

VERTEX

Concrete Slab

PERMACON

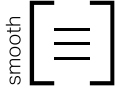


Installation Guide

VB
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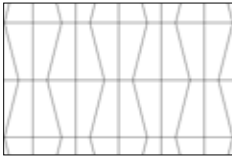
Vertex Slab *New*



	Dimensions mm	Dimensions in.
A	60 x 200 and 302 x 610	2 3/8 x 7 7/8 and 11 7/8 x 24
Weight/unit	39 kg	85 lb
B	Area/unit	0.153 m ²
Area/layer	1.22 m ²	13.17 ft ²
Area/cube	12.2 m²	10 Rows
Qty/cube	80 units	80 units
Weight/cube	1725 kg	3803 lb

Code	Colour	Typical Row
	Prestige	
127001178	Range Amber Beige	
127001179	Range Scandinavia Grey	
Sold in full cubes only		
Production location Quebec		

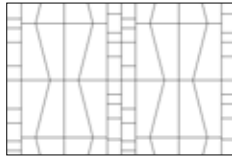
Laying Patterns



Stack Bond



Arrows



Lines of Capio Paver



Rows with Melville 24 x 24 Slab

1 bag of sand covers approx. 181 ft²

TECHNICAL INFORMATION

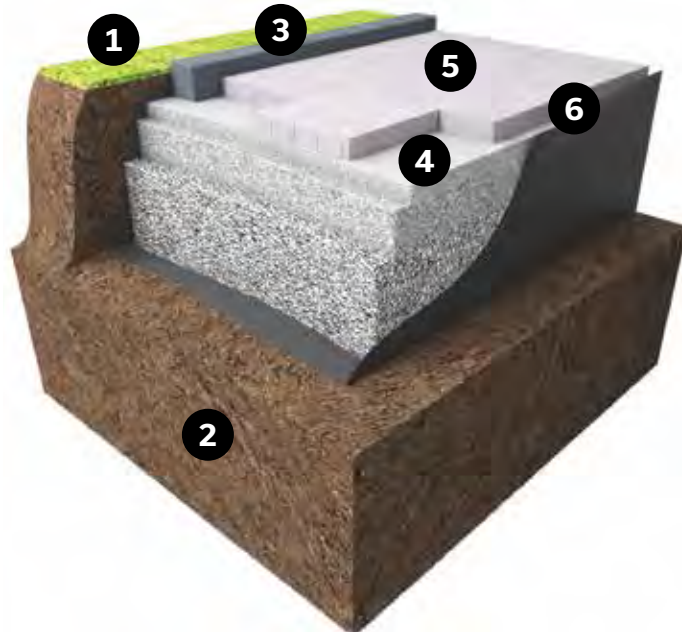
Product	Standard	Flexural Strength	Compressive Strength	De-icing salts freeze-thaw durability	Density	Absorption	Dimension Tolerance*
Vertex Slab	CSA A231.1	±4.5 MPa	N/A	225 g/m ² after 28 cycles 500 g/m ² after 49 cycles	N/A	N/A	Length: -1.0 to +2.0 mm Width: -1.0 to +2.0 mm Height: ±3.0 mm

* Concave or convex warpage in one dimension: up to and including 450 mm: 2.0 mm / over 450 mm: 3.00 mm

Joint sand compaction: Cover vibrating plate with a removable rubber tread (neoprene or polypropylene).
Cover snow removal tools with Teflon or neoprene protectors to minimize the risk of damage from scratches.
Laying patterns are for design purposes only. Permacon shall not be responsible for excess or shortage of material.

Slabs

SLAB INSTALLATION (GENERIC)



TOOLS REQUIRED

- > 1 wheelbarrow
- > A few pegs
- > 2 rigid pipes with a diameter of 25 mm - 1 in. x 3 m - 10 ft.
- > 1 plank: 25 mm x 150 mm x 2.4 m - 1 in. x 6 in. x 8 ft.
- > 1 plumb line
- > 1 level
- > 1 bricklayer's line: 15 m - 50 ft. long
- > 1 shovel
- > 1 chalk line
- > 1 measuring tape
- > 1 broom
- > 1 rake
- > 1 guillotine or concrete saw (available from rental stores)
- > 1 vibrating plate (compacting tool available from tool rental stores)

OPTIONAL TOOLS

- > Jumping jack

The jumping jack should not be used to compact slabs. It should only be used for the foundation.

