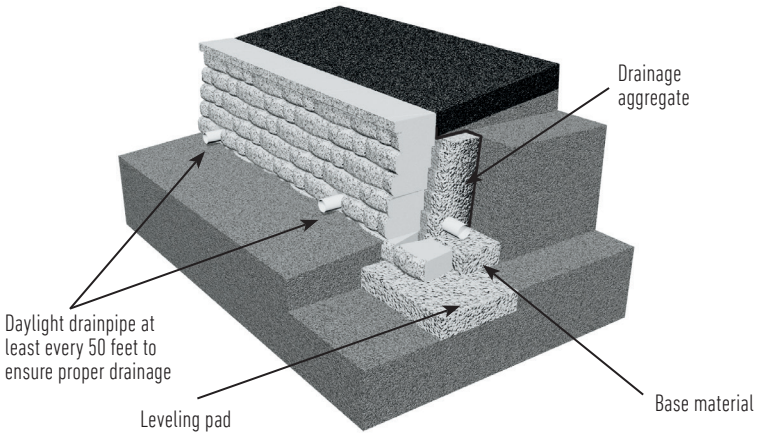


Diagram 8 – Compaction



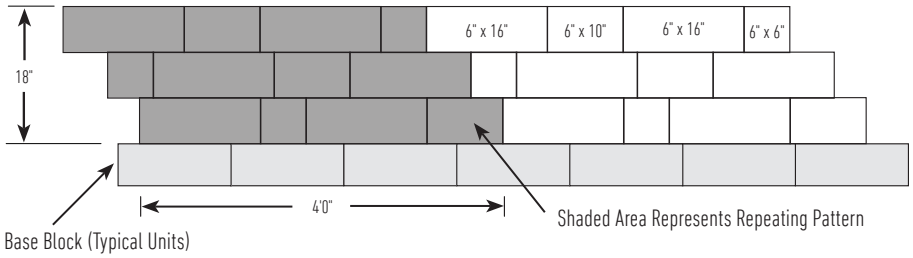
LAYING PATTERN AND INSTALLATION GUIDE FOR MULTI-PIECE SEGMENTAL RETAINING WALLS

USING A PATTERN FOR SINGLE-HEIGHT RETAINING WALLS

When using a pattern, begin at one edge, laying the units as indicated. Install at least one repeat of the pattern to establish the pattern before proceeding to the next course. Stagger the patterns as shown to avoid vertical bonds.

One set of 6-inch-high retaining wall blocks consists of 2 large units, 1 medium unit and 1 small unit, and is 2 square feet.

6" Multipiece wall system, 18-inch by 4-foot pattern = 6 sq. ft.



Blocks required	
6 Sets	
12	6" x 16"
6	6" x 10"
6	6" x 6"

Blocks required	
3 Sets	
6	6" x 16"
3	6" x 10"
3	6" x 6"

STEPPING UP THE BASE AT LOWEST POINT

Walls built on a sloping grade require a stepped base. Begin excavation at the lowest point and dig a level trench into the slope until it is deep enough to accommodate the base material and height of one entire block.

STEP-UP

At this point, step up the height of one block and begin a new section of base trench. Continue to step up as needed to top of slope. Always bury at least one full unit at each step.

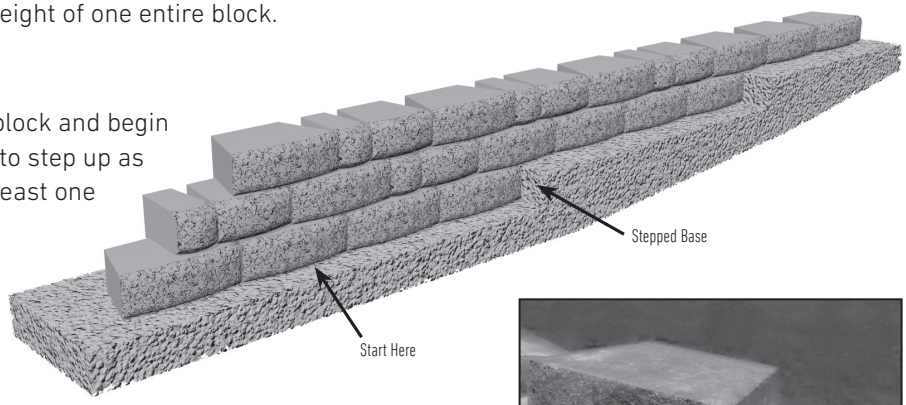
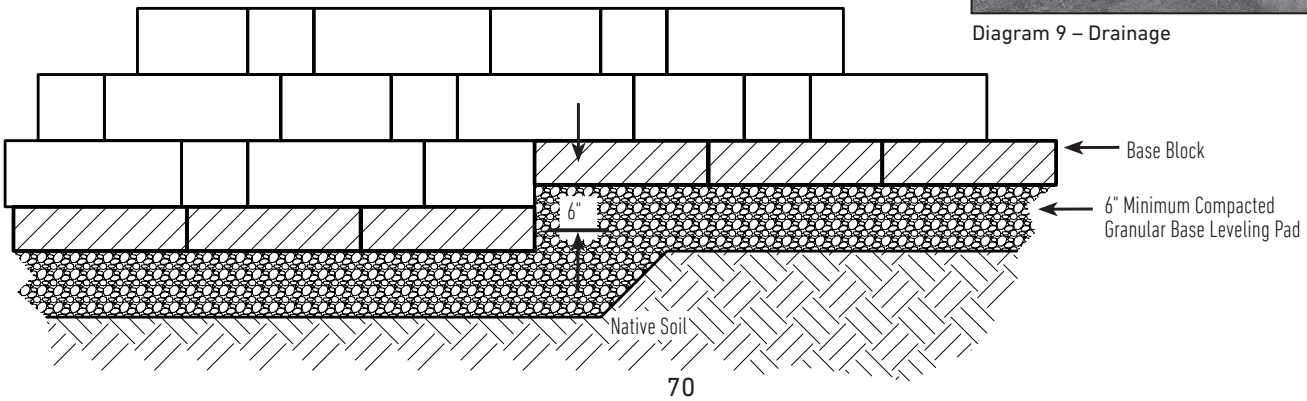




Diagram 9 – Drainage

STEPPING UP THE BASE USING THE U START BASE BLOCK

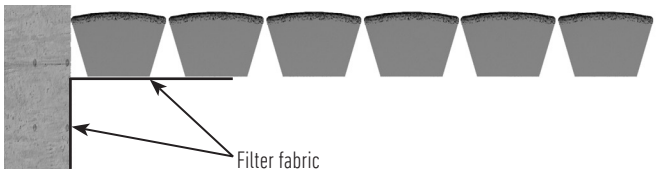
Walls built on a sloping grade require a stepped base. Begin excavation at the lowest point and dig a level trench, 24 inches wide, into the slope until it is deep enough to accommodate the base material and one entire base block. *See Diagram 9.*



ABUTTING AN EXISTING STRUCTURE

FIRST COURSE

Begin with the first block next to the wall and place the first course. Place filter fabric behind the first two units and extend it 2 feet along the existing structure.



First course

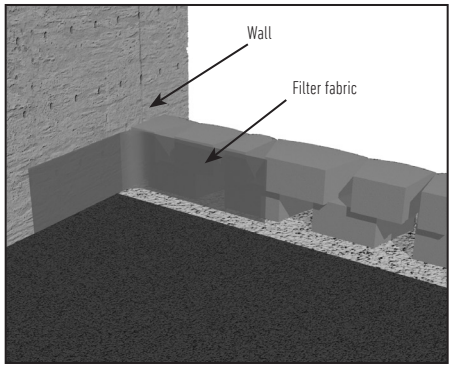
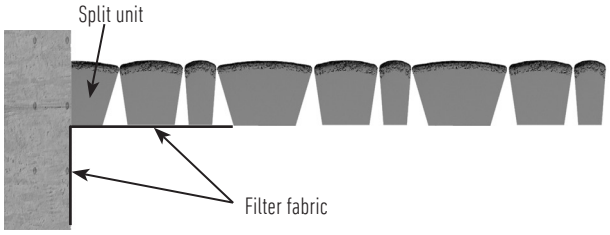


Diagram 10 – Extend Filter Fabric

SECOND COURSE

Build second course with standard installation techniques. A split unit is shown but may not be necessary in every installation. Extend filter fabric to the top edge of the final course. *See Diagram 10*. A rubber membrane may be placed between the units and a non-concrete wall to prevent moisture damage to the structure.



Second course

Note: To split a block, use a hydraulic splitter or split manually by using a hammer and chisel to score the block on all sides. Pound the chisel on the same line until the block splits. If partial unit sides are not exposed, use a saw with a diamond blade to achieve a tighter fit.

OUTSIDE CURVES

CALCULATE THE RADIUS

When building an outside curve, begin by determining the desired radius of the top course. This will be the smallest radius in the wall and must not be less than the minimum radius for the wall system used.

To determine the approximate base course radius:

1) Add ¼-inch to the setback of the block used. Multiply that by the number of courses in the finished wall.
2) Add desired radius length of the top course to the result of step 1. This number equals the approximate radius length of the base course.
3) To determine the radius for the front edge of the trench, add 6 inches to the approximate radius length of the base course.

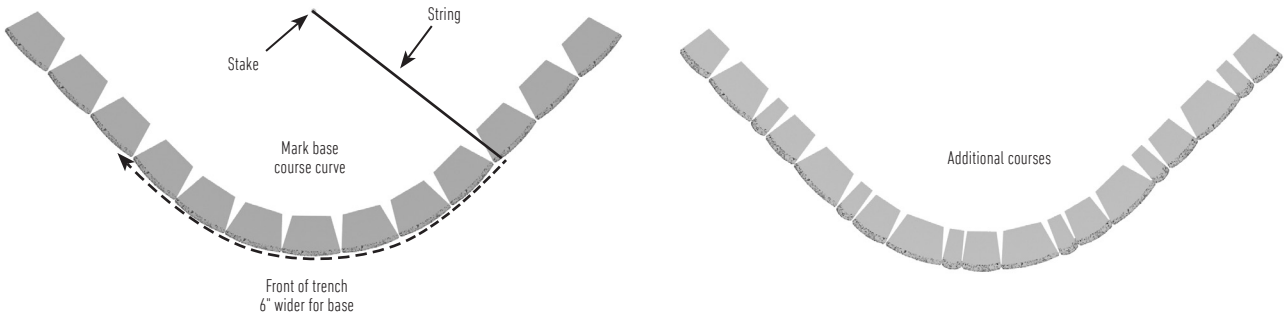
Example: Setback of the Highland Stone® product is 1⅛ inch. The wall is 8 courses high. The desired radius of the wall measured to the front of the block on the top course is 6 feet.

1) Setback multiplied by number of courses
   1⅛" + ¼" = 1⅜" x 8 courses = 11"
2) Desired radius plus setback
   6' + 11" = 6'11"
3) Front of trench
   6'11" + 6" = 7'5"

TIP: Subtract the depth of the block if you prefer to mark the curve from the back of the block.

LAY OUT THE TRENCH

Drive a stake into the ground at the desired radius point of the curve. Attach a string and rotate it in an arc at the desired length to mark the curve in the soil. Dig the trench.



BASE COURSE

Using the existing radius point stake and string, mark the base course curve on the leveling pad. Align the front of the block with the marked curve and ensure level placement from side to side and front to back.

ADDITIONAL COURSES

On each course, some of the rear lip of each block must be in contact with the back of the units below to ensure structural stability. The setback of the block will cause the radius of each course to gradually increase and eventually affect the running bond of the wall. To maintain proper running bond, use partial units as needed. Once a split or cut unit is cut to size, glue in place with a concrete adhesive.

INSIDE CURVES

CALCULATE THE RADIUS

Check the wall plan to determine the radius of the top course. This will be the biggest radius in the wall and you will need it to determine the radius at the base course, which will be the smallest radius of the wall and must not be less than the minimum for the block system used.

A QUICK WAY TO DETERMINE THE BASE COURSE RADIUS:

1) Add ¼-inch to the setback of the block used. Multiply that by the number of courses in the finished wall.
2) Subtract the result of step 1 from the radius of the top course. This number equals the approximate radius length of the base course.
3) To determine the radius for the front edge of the trench, subtract 6 inches from the approximate radius length of the base course.

Example: The setback of the Highland Stone® product is 1⅛ inches. The wall is 8 courses high. The desired radius of the wall measured to the front of the block on the top course is 10 feet.

1) Setback multiplied by number of courses
   1⅛" + ¼" = 1⅜" x 8 courses = 11"
2) Desired radius minus setback
   10' - 11" = 9'1"
3) Front of trench
   9'1" - 6" = 8'7"

TIP: Add the depth of the block if you prefer to mark the curve from the back of the block.

LAY OUT THE TRENCH

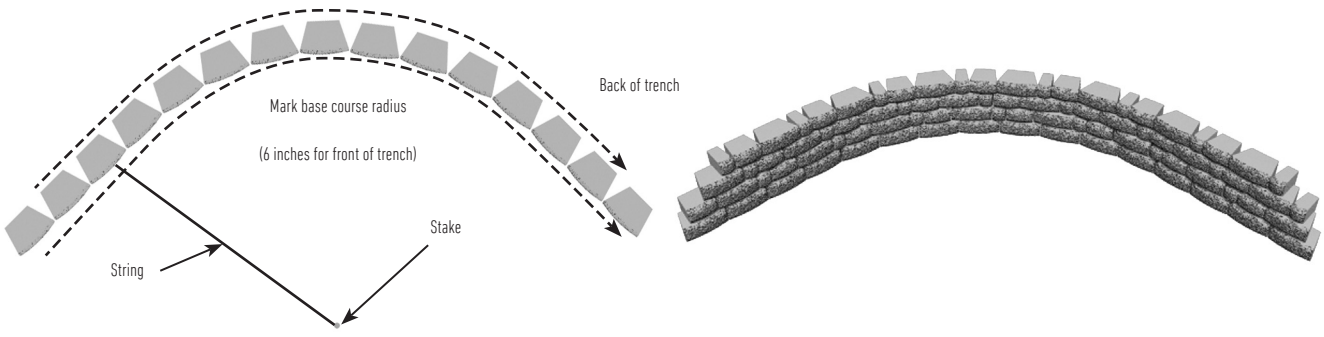
Drive a stake into the ground at the desired radius point of the curve. Attach a string and rotate it in an arc at the desired length to mark the curve in the soil. Dig the trench.

BASE COURSE

Using existing radius point stake and string, mark the base course curve on the leveling pad. Align the front of the block with the marked curve and ensure level placement from side to side and front to back.

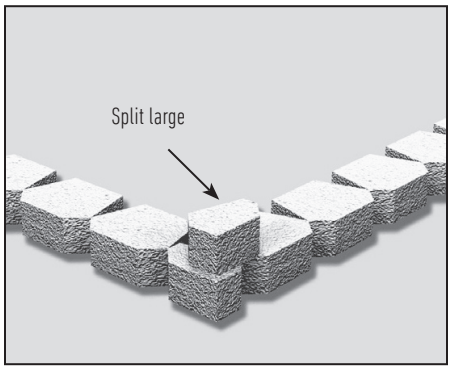
ADDITIONAL COURSES

On each course, some of the lips of each block must be in contact with the back of the units below to ensure structural stability. If not, use construction adhesive to adhere blocks together. To maintain proper running bond, use partial units as needed. Once a split unit is cut to size, glue in place with a concrete adhesive.

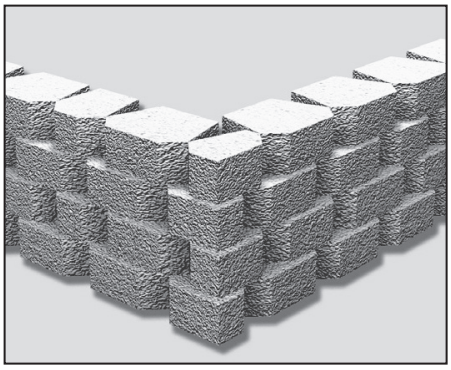


OUTSIDE 90-DEGREE CORNERS

FOR SYSTEMS WITHOUT A CORNER UNIT



Outside 90-Degree Corner
without Corner Unit



Additional Courses

BASE COURSE

To build an outside 90-degree corner, begin by splitting a unit in half. Place this unit with both split faces out at the corner. If needed, remove the rear lip so that the block lies flat. Then lay the rest of the base course working from the corner block out.

ADDITIONAL COURSES

Begin the next course with the other half of the split unit faced in the opposite direction at the corner.
Place the second and third blocks on either side of the corner unit. Once the corner unit is in position, glue block in place with a concrete adhesive. Continue to alternate the corner unit orientation with each course and always use a concrete adhesive on the corner units. Use cut or split units as necessary to maintain running bond.

OUTSIDE 90-DEGREE CORNERS

FOR SYSTEMS WITHOUT A CORNER UNIT

90-degree corners are built by alternating corner/column units so the long side is on different sides of the wall. Build the pattern from the corner unit when possible. Install corner units level from front to back.

Depending on the wall layout, there may be a need to go off the pattern and randomly place wall blocks near the corner. Set back corner units to reflect the batter of the wall block units and glue from bottom to top.



Outside 90-Degree Corner
with Corner/Column Unit

NOTE: To split a block, use a hydraulic splitter or split manually by using a hammer and chisel to score the block on all sides. Pound the chisel on the same line until the block splits. If partial unit sides are not exposed, use a saw with a diamond blade to achieve a tighter fit.

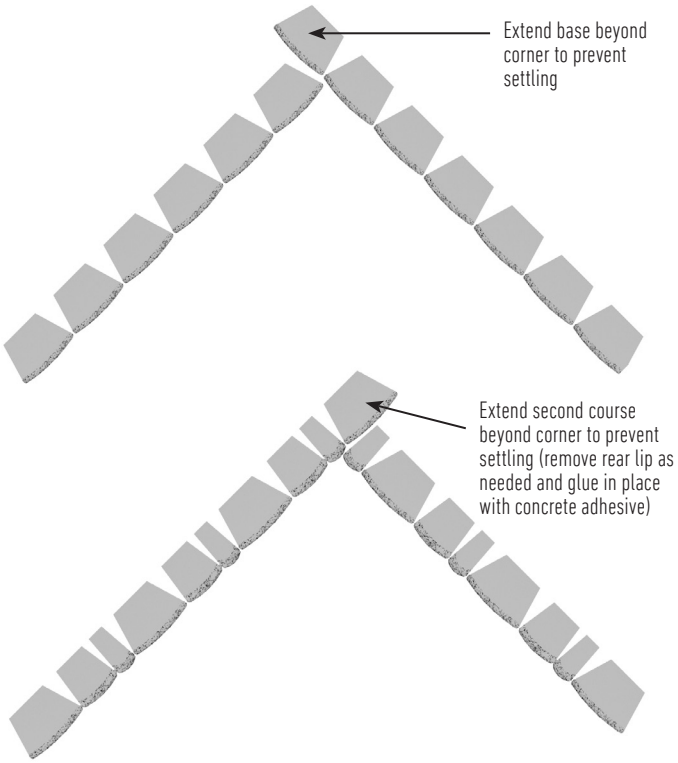
INSIDE 90-DEGREE CORNERS

BASE COURSE

To create an inside 90-degree corner, begin by placing a block at the corner. Then lay a second block perpendicular to the first and continue laying out the rest of the base course working from the corner out. Make sure to construct the base course according to standard site prep and installation procedures.

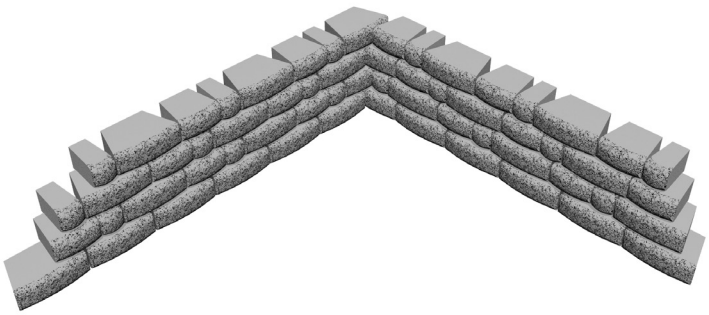


Example Inside 90-Degree Corner



ADDITIONAL COURSES

On the second course, place all blocks on bond along one side of the corner. Once the second course of one wall is established, begin the second course of the adjacent wall. Split units or units of varying sizes may be required on this wall to maintain running bond. Continue to alternate the corner unit orientation with each course and always use a concrete adhesive on the corner units.



GEOGRIDS (IF REQUIRED)

- Geogrids is recommended for walls taller than the gravity height of each product, or walls situated in poor soils, supporting a driveway, etc. Consult an engineer for design assistance.
- Check the wall construction plan for which courses will need geogrids.
- Clean any debris off the top layer of blocks.
- Measure and cut the geogrids to the design length in the plans.
- Many geogridss have a design strength direction, which must be laid perpendicular to the wall.
- Place the front edge of the geogrids on top of the block, making sure it's within 1 inch of the face of the block. Correct placement ensures that you maximize the connection strength and keep the batter consistent.
- Apply the next course of blocks to secure it in place.
- A minimum of 6 inches of backfill is required prior to operating vehicles on the geogrids. Avoid sudden turning or braking.

COMPACTION

- Place the backfill soil behind the gravel fill and compact to 95% standard PROCTOR density with a hand-operated compactor."
- Make sure the aggregate is level with or slightly below the top of the course.
- Place soil in front of the base course and compact. The base course should be buried.
- Continue to fill and compact.

FINISH GRADE AND SURFACE DRAINAGE

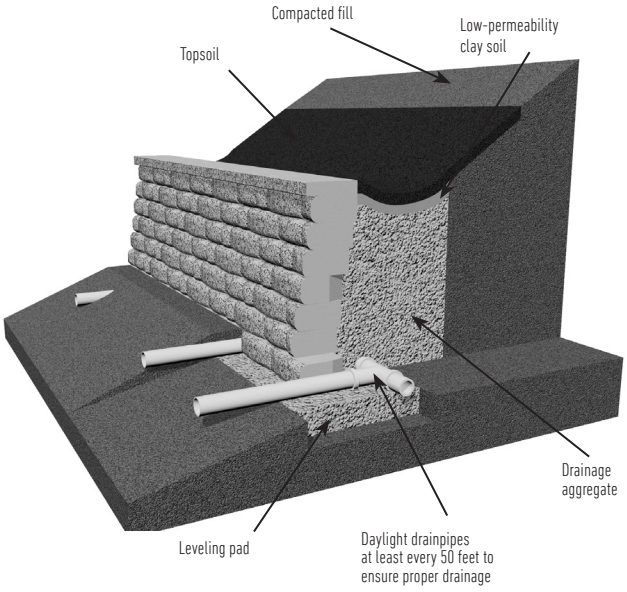
- Protect the wall with a finished grade at the top and bottom.
- To ensure proper water drainage away from the wall, use 8 inches of soil with low permeability. This will minimize water seeping into the soil and gravel fill behind the wall. *See Drainage Swales.*

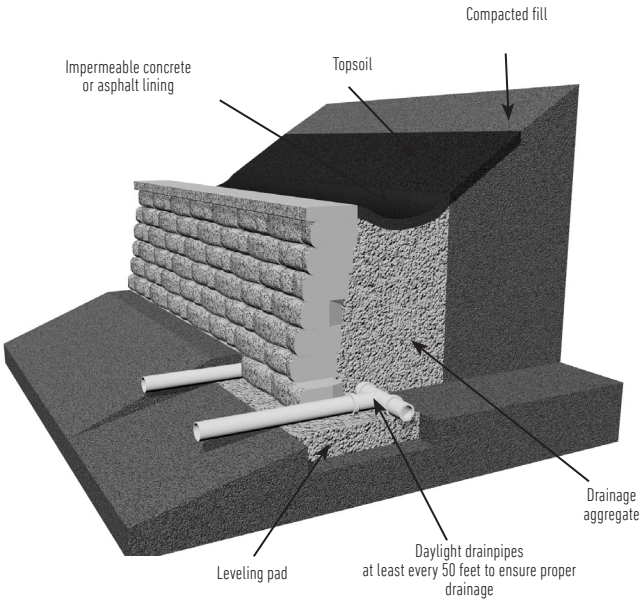
SITE CLEANING AND RESTORATION

- Brush off the wall and pick up any debris left from the construction process.
- Notify the job superintendent in writing of the project's completion and that it is ready for final inspection and acceptance.
- Planting vegetation in front and on top of the wall will help reduce the chance of erosion.
- Following the best practices for construction will ensure the successful installation of Anchor™ products.

DRAINAGE SWALES

- Design and performance of most retaining walls are based on keeping the reinforced zone relatively dry. Appropriate





SAFETY NOTE: Always use appropriate equipment, including safety glasses or goggles and respirators, when splitting, cutting or hammering units. Refer to the NCMA Segmental Retaining Wall Installation Guide at www.ncma.org.

ANCHORPLEX® SYSTEM CONSTRUCTION GUIDE

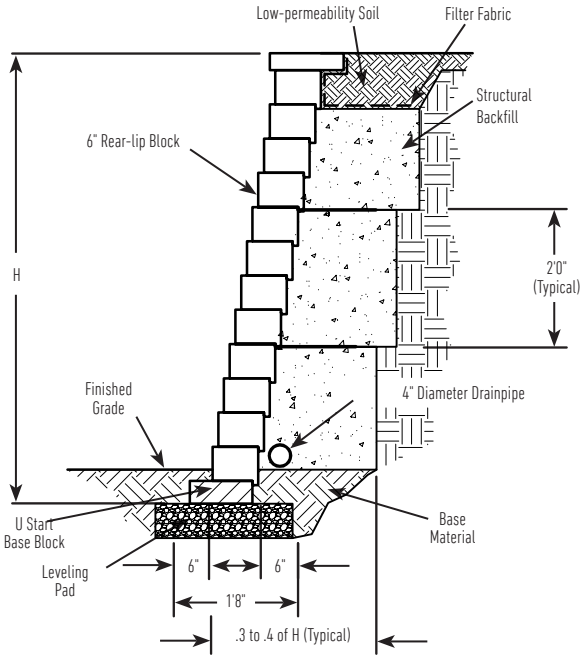
HOW TO USE THIS GUIDE

Use this information to gain a general understanding of the basics of building retaining walls with the Anchorplex system. Do not use this in lieu of construction drawings provided by a qualified engineer. Contact Anchor Wall Systems at 1-877-295-5415 for more information about designing and building with the Anchorplex system.

ABOUT THE ANCHORPLEX® SYSTEM

The Anchorplex system is a retaining wall built with Anchor products and self-compacting structural backfill, also known as "no-fines" concrete, which is a highly-porous mixture of clean stone, cement and water. The mixing ratios (by weight) of aggregate to cementitious material should be between 6:1 and 7:1. The mixing rate (by weight) of water to cementitious material should be no more than 1:2. The resulting material, upon curing, should have at least 25 percent voids and should exhibit a minimum compressive strength (f1c) of 1,500 psi.

EXAMPLE: 6" MULTI-PEICE RETAINING WALL SYSTEM USING THE ANCHORPLEX SYSTEM

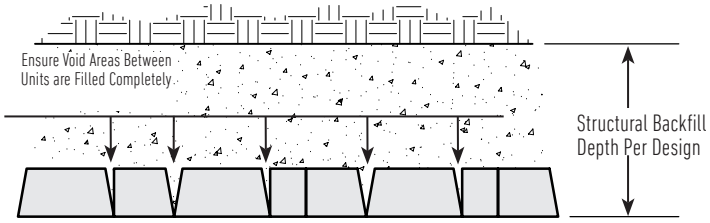


RETAINING WALL CONSTRUCTION

Setting out the wall and excavation is no different for an Anchorplex system construction than for conventional construction, except that the amount of excavation will probably differ. Construction of the leveling pad, base course, subsequent courses and drainage is no different for an Anchorplex system construction than for conventional construction.