1 EXCAVATION

If pipes or wires are located in the area to be excavated, contact the company representative concerned before the work is started.

To ensure sufficient drainage, excavate the soil to obtain a minimum incline of 2% (20 mm/m or 1/4 inch per foot). The slope may be further reduced to as little as 1% if there is good overall drainage on the site. When in doubt, obtain a detailed analysis of the site drainage (slopes, soil type, layout, etc.) from an expert.

The excavation contour should extend beyond the surface to be paved by at least 300 mm - 12 in. Ideally, this distance should be 1 to 1 1/2 times the thickness of the foundation. The stability of the project depends on this measurement, which ensures that the slabs at the edge will be as well supported as those in the centre.

Level the bottom of the excavation area with a rake and if the soil is sandy, compact it with a vibrating plate or roller. It is preferable not to pack clay soil at this stage. In this case, the use of a geotextile membrane placed between the natural soil and the foundation is recommended to prevent foundation contamination by clay and ensure greater stability. Refer to the chart to get the minimum excavation required (ref: photo #1)

2 FOUNDATION

Spread and compact the 0 to 20 mm - 0 to 3/4 in. stone in 100 mm - 4 in. layers. Lightly water the 0 to 20 mm - 0 to 3/4 in. stone to make tamping easier. To ensure an adequate foundation, compact the stone several times with a vibrating plate or a jumping jack (ref: photo #2). Once this stage has been completed, you will be able to see what the final result will look like; the surface should be uniform, with no bumps or depressions greater than 13 mm - 1/2 in. in 3 m - 10 ft. You can verify the final level for the slab installation by placing a slab on a guide (ref: photo #3). Adjust the surface, if necessary, with compacted 0 to 20 mm - 0 to 3/4 in. stone.

3 CURB

Installing Novo curb: Before you finish the foundation, proceed immediately with the installation of the curb. Begin by installing the curb on one side. Before installing the curb on the other side, temporarily place a row of slabs in order to determine the ideal distance and thus to determine the position of the other curbs and avoid having to cut slabs later. Installing Celtik curb, Melville curb or even a plastic curb: to install these types of curbs, see #5 LAYING THE SLABS on this page.

4 INSTALLATION BED

Spread the first layer of concrete sand between two 25 mm - 1 in. diameter steel pipes placed parallel to each other on the granular foundation (ref: photo #4). Level the material by sliding a straight plank across the two pipes (ref: photo #5). Compact the layer between the two pipes using a vibrating plate, without moving the pipes. Spread a second layer of uncompacted sand between the pipes to fill the space left by the compaction (approximate depth of 6 mm or 1/4 in.) and level once again using the straight plank. This method will facilitate the subsequent installation of the slabs. Fill the spaces left by the pipes which were used as levelling guides.

Repeat the same steps for the entire surface of the work. Any significant variation in the bed thickness may cause irregularities in the paved surface. Never use installation-bed material to make important corrections to the compacted granular foundation.

5 LAYING THE SLABS

Arrange the slabs according to the pattern chosen with a 90° angle if possible. Proceed by walking on the slabs (ref: photo #6).

Slabs are manufactured with side spacers that will set a space of 3 mm - 1/8 in. between each slab. A space of 2 mm must be allowed for slabs without spacers. The use of a bricklayer's line, a level, a square, and a specialized handling tool (possibly including vacuum lifting equipment) will be required.

To obtain an even distribution of colour and texture, it is recommended that you choose slabs from more than one cube at a time. Moreover, working across each cube always gives the best results.

Check the alignment of the slabs after every five rows installed and adjust them, if necessary, using a screwdriver. Also, check the uniformity of the surface regularly, and use a soft-head mallet to correct any units which do not meet the required degree of uniformity.

Install slabs up to the last row. To avoid having to cut slabs later, determine the position of the curbs to finish with a complete slab.