INSTALLATION OF STRUCTURAL BACKFILL

After completion of the leveling pad, base course, drainpipe installation and stacking block 2 feet above grade, the first lift of structural backfill that meets Anchor Wall Systems' specifications can be installed. Do not exceed 2 feet vertical stacking of block before placing a lift of structural backfill



The structural backfill can be placed directly from delivery vehicle or with skid-type loader or other equipment. It should be placed behind the blocks and worked into all voids and cores of the blocks (if applicable). When properly formulated, the structural backfill will not leak through the face of the wall.

After installation of the first lift of structural backfill, install additional courses and repeat the process. Place additional lifts every 8 to 24 inches depending on site conditions and project scale. Subsequent pours can be made as soon as the structural backfill in the previous lift has set — usually within 2 to 3 hours.

INSTALLATION OF FILTER FABRIC

Place a layer of filter fabric over the structural backfill and up the back of the top course and the cap. Then fill behind the top course and cap with low-permeability soil.

CAPPING & FINISHING

Follow standard practice when capping the wall. Protect the wall with a finish grade at the top and bottom.

STEPS IN A CURVED WALL

These drawings show Highland Stone®, Diamond® and Diamond Stone Cut® step units. Caps or pavers can be used for treads. Check local building codes for any tread depth standards.



BASE COURSE

Thoroughly compact the leveling pad. Lay out the base course according to the wall design. Place step units first, working from the center to each side. Remember, it is very important to backfill and compact behind and along the sides of each course of step units.



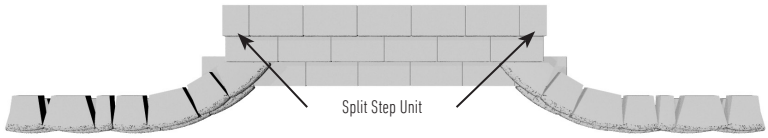
FIRST STEP COURSE

Place the first course of step units directly on top of the base course so there is no setback. Stagger them from the previous course and glue in place.



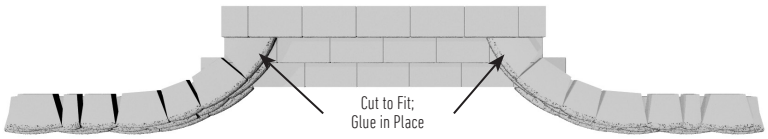
SECOND STEP COURSE

Add the second course of steps, staggering them from the previous course to maintain running bond. Overlap the lower course by a minimum 2 inches and glue to lower course. Place and compact base material prior to installing next course.



NEXT WALL COURSE

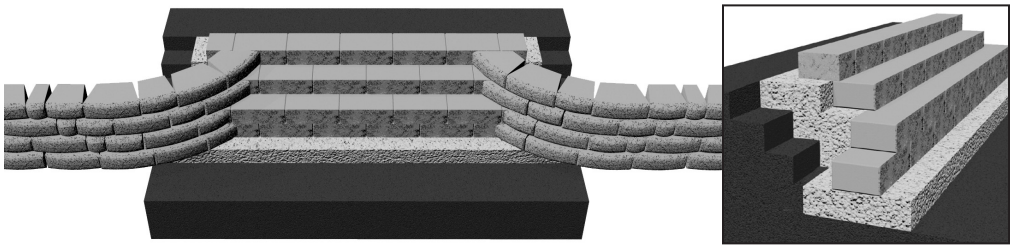
Place a block near the second course of steps, maintaining running bond with the base course. Measure and cut a block to fit the space remaining between the step unit and the next course of the wall. Place the unit in the wall, making sure that both vertical edges fit tight against both the step and standard unit. Remove the rear lip on the blocks when necessary, and angle the blocks flush with the face of the previous course. Glue in place with a concrete adhesive. Repeat these steps until the wall is finished.



ADDITIONAL COURSES

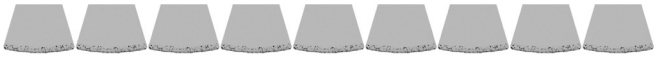
Beginning in the center, add the third course of steps, lining up the units with the first course. Overlap a minimum 2 inches and glue in place. Repeat until the steps are finished.

DRAINAGE TIP: Drain pipe can be placed behind the lowest step units at grade or behind each wall adjacent to the steps.



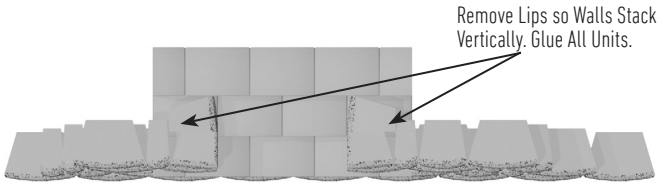
STEPS IN A 90-DEGREE WALL

These drawings show Highland Stone®, Diamond® and Diamond Stone Cut® step units. Caps or pavers can be used for treads. Check local building codes for any tread depth standards.



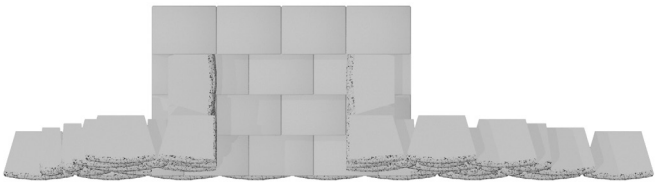
BASE COURSE

Thoroughly compact the leveling pad. Lay out the base course according to the wall design. Place step units first, working from the center to each side. Remember, it is very important to backfill and compact behind and along the sides of each course of step units.



FIRST STEP COURSE

Place the first course of step units directly on top of the base course so there is no setback. Stagger them from the previous course and glue in place.



SECOND STEP COURSE

Add the second course of steps, staggering them from the previous course to maintain running bond. Overlap the lower course by a minimum 2 inches and glue to lower course. Place and compact base material prior to installing next course.

SECOND WALL COURSE

Build the second course of the wall. Corner units are used at the end of steps tied into wall and glued in place. Alternate long and short direction of corner unit every other row.

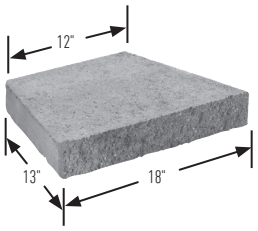
THIRD STEP COURSE

Beginning in the center, add the third course of steps, lining up the units with the first course. Overlap the lower course by 2 inches and glue to lower course.

ADDITIONAL COURSES

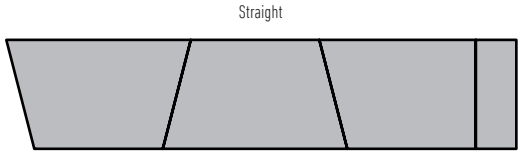
Build the third course of the wall. Repeat these steps until the wall is finished.

XL™ CAP



STRAIGHT WALL

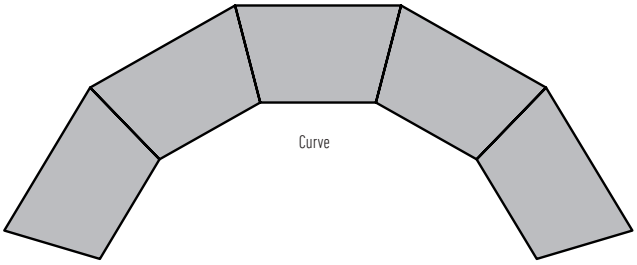
The XL™ cap must be laid alternately, short and long faces for a straight line. Always start capping from the lowest elevation. Once caps are aligned, caps should be glued in place using a concrete adhesive.



CURVES

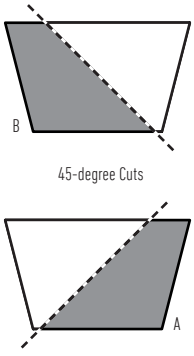
Lay out the cap units side by side with the same face facing out (long faces for outside curves; short face to inside curves). If there's a need to adjust for project's radius, make cuts at least every other cap as needed for the most pleasing aesthetic.

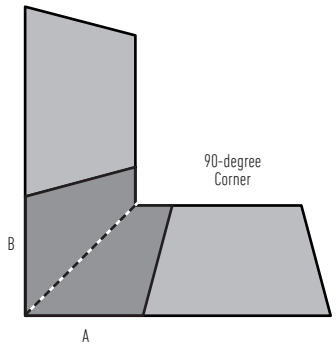
- Minimum radius with XL™ cap: 2 feet 2 inches



90-DEGREE CORNERS

Saw-cut two caps to achieve a 45-degree mitered corner.



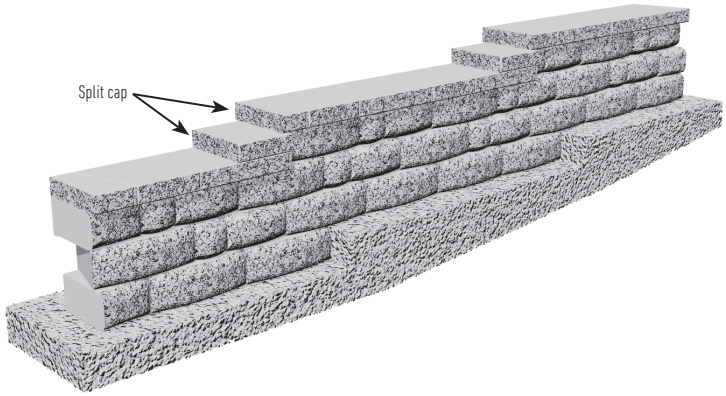


STEPPING UP CAPS WITH XL™ CAP

If the wall elevation changes, caps can be stacked where the wall steps up. Begin laying caps at the lowest elevation change and work your way toward the next step up. Split* a cap unit to fit. Place the split unit directly on top of the capped portion of the wall with all three split faces exposed.

FINISHING WITH XL™ CAP

After layout is complete and caps are saw-cut or split to size, carefully place concrete adhesive on wall top course and then place caps.

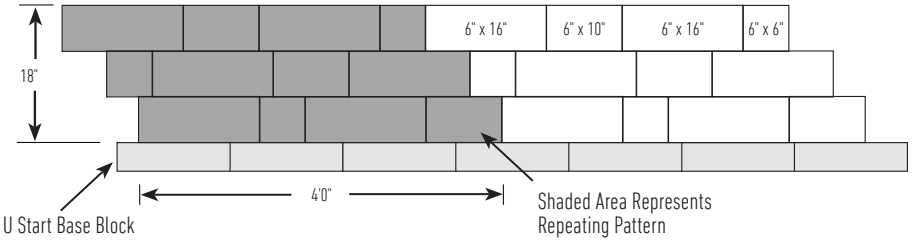


***NOTE:** To split a block, use a hydraulic splitter or split manually by using a hammer and chisel to score the block on all sides. Pound the chisel on the same line until the block splits. If partial unit sides are not exposed, use a saw with a diamond blade to achieve a tighter fit.

LAYING PATTERN AND INSTALLATION GUIDE FOR MULTI-PIECE FREESTANDING WALL

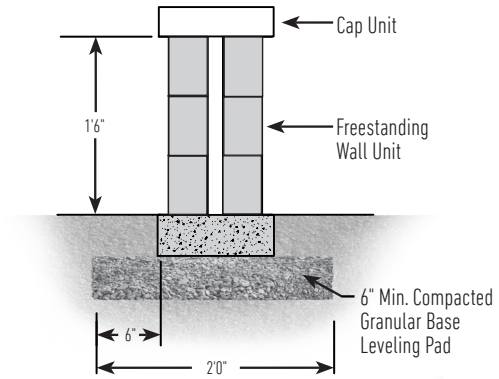
WHEN TO USE A PATTERN FOR FREESTANDING WALLS

One set of 6-inch-high blocks consists of 2 large units, 1 medium unit and 1 small unit, and is 1 square foot of two sided wall.



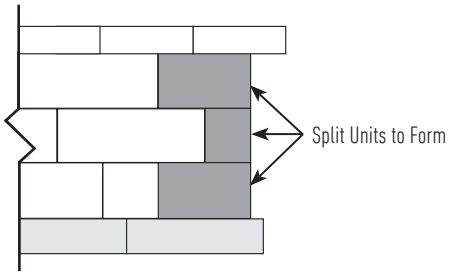
NOTE: These freestanding wall installation patterns show only one side of the freestanding wall. The same number of blocks are needed to build the other side of a freestanding wall when using a back-to-back freestanding wall systems. Freestanding wall installation patterns are measured in length by height of one side of the wall, and are expressed in square feet. Sets of blocks required include the number of blocks needed to build both sides of the wall.

TYPICAL CROSS SECTION



ENDING A WALL WITH WALL ENDS

Start pattern next to a wall end unit if the wall does not end with a column. Using a column unit, every other unit is cut in half to stagger bond. Glue all pieces in place using concrete adhesive.





AB® COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓	✓	✓					✓

SHAPES & SIZES

AB Classic 6° Setback



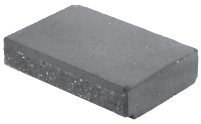
8 x 18 x 12

AB Corner



8 x 16 x 8

AB Cap



4 x 17½ x 12

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
AB CLASSIC							
8 X 18 X 12	40	8	5	40	–	–	3160
AB CORNER							
8 X 16 X 8	–	–	2	24*	–	–	1584
AB CAP							
4 X 17½ X 12	–	–	7	56	–	–	3136

**Pallet contains 12 right corners and 12 left corners*

ASPEN STONE®

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓							✓

SHAPES & SIZES

Block



4 x 11⅝ x 7

3" Universal Cap



3 x 17¼ / 12¼ x 10⅜

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
BLOCK							
4 X 11⅝ X 7	38.64	–	6	120	–	–	2760
3" UNIVERSAL CAP							
3 X 17¼ / 12¼ X 10⅜	–	–	4	48	–	–	2065

ENGINEERED SOLUTIONS BY ANCHOR WALL SYSTEMS

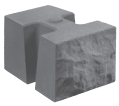
BELAIR WALL® FREESTANDING

NATURAL COLLECTION

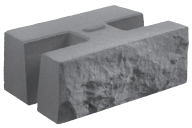
RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓		✓	✓	✓	✓	✓	

SHAPES & SIZES

6" Freestanding Wall

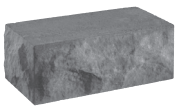


6 x 8 / 6 x 11



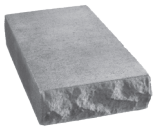
6 x 16 / 14 x 11

Corner/Column



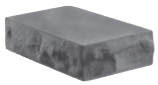
6 x 16 x 8

Cap



3 x 7 / 8 x 13½

Cap End



3 x 8 x 13½

Wall End



6 x 8 x 11

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
WALL UNIT							
6 X 8 / 6 X 11	–	–	–	18	–	–	–
6 X 16 / 14 X 11	–	–	–	18	–	–	–
TOTAL	18	6	3	36	–	–	1580
CORNER/COLUMN							
6 X 16 X 8	–	–	2	20	–	–	1360
CAP							
3 X 7 / 8 X 131/2	–	–	8	144	–	–	3240
CAP END							
3 X 8 X 131/2	–	–	2	36	–	–	882
WALL END							
6 X 8 X 11	–	–	2	42	–	–	1550

ENGINEERED SOLUTIONS BY ANCHOR WALL SYSTEMS

BELAIR WALL® RETAINING

NATURAL COLLECTION

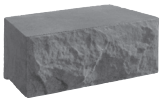
RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓		✓	✓	✓	✓		✓

SHAPES & SIZES

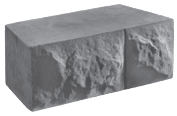
6" Retaining Wall



6 x 8 x 8

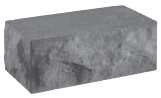


6 x 16 x 8



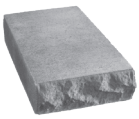
6 x 16 x 8
w / microjoint

Corner/ Column



6 x 16 x 8

Cap



3 x 7 / 8 x 13½

Cap End



3 x 8 x 13½

Wall End



6 x 8 x 11

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
WALL UNIT							
6 X 8 X 8	–	–	–	30	–	–	–
6 X 16 X 8	–	–	–	15	–		
6 X 16 X 8 W / MICROJOINT	–	–	–	15	–	–	–
TOTAL	30	10	3	60	–	–	2360
CORNER/COLUMN							
6 X 16 X 8	–	–	2	20	–	–	1360
CAP							
3 X 7 / 8 X 131/2	–	–	8	144	–	–	3240
CAP END							
3 X 8 X 131/2	–	–	2	36	–	–	882
WALL END							
6 X 8 X 11	–	–	2	42	–	–	1550

ENGINEERED SOLUTIONS BY ANCHOR WALL SYSTEMS

BROOKSHIRE™ 3" WALL

HERITAGE COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓		✓	✓	✓	✓	✓	✓

SHAPES & SIZES

3" Brookshire Wall



3 x 6 / 4 x 9 | 3 x 12 / 10 x 9 | 3 x 16 / 14 x 9

Corner / Column



3 x 15 / 14 x 9

Cap



3 x 18 / 12 x 13

Anchor™ Pins



5" L x .05" dia.
Sold Separately

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
3" WALL UNIT							
3 X 6 / 4 X 9	–	–	–	50	–	–	–
3 X 12 / 10 X 9	–	–	–	50	–		
3 X 16 / 14 X 9	–	–	–	50	–	–	–
TOTAL	35	3.5	10	150	–	–	3180
3" CORNER/COLUMN							
3 X 15 / 14 X 9	–	–	8	80	–	–	2480
CAP							
3 X 18 / 12 X 13	–	–	6	54	–	–	2400
ANCHOR™ PINS							
5" L X .05" DIA. SOLD SEPARATELY	–	–	-	100*	–	–	–

**100 units per box*

ENGINEERED SOLUTIONS BY ANCHOR™ WALL SYSTEMS

BROOKSHIRE™ 6" WALL

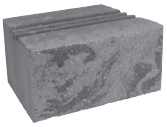
RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓		✓	✓	✓	✓	✓	✓

SHAPES & SIZES

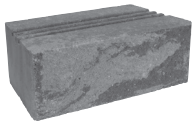
6" Brookshire Wall



6 x 6 / 4 x 9



6 x 12 / 10 x 9



6 x 16 / 14 x 9

Corner / Column



6 x 15 / 14 x 9

Cap



6 x 18 / 12 x 13

Anchor™ Pins



5" L x .05" dia.
Sold Separately

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
6" WALL UNIT							
6 X 6 / 4 X 9	–	–	–	15	–	–	–
6 X 12 / 10 X 9	–	–	–	15	–		
6 X 16 / 14 X 9	–	–	–	15	–	–	–
TOTAL	35	7	5	75	–	–	3380
6" CORNER/COLUMN							
6 X 15 / 14 X 9	–	–	4	40	–	–	2360
CAP							
6 X 18 / 12 X 13	–	–	6	54	–	–	2400
ANCHOR™ PINS							
5" L X .05" DIA. SOLD SEPARATELY	–	–	–	100	–	–	–

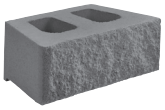
DIAMOND® 9D

LEGACY COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓		✓	✓				✓

SHAPES & SIZES

Diamond® 9D



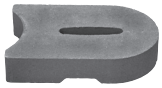
6 x 17¾ x 9

Corner/Column



6 x 16 x 8

U Start Base Block



3½ x 18½ x 12

3" Universal Cap



3 x 17¼ / 12¼ x 10⅜

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
DIAMOND® 9D							
6 X 17¾ X 9	44.4	8.88	5	60			3300
CORNER/COLUMN							
6 X 16 X 8	–	–	4	40	–	–	2940
U START BASE BLOCK							
3½ X 18½ X 12	–	–	7	56	–	54.5	3052
3" UNIVERSAL CAP							
3 X 17¼ / 12¼ X 10⅜	–	-	4	48	–	-	2065

ENGINEERED SOLUTIONS BY ANCHOR WALL SYSTEMS

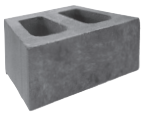
DIAMOND PRO® PS QUARRIED FACE

LEGACY COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓	✓	✓	✓				✓

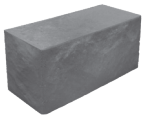
SHAPES & SIZES

Wall Unit



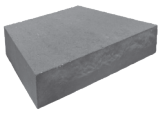
8 x 18 x 12

Corner/Column



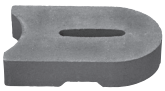
8 x 17 x 7.5

Cap



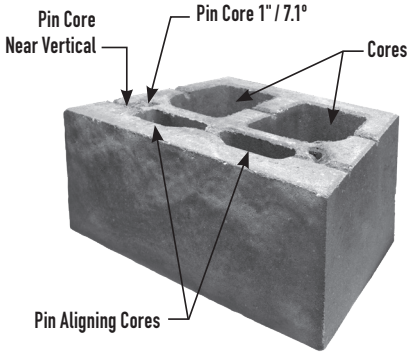
4 x 17¼ / 12¼ x 10⅜

U Start Base Block



3½ x 18½ x 12

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
WALL UNIT							
8 X 18 X 12	36	-	4	36	-	-	2680
CORNER/COLUMN							
8 X 17 X 7.5	-	–	-	24	-	-	2480
CAP							
4 X 17¼ / 12¼ X 10⅜	-	-	-	54	-	–	2386
U START BASE BLOCK							
3½ X 18½ X 12	–	–	7	56	–	54.5	3052



ENGINEERED SOLUTIONS BY ANCHOR WALL SYSTEMS

DIAMOND PRO® PS

LEGACY COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓	✓	✓	✓				✓

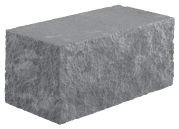
SHAPES & SIZES

Pro PS Block



8 x 18 x 12

Pro Corner/Column



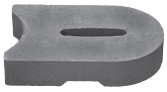
8 x 18 x 9

4" Universal Cap



4 x 17¼ / 12¼ x 10⅜

U Start Base Block



3½ x 18½ x 12

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
STRAIGHT FACE & VICTORIAN FACE PRO PS BLOCK							
8 X 18 X 12	48	–	4	48	–	80	3695
PRO CORNER/COLUMN							
8 X 18 X 9	36	–	3	36	–	88	3720
4" PRO PS CAP							
4 X 17¼ / 12¼ X 10⅜	–	–	9	72	–	–	3180
U START BASE BLOCK							
3½ X 18½ X 12	–	–	7	56	–	54.5	3052

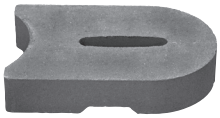
ENGINEERED SOLUTIONS BY ANCHOR WALL SYSTEMS

U START BASE BLOCK®

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓	✓	✓	✓	✓	✓	✓	✓

SHAPES & SIZES

U Start Base Block



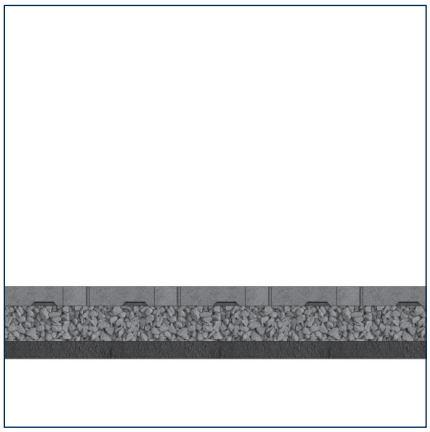
18⁷⁄₁₆ x 12 x 3½

Base Block with Tandem Wall

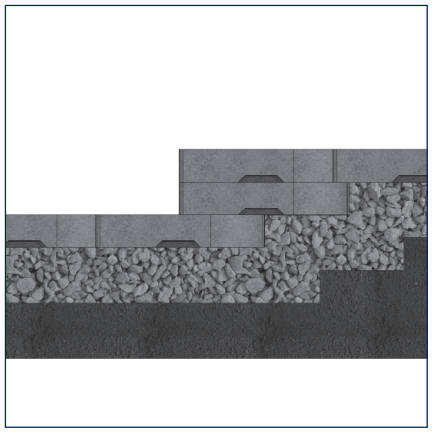


*Note: U Start Base Block actual coverage length is 16¹¹⁄₁₆

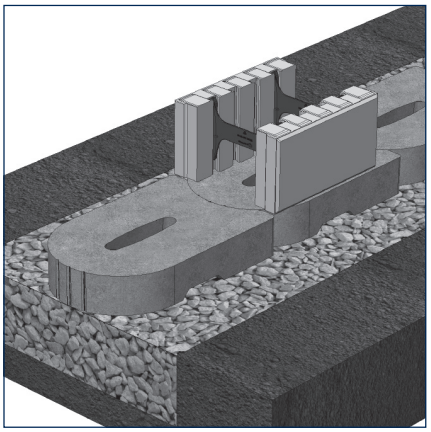
INSTALLATION INSTRUCTIONS



Prep Site



Install Base Course



Install the Wall

UNIT	LF/ PALLET	LF/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
U START BASE BLOCK							
3½ X 18½ X 12	86.33	–	7	56	–	54.5	3052

WESTON STONE

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓		✓	✓	✓	✓	✓	✓

SHAPES & SIZES

Universal



4 x 12 x 8

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
UNIVERSAL							
4 X 12 X 8	40	6.7	6	120	0.33	29	3480

VERSATILE LANDSCAPING

VERSATILE LANDSCAPING

94 Artforms™

96 Ashlar Tandem™ Wall

97 Lafitt Tandem™ Wall

98 Tandem® Column Kits

99 Tandem® Modular Grid

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓	✓		✓	✓	✓		

SHAPES & SIZES

18 x 36*



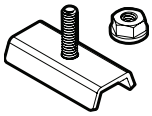
3 × 18 × 36

6 x 36*

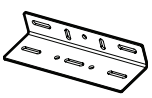


3 × 6 × 36

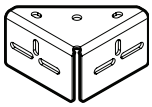
Installaton Hardware



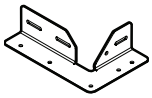
Anchor Slide & Nut



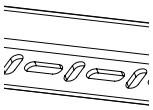
Joining Plate



Outer Corner



Inner Corner



Stretcher

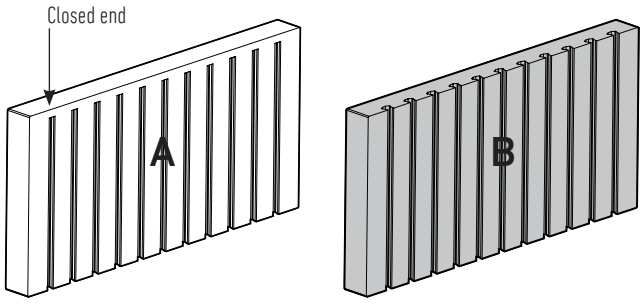
**Pallets contain both open and closed ended units*

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
COPING UNIT							
3 X 18 X 36	81	9	9	18*	2	4.5	2682**
3 X 6 X 36	31.5	10.5	3	21*	7	1.5	1029

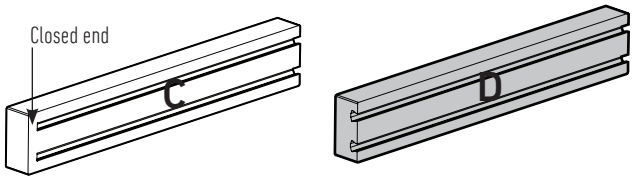
**Total number of both open and closed end panels. 18 x 36 pallets contain 9 of each. 6 x 36 pallets contain 3 open end panels and 18 closed end panels*