If necessary, you can cut the slabs using specialized tools such as guillotine or a concrete saw. It is recommended that you use a chalk line to mark the slabs to be cut. If you have to use a guillotine to cut the slabs, make sure that the cut is at a slight angle as slabs cut this way are much easier to install. If you use a concrete saw, keep away from the slabs already installed, since the dust and dirt from sawing will permanently stain them. Wear safety glasses when cutting concrete products.

At the perimeter of the slab-covered surface, proceed with installing the Melville curb, Lafitt curb, Celtik curb or a plastic curb (ref: photo #7). The curbs should be installed directly on the compacted granular foundation.

GENERIC SLABS (CONT'D)

6 FILLING THE JOINTS

Spread Techniseal polymeric sand on the slabs, then make it penetrate the joints by sweeping it in all directions (ref. photo # 8). (Follow the instructions indicated on the sand bags). Pass a small vibrating plate (see NOTE), protected by a rubber or neoprene membrane, over the entire surface to pack the sand solidly. Pass the vibrating plate a second time over the entire surface. Remove the surplus sand from the surface with a push broom. Level the surface of the joint with a leaf blower, then wet the surface to stabilize the polymer sand.

If, after a few days, some joints are not properly filled, repeat the procedure.

WE SUGGEST SETTING ASIDE A NUMBER OF SLABS FOR REPLACEMENT.

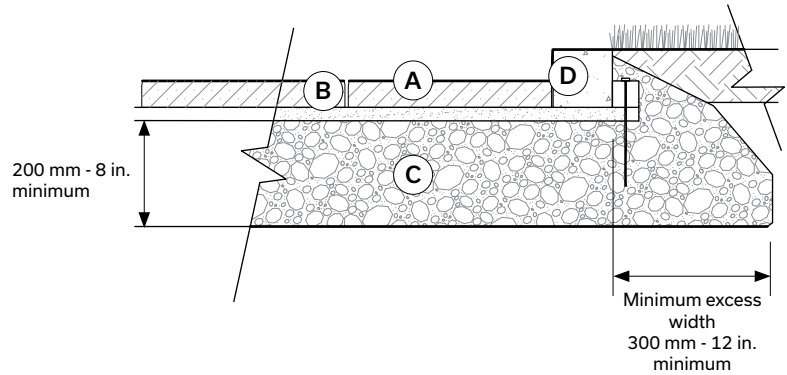
NOTE: For very large slabs and in places where a vibrating plate cannot be used, proceed with manual compaction of the sand by means of a rubber mallet, hammering vigorously on the four corners and the contour of each slab. Shearing the sand joints (manual compaction with an appropriate tool, such as a pointing trowel) may be necessary to ensure better densification.



TYPICAL CROSS-SECTION - SLABS

TYPICAL SLAB INSTALLATION

- (A) Slabs
- (B) Laying bed 25 mm - 1 in. (concrete sand)
- (C) Compacted granular foundation 0 to 20 mm - 0 to 3/4 in.
- (D) Melville, Lafitt, Celtik curb or other



EXCAVATION DEPTH AND MINIMUM FOUNDATION⁽³⁾

NATURE OF PROJECT	PATIO OR SIDEWALK	
	Clay	Sandy
NATURE OF SOIL	Clay	Sandy
MINIMUM EXCAVATION REQUIRED	350 mm 14 in.	250 mm 10 in.
MINIMUM FOUNDATION THICKNESS 0 TO 20 MM - 0 TO 3/4 IN. CRUSHED STONE	250 mm 10 in.	150 mm 6 in.
MINIMUM/MAXIMUM UNCOMPACTED INSTALLATION ⁽¹⁾ BED	15 mm to 25 mm 5/8 in. to 1 in.	15 mm to 25 mm 5/8 in. to 1 in.
THICKNESS OF SLAB	Varies depending on selected slab	

The information in this table shows the minimum required for a job well done. Anything above this level means improved stability for the whole.

⁽¹⁾ Once compacted, a 25 mm - 1 in. bed will be reduced down to 15 mm - 5/8 in.

⁽²⁾ For certain areas where clay soil is unstable, the minimum excavation required is 600 mm - 24 in. and the minimum foundation is 525 mm - 21 in.

⁽³⁾ Conforms to the recommended ICPI standard (Interlocking Concrete Pavement Institute)