***150lbs is the weight for the closed units, 148lbs is the weight for the open units.*

18 X 36 X 3'



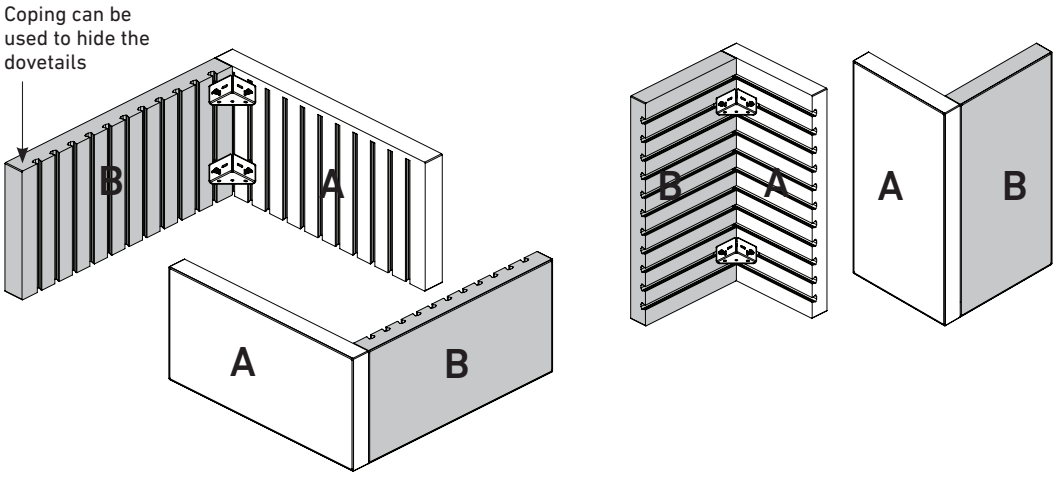
6 X 36 X 3'



PANEL CONFIGURATIONS

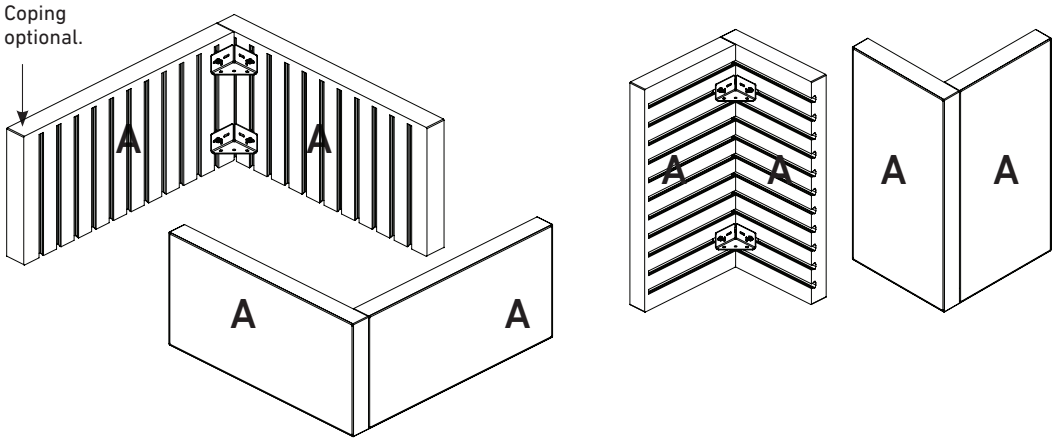
IDEAL:

This configuration uses equal number of panel A and panel B.



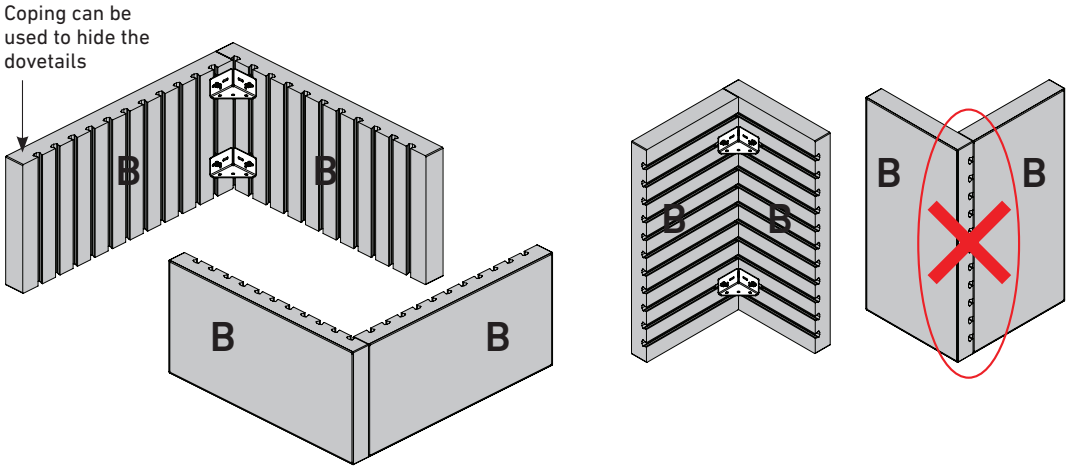
NOT OPTIMAL:

This configuration uses panel A only.



NOT RECOMMENDED:

This configuration uses panel B only and the dovetails are exposed. Use ideal configuration as shown above.



*IMPORTANT: When planning configurations, consider the amount of panel A and panel B on a pallet. 18 x 36' panels are sold in pair/layer or in full pallet only. 6 x 36 panels are sold in layer or in full pallet only.

ASHLAR TANDEM™

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓		✓	✓	✓	✓	✓	✓

SHAPES & SIZES

Tandem Units



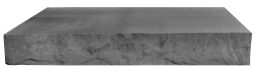
7 x 13⅔ x 2⅝
7 x 15⅔ x 2⅝
7 x 18 x 2⅝

Tandem Solid Units



7 x 13⅔ x 2⅝
7 x 15⅔ x 2⅝
7 x 18 x 2⅝

Tandem Cap



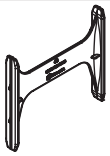
15 x 24 x 3¼

Tandem Modular Block



7 1/16 x 7⅞ x 7⅞

8" Connecting Member



3 x 1⅛ x 12

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
TANDEM UNIT							
7 X 13 3/16 X 2⅝	–	–	–	30	–	–	–
7 X 15 13/16 X 2⅝	–	–	–	30	–	–	–
7 X 18 7/16 X 2⅝	–	–	–	30	–	–	–
TOTAL	70.09 / 35.045 DOUBLE-SIDED	–	6	90	–	–	2032
TANDEM CAP							
15 X 24 X 3¼	–	–	8	32	–	–	3136
TANDEM MODULAR BLOCK							
7 1/16 X 7⅞ X 7⅞	49.2	–	4	128	–	–	2688
8" CONNECTING MEMBER							
3 X 1⅛ X 12	–	–	–	30*	–	–	–

**30 units per bag.*

LAFITT TANDEM™

NATURAL COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓		✓	✓	✓	✓	✓	✓

SHAPES & SIZES

Tandem Units



7 x 13 3/16 x 2 5/8

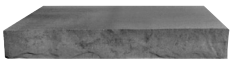


7 x 15 13/16 x 2 5/8



7 x 18 7/16 x 2 5/8

Tandem Cap



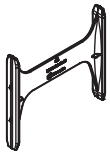
15 x 24 x 3 1/4

Tandem Modular Block



7 1/16 x 7 7/8 x 7 7/8

8" Connecting Member



3 x 1 1/8 x 12

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
TANDEM UNIT							
7 X 13 3/16 X 2 5/8	–	–	–	–	–	–	–
7 X 15 13/16 X 2 5/8	–	–	–	–	–	–	–
7 X 18 7/16 X 2 5/8	–	–	–	–	–	–	–
TOTAL	70.09 / 35.045 IF DOUBLE-SIDED	–	6	90	–	–	2032
TANDEM CAP							
15 X 24 X 3 1/4	-	–	8	32	–	–	3136
TANDEM MODULAR BLOCK							
7 1/16 X 7 7/8 X 7 7/8	49.2	–	4	128	–	–	2688
8" CONNECTING MEMBER							
3 X 1 1/8 X 12	–	–	–	30	–	–	–

**30 units per bag.*

TANDEM® COLUMN KITS

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓			✓				

SHAPES & SIZES

Tandem Units:



Ashlar Tandem™
7 x 18 7/16 x 2 5/8

OR



Lafitt Tandem™
7 x 18 7/16 x 2 5/8

Tandem Veneer Units available in three sizes. Units only available in 7" height.

Column Grid



HEIGHT: 42"

Column/Modular Grid Connector



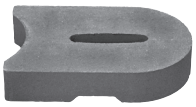
12 x 24 x 3

Tandem Column Cap



24 x 24 x 3 1/4
SOLD SEPARATELY

U Start Base Block®



*Note: U Start Base Block actual coverage length is 16 11/16

12 x 18 7/16 x 3 1/2
SOLD SEPARATELY

*Tandem Column Kit includes 1 Column Grid & 1 Bag of Tandem Connectors



See the installation video at Belgard.com/Tandem

TANDEM® MODULAR GRID

LEGACY COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓	✓		✓	✓	✓		

SHAPES & SIZES

Ashlar Tandem™ Unit 1



Ashlar Tandem™ Unit 2



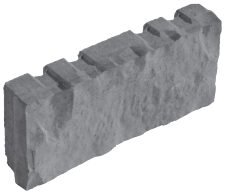
Ashlar Tandem™ Unit 3



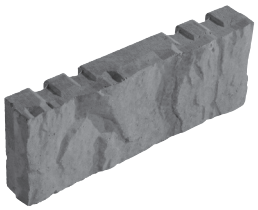
Lafitt Tandem™ Unit 1



Lafitt Tandem™ Unit 2

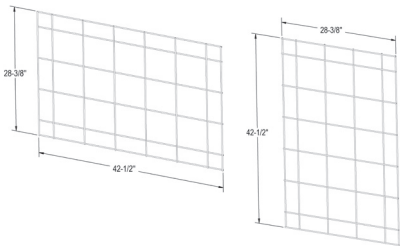


Lafitt Tandem™ Unit 3



*Tandem Veneer Units available in three sizes. Units only available in 7" height.
**Pieces of both Ashlar & Lafitt Tandem mixed in with Ashlar Tandem Pallet.

Modular Grid



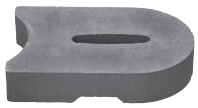
Vertical or Horizontal Application

Column/Modular Grid Connector



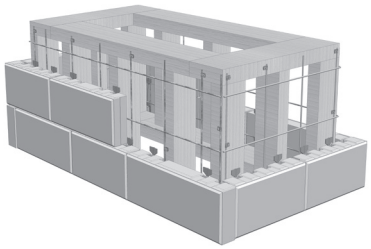
12 x 24 x 3

U Start Base Block®



12 x 18 7/16 x 3½
SOLD SEPARATELY

Modular Kit includes: 1 Modular Grid & 1 Bag of Tandem Connectors



See the installation video at Belgard.com/Tandem

FIRE FEATURES

FIRE INSTALLATION GUIDE

101 Installation Instructions

FIRE FEATURES

103 Bordeaux Series™

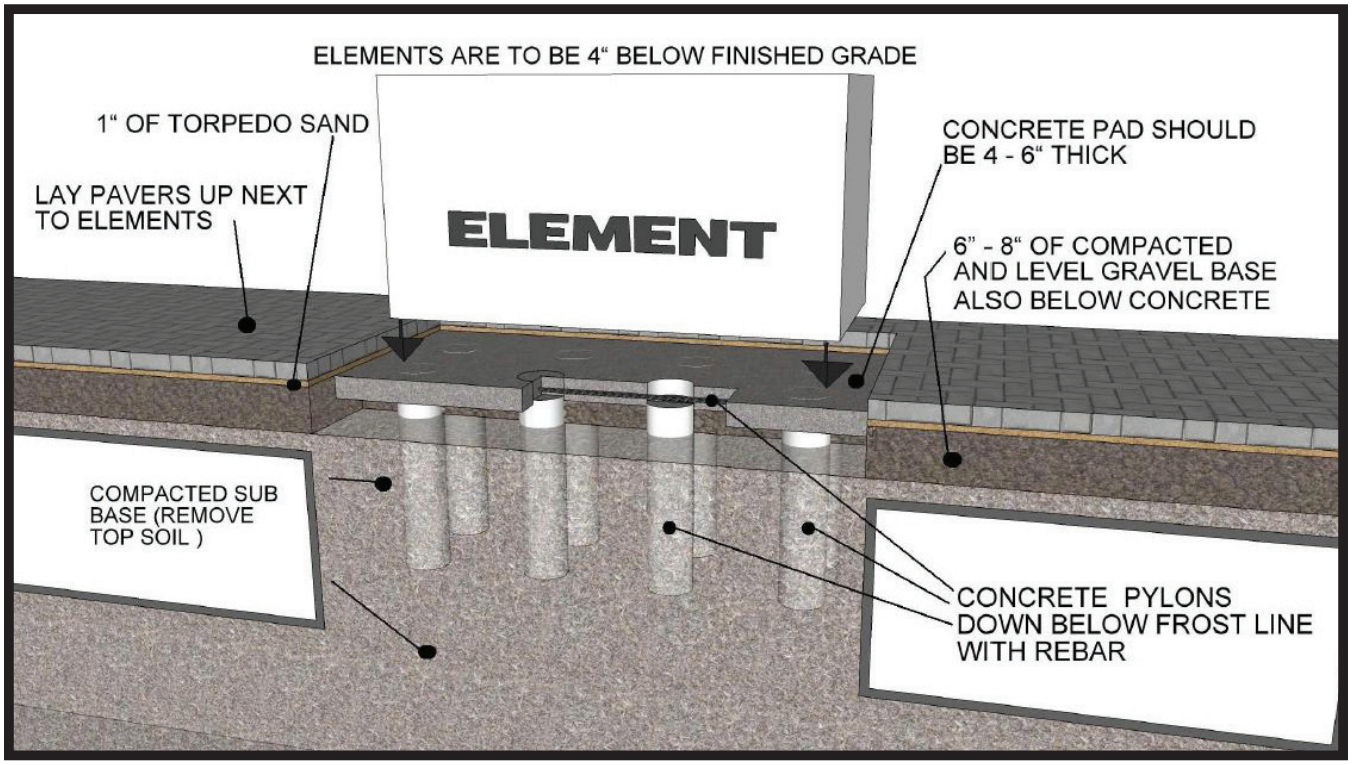
106 Brighton Series™

108 Bristol Series™

110 Brookshire™ Fire Pit

111 Weston Stone™ Fire Pit

INSTALLATION INSTRUCTIONS



Make sure you check with your local municipality for their requirements when installing fire features.

A FEW KEY POINTS TO REMEMBER:

- Always place a piece of material (plywood or carpet work well) between your forks and the Fire features to prevent chipping.
- Always transport the Fire feature on the pallet it comes with until you are ready to place on the permanent location.
- Make sure to use a ratchet strap to secure the Fire feature to the loader when transporting and placing.
- Handle Fire features with care - they are concrete, but not indestructible.
- Make sure to size the machine to the Fire features weight.
- All Fire features are designed to be buried 4" below finish grade.

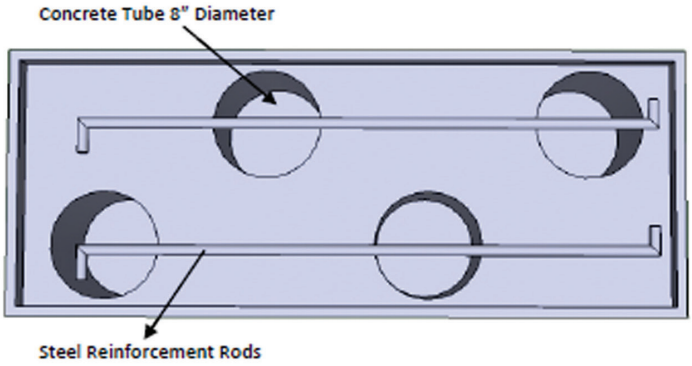


INSTALLATION INSTRUCTIONS

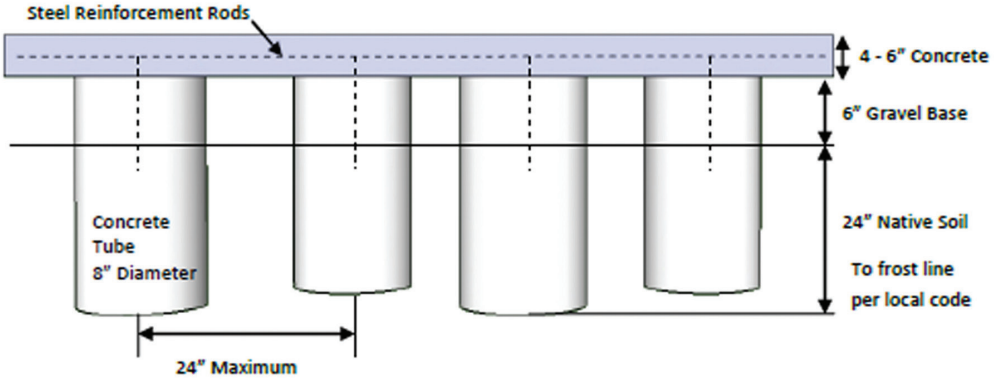
Typical Cross Section for Concrete Pad Installation

***The following measurements are a suggestion. Always check your local building codes first.*

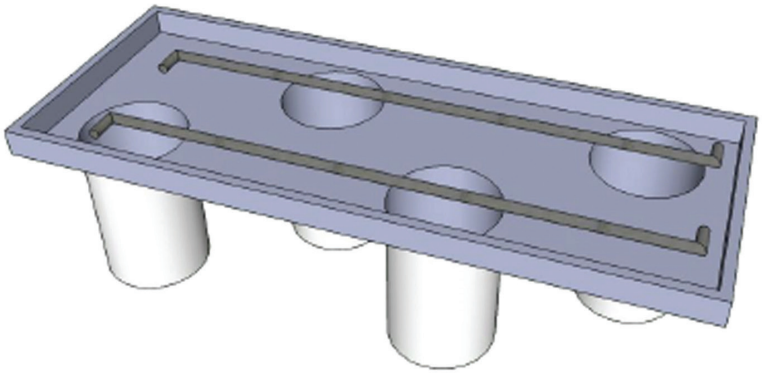
Top View



Side View



3D View

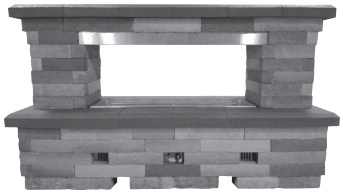


For areas not affected by freeze-thaw conditions please contact your local Belgard sales representative for further installation information.

BORDEAUX SERIES™





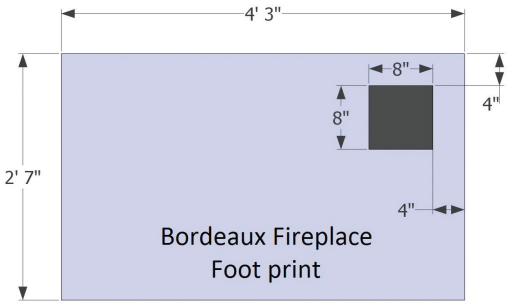


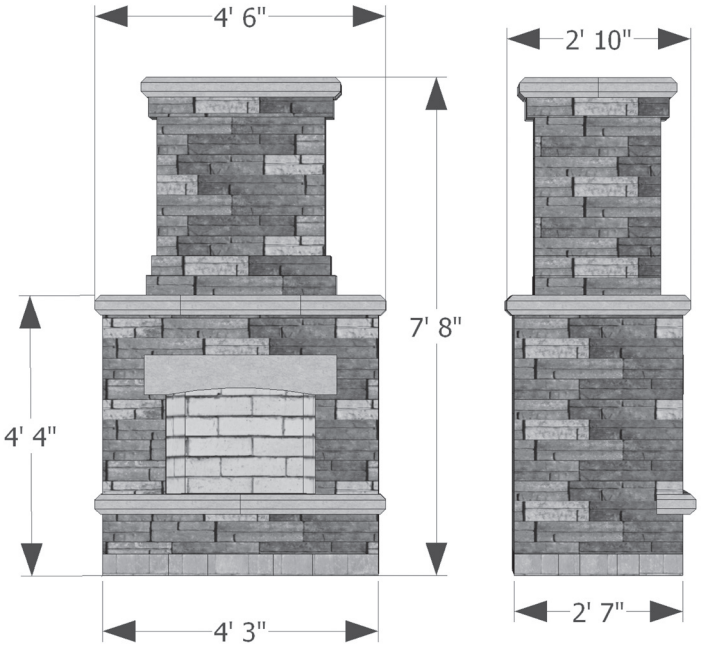






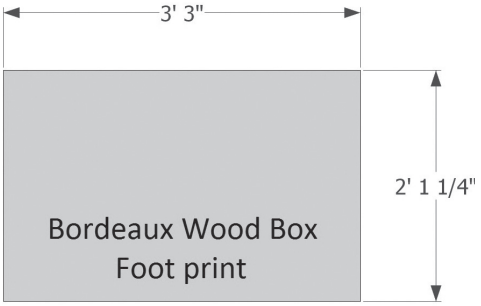
BORDEAUX SERIES™

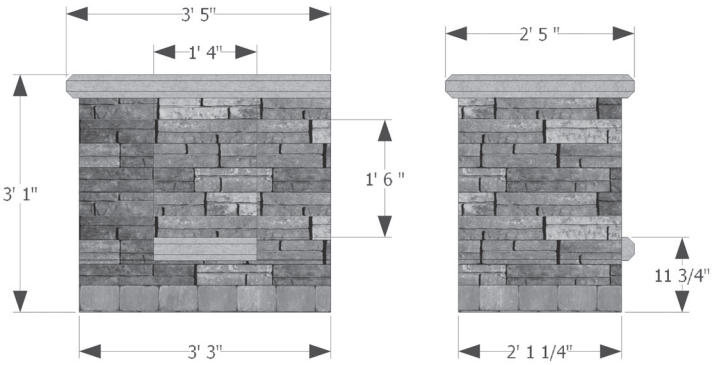




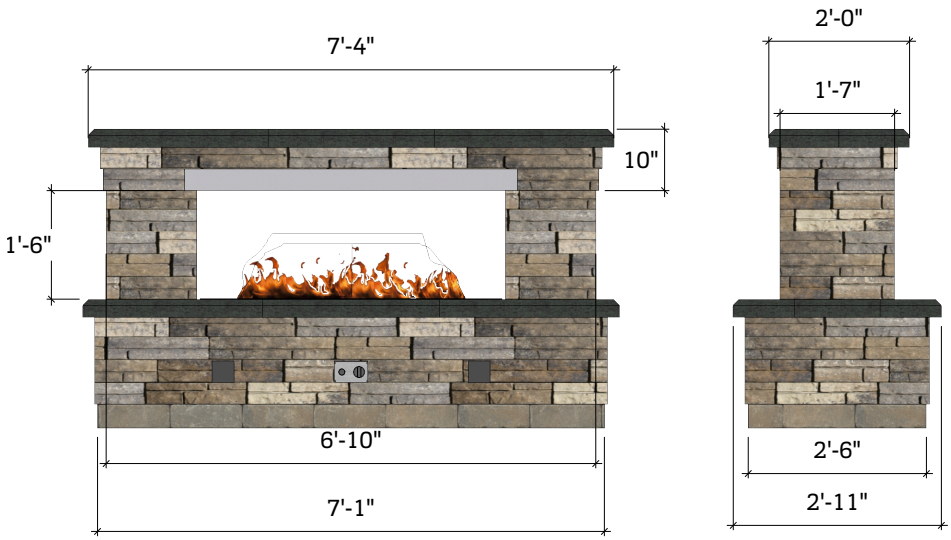
FIREPLACE
Rough Dimensions:
2' 7"D x 4' 3"W x 7' 8"H

WOOD BOXES
Rough Dimensions:
2' 1 1/4"D x 3' 3"W x 3' 1"H

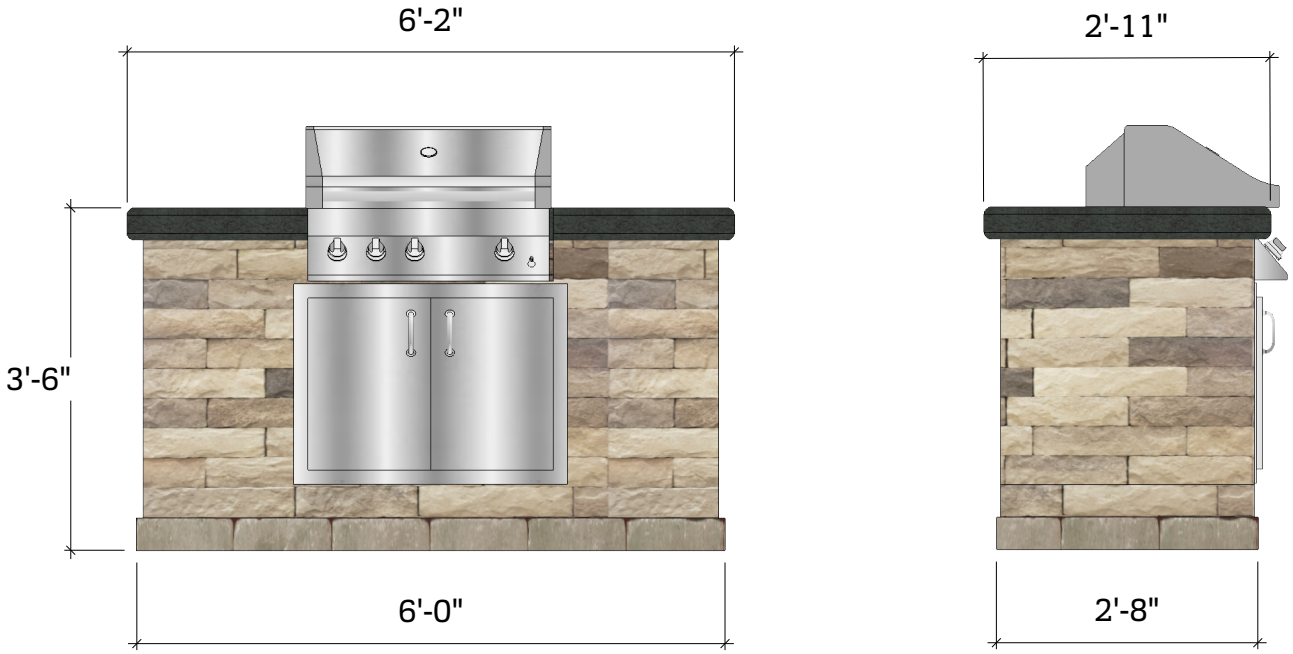




LINEAR FIREPIT
Rough Dimensions:
2' 11"D x 7' 4"W x 5' 4"H



BORDEAUX SERIES™



GRILL ISLAND
Rough Dimensions:
2’ 6”D x 5’ 11”W x 3’ 5”H

FIREPLACE
70300791
Bordeaux Builder Wood Fireplace
Colors: Lamina Sienna/
Cordova Stone Buff Base + Top
13070014
Bordeaux Builder Wood Fireplace
Colors: Lamina Solid Shelby Blend/
Cordova Midnight
Base + Top
13070014
Bordeaux Builder Wood Fireplace
Colors: Lamina Sienna/
Cordova Stone Midnight
Base + Top
Approximate Weight:
Bottom Unit-2850 lbs.
Top Unit-1320 lbs.
Rough Dimensions:
2’ 7”D x 4’ 3”W x 8’H

36” wood burning fireplace can be converted to a vented gas unit on-site.

WOOD BOXES
13140001
Bordeaux Wood Boxes (Pair)
Colors: Lamina Sienna/
Cordova Stone Buff
13140020
Bordeaux Wood Boxes (Pair)
Colors: Lamina Sienna/
Cordova Stone Midnight
13140505
Bordeaux Wood Boxes (Pair)
Colors: Lamina Solid Shelby Blend/
Cordova Stone Midnight
Approximate Weight:
3070 lbs.
Rough Dimensions:
2’ 1 ¼”D x 3’ 3”W x 3’ 1”H

GRILL ISLAND
Bordeaux Grill Island
Colors: Lamina Sienna/
Cordova Stone Buff
+ Stainless
Bordeaux Grill Island
Colors: Lamina Sienna/
Cordova Stone Midnight
+ Stainless
Bordeaux Grill Island
Colors: Lamina Solid Shelby Blend/
Cordova Stone Midnight
+ Stainless
Approximate Weight:
3055 lbs.
Rough Dimensions:
2’ 6”D x 5’ 11”W x 3’ 5”H

BRIGHTON SERIES™



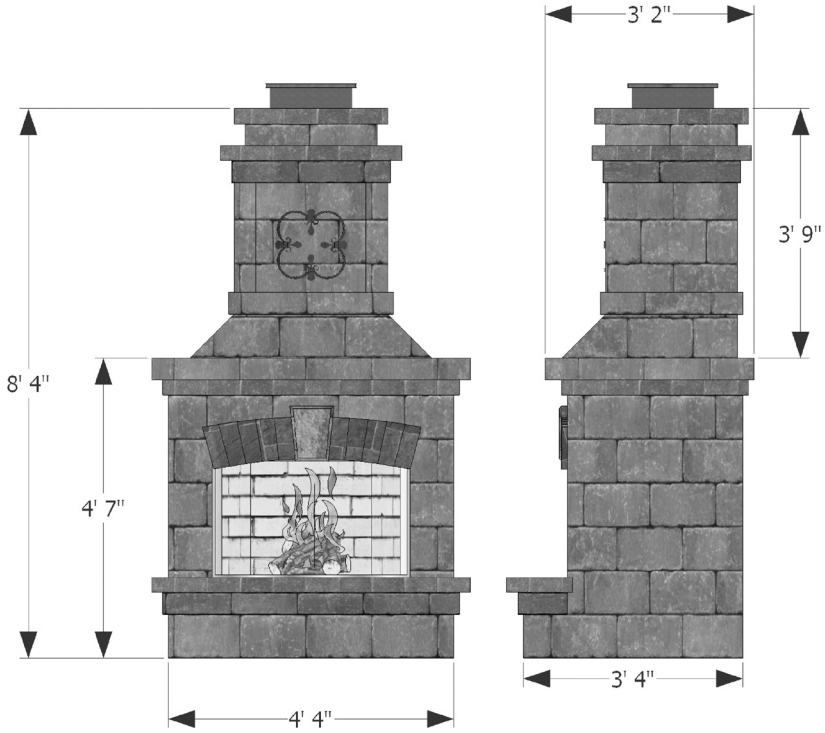




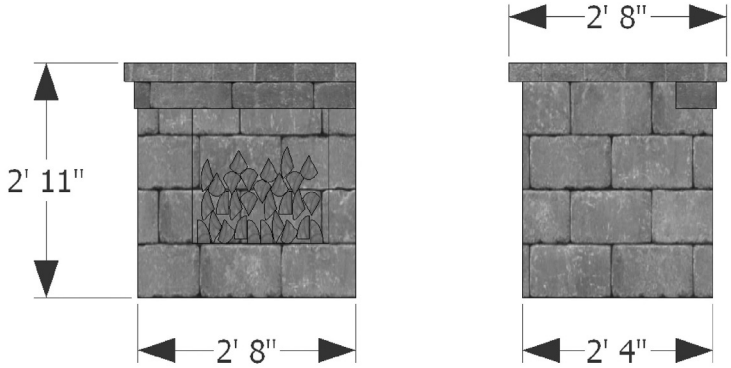
BRIGHTON SERIES™

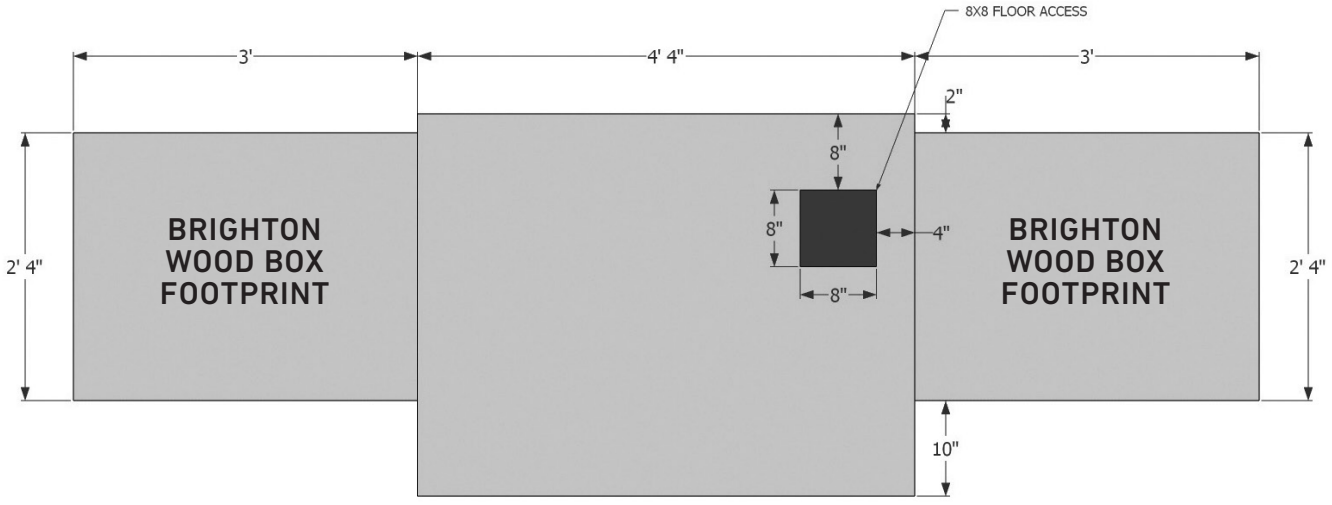
FIREPLACE
70580007
Brighton Fireplace
Colors: Weston Gascony Tan/Urbana Ashbury Haze Base + Top
70580378
Brighton Fireplace
Colors: Weston Cotswold Mist/Urbana Brookstone Slate Base + Top
Approximate Weight:
Bottom Unit-4605 lbs.
Top Unit-1230 lbs.
Rough Dimensions:
3' 4"D x 4' 4"W x 8' 4"H

36" wood burning fireplace can be converted to a vented gas unit on-site.



WOOD BOXES
70300046
Brighton Wood Boxes (Pair)
Colors: Weston Gascony Tan/Urbana Ashbury Haze
70580291
Brighton Wood Boxes (Pair)
Colors: Weston Cotswold Mist/Urbana Brookstone Slate
Approximate Weight Per Pair:
3200 lbs.
Rough Dimensions:
2' 4"D x 2' 8"W x 2' 11"H





BRISTOL SERIES™







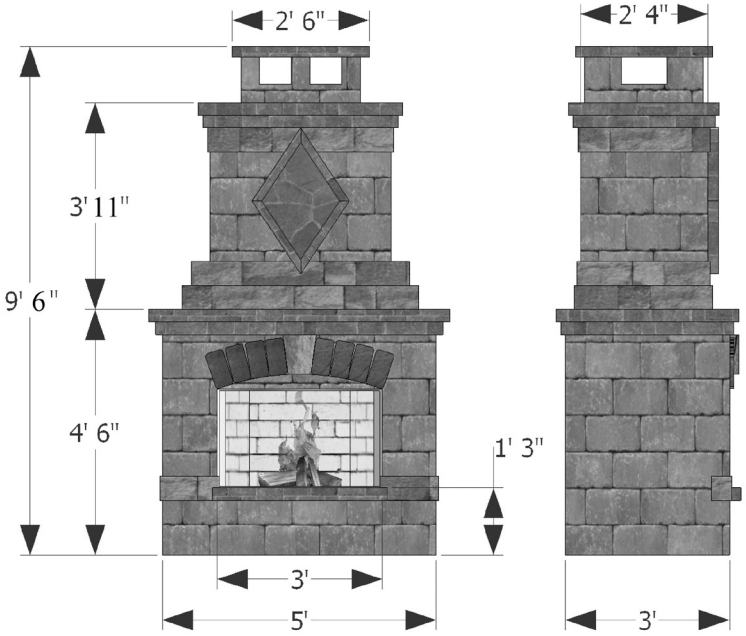




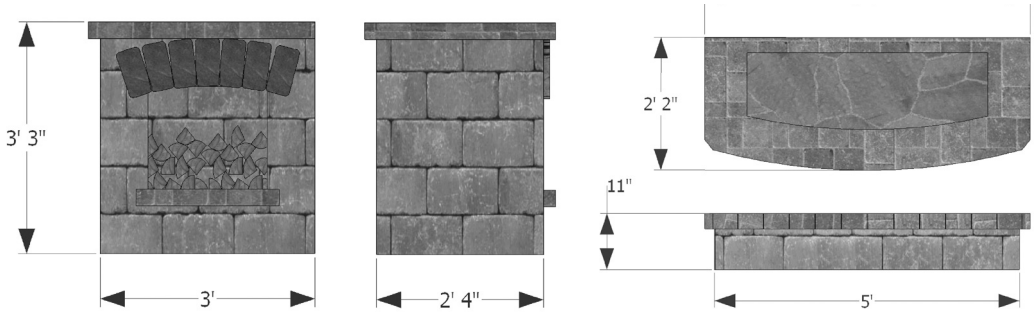
BRISTOL SERIES™

FIREPLACE
70580261
Colors: Weston Gascony Tan/
Arbel Ashbury Haze Base + Top
70580312
Colors: Weston Cotswold Mist/
Arbel Brookstone Slate Base + Top
Approximate Weight:
Bottom Unit-4095 lbs.
Top Unit-3200 lbs.
Rough Dimensions:
3'D x 5'W x 9' 6"H

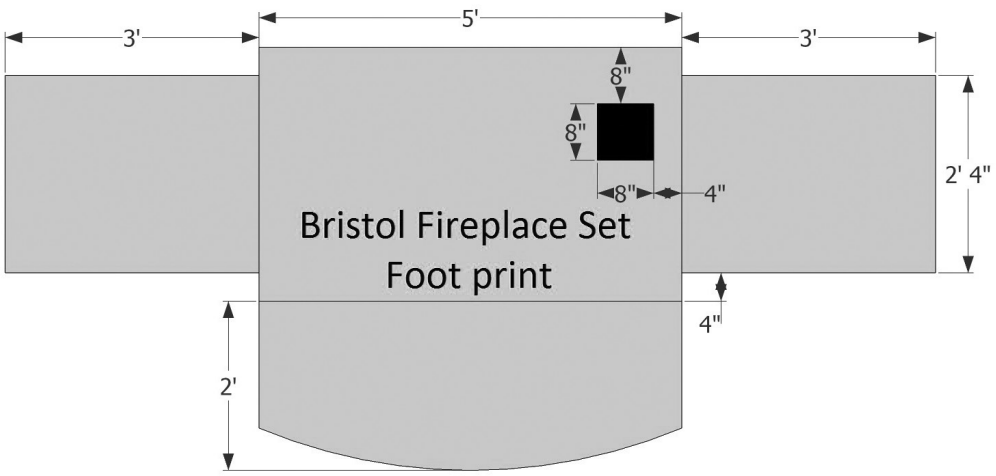
36" wood burning fireplace can be converted to a vented gas unit on-site.



WOOD BOXES (PAIR)
70580334
Colors: Weston Gascony Tan/
Urbana Ashbury Haze
70580534
Colors: Weston Cotswold
Mist/Urbana
Brookstone Slate
Approximate Weight Per Pair:
3950 lbs.
Rough Dimensions:
2' 4"D x 3'W x 3' 3"H



ARCHED HEARTH
70580262
Colors: Weston Gascony Tan/
Arbel Ashbury Haze
70580309
Colors: Weston Cotswold Mist/
Arbel Brookstone Slate
Approximate Weight:
1180 lbs.
Rough Dimensions:
2'D x 5'W x 11"H



BROOKSHIRE™ FIRE PIT

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓				✓			

SHAPES & SIZES

Block



3 x 13 / 7 x 12

Insert



26½ x 26½

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
BLOCK							
3 X 13 / 7 X 12	–	–	–	60	–	–	2100
INSERT							
26½ X 26½	–	–	–	–	–	–	–

WESTON STONE™ FIRE PIT

HERITAGE COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	COLUMNS	FIRE PITS	KITCHEN	FREESTANDING WALL	RETAINING WALL
✓				✓			

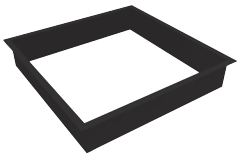
SHAPES & SIZES

Universal



4 x 12 x 8

Square Fire Pit



27¼ x 27¼

Grate



Square Fire Pit:
Outside is 44"
Stacks up to 4 rows high,
12 pieces to each row.
48 pieces required to complete kit.
Cooking grate sold separately.

UNIT	SQFT/ PALLET	SQFT/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ SQFT	WEIGHT/ UNIT	WEIGHT/ PALLET
SQUARE FIRE PIT							
4 X 8 X 12	–	–	–	48	–	–	1298
GRATE							
SOLD SEPARATELY	–	–	–	–	–	–	–

ACCESSORIES



ACCESSORIES

113 Anglia Edger®

114 Brookshire™ Curb

115 Country Manor® Curb

116 Laguna™ Coping

117 Landings™ Step Unit

119 Marina™ Coping

ANGLIA EDGER®

RESIDENTIAL	COMMERCIAL	STEPS	CAPS	COPING
✓				

SHAPES & SIZES

4-piece Coping Unit



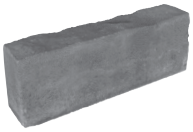
8 x 7⅞ x 4½



8 x 10½ x 4½



8 x 15½ x 4½



8 x 17⅞ x 4½

UNIT	LF/ PALLET	LF/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
ANGLIA EDGER®							
8 X 7⅞ X 4½	–	–	–	12	4	–	–
8 X 10½ X 4½	–	–	–	12	4	–	–
8 X 15½ X 4½	–	–	–	12	4	–	–
8 X 17⅞ X 4½	–	–	–	24	8	–	–
TOTAL	69.75	23.25	3	–	20	–	2678

BROOKSHIRE™ CURB

RESIDENTIAL	COMMERCIAL	STEPS	CAPS	COPING
✓				

SHAPES & SIZES

3-piece Curb Units



3¾ x 7 x 3⅝



3¾ x 9⅞ x 3⅝



3¾ x 10⅞ x 3⅝

UNIT	LF/ PALLET	LF/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
3-PIECE CURB UNITS							
3¾ X 7⅞ X 3⅝	–	–	–	–	–	–	–
3¾ X 9⅞ X 3⅝	–	–	–	–	–	–	–
3¾ X 10⅞ X 3⅝	–	–	–	–	–	–	–
TOTAL	104	26	24	–	–	–	1320

COUNTRY MANOR® CURB STONE

LEGACY COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	CAPS	COPING
✓				

SHAPES & SIZES

Country Manor® Curb Stone

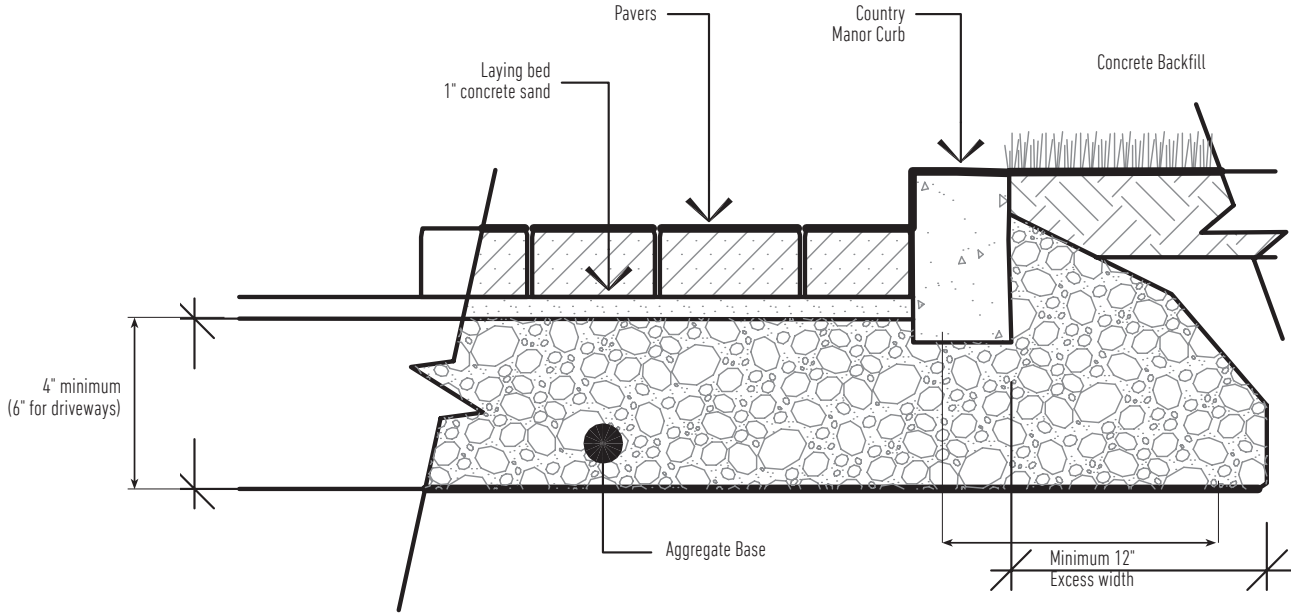


4 x 8 x 12

UNIT	LF/ PALLET	LF/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
COPING UNIT							
4 X 8 X 12	80*	13.3**	6	120	20	–	3540

*120 linear feet per pallet when lying on 12" side.
**20 linear feet per layer when lying on 12" side.

COUNTRY MANOR CURB INSTALLATION INSTRUCTIONS

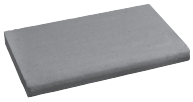


LAGUNA™ COPING

RESIDENTIAL	COMMERCIAL	STEPS	CAPS	COPING
✓		✓		✓

SHAPES & SIZES

Coping Unit



14 3/16 x 23 5/8 x 2 3/8

UNIT	LF/ PALLET	LF/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
COPING UNIT							
14 3/16 X 23 5/8 X 2 3/8	55.125	–	7	28	4	–	1949

LANDINGS™ STEP UNIT

RESIDENTIAL	COMMERCIAL	STEPS	CAPS	COPING
✓		✓		

SHAPES & SIZES

Step Unit



6 x 48 x 18

UNIT	LF/ PALLET	LF/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
STEP UNIT							
6 X 48 X 18	–	–	2	2	–	–	860

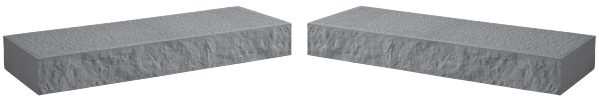
INSTALLATION | LANDINGS STEP UNIT

Each Landings™ step unit is manufactured with two unique face patterns. The step units are palletized and packaged for easy skid-steer loader removal. Care needs to be taken in handling these units. If a blemish occurs on one side of unit, rotate 180° before setting unit into place.

BASE COURSE
Excavate an area 6 inches deep by 1 foot longer by 1 foot wider than the installed step(s) size. Add a minimum of 6 inches of compactable base material, 3⁄4-inch minus (with fines) aggregate. Compact and level. Set unit and, if desired, add a slight pitch of no more than 1⁄4 inch toward the front of the step to shed moisture. If installing step units next to a retaining wall, keep units level from front to back.

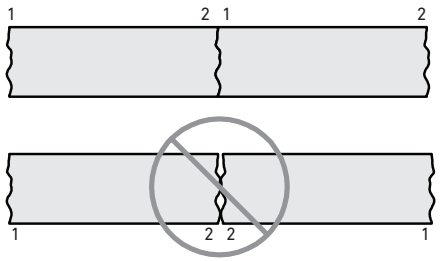
SINGLE STEP
Set step unit onto prepared base course. Level.

STEP UNIT



Two unique faces on each step

The textures on sides 1 and 2 are designed to nest with minimal gapping between the units.



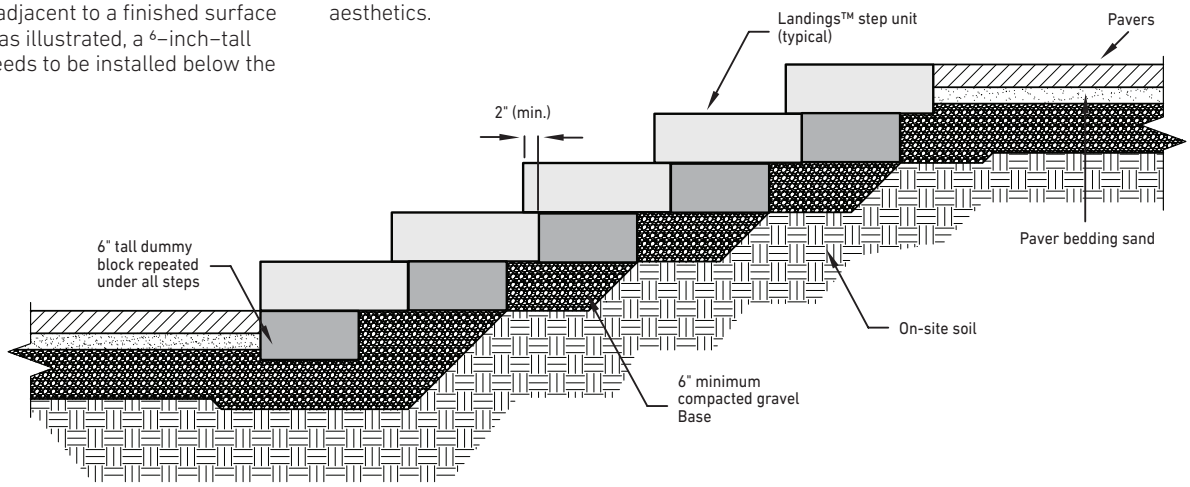
Place units so they nest tightly together.

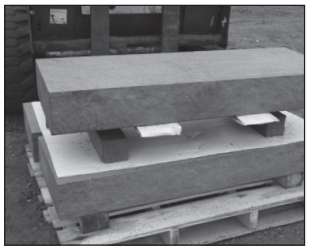
INSTALLATION | LANDINGS™ STEP UNIT

STAIR TREAD
For each consecutive step, follow base course instructions, making sure the top of the base is even with the top of the previously installed unit. Recommended tread depth is a minimum of 10 inches, but no more than 16 inches. When installing steps adjacent to a finished surface such as pavers, as illustrated, a 6–inch–tall dummy block needs to be installed below the first step.

LANDING
For landing(s) follow base course instructions. Each step unit is manufactured with two unique face patterns. The face patterns are manufactured to nest together, which will create a narrower joint, providing pleasing aesthetics.

STEPS IN A 90-DEGREE WALL
When building into a retaining wall, construct the steps first and build the walls adjacent to the steps.

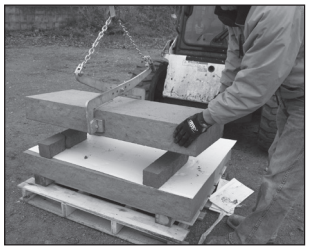




SKID-STEER LOADER
Slide forks underneath the first step unit and lift off pallet. Set the step unit onto its desired location, using a spacer to ease in fork removal.



A helpful tip to protect the step unit is to wrap the fork of the skid–steer with corrugated plastic packaging from the pallet or other protective materials. Secure to the forks.



CLAMP
Using a materials clamp, center the clamp on the step unit. Attach clamp to skid–steer or mini–excavator and slowly lift the step unit off of the pallet and move it into place. Be sure to have a second person to help guide the unit into place as the machine sets the step unit down.



STRAPS
When using a heavy duty strap(s), start by wrapping the strap(s) around the center if using one or close to step unit ends if two straps are being used. Cinch the strap(s) tight and attach the looped ends of the strap(s) to skid–steer or mini–excavator. Slowly lift the step unit from the pallet and move it into place. Be sure to have a second person to help guide the unit into place as the machine sets the step unit down. Using a spacer will help to ease in the strap removal.



CART
When using a cart, place provided corrugated plastic from pallet or other protective material onto the cart to help protect the step unit. With help from a second person, slowly slide the step unit from the pallet onto the cart. Maneuver the unit carefully into place.

Videos can be found on our YouTube channel:
www.youtube.com/anchorblockmn

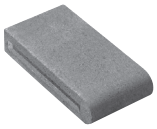
MARINA™ COPING

LEGACY COLLECTION

RESIDENTIAL	COMMERCIAL	STEPS	CAPS	COPING
✓		✓	✓	✓

SHAPES & SIZES

Coping Unit



5 15/16 x 11 13/16 x 2 3/8

UNIT	LF/ PALLET	LF/ LAYER	LAYER/ PALLET	UNITS/ PALLET	UNITS/ LAYER	UNITS/ SQFT	WEIGHT/ PALLET
COPING UNIT							
5 15/16 X 11 13/16 X 2 3/8	165.375	41.34	4	168	42	–	2124

INSTALLATION GUIDE - STEPS

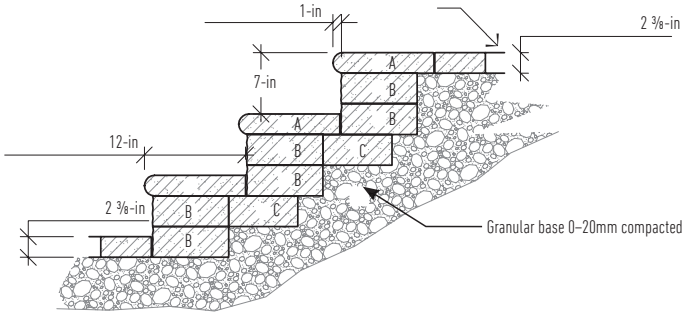
OPTION 1

A. Marina Coping

B. Wall Block

C. Grey Block (4 in x 8 in x 16 in) or Wall Block

Note: All elements must be glued together with the concrete adhesive

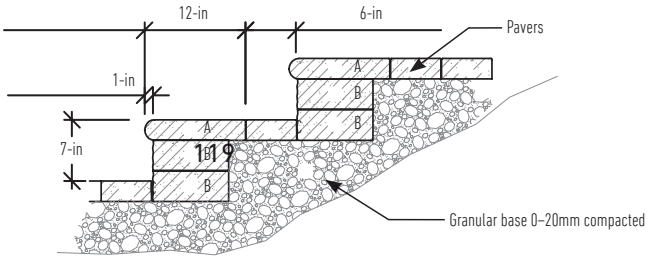


OPTION 2

A. Marina Coping

B. Wall Block

Note: A & B elements must be glued together with the concrete adhesive.



NOTES

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