

APPLICATIONS

MAIN APPLICATIONS

Concrete paver applications vary. They are subjected to various conditions as to the ground bearing capacity and the various loads applied. Under these conditions, the fields of applications can be divided into three groupings, namely the low load areas, the light traffic areas and the heavy traffic areas.

Low load areas	Light traffic areas	Heavy traffic areas
Characterized by pedestrian traffic.	Areas under heavy and constant pedestrian, bicycle or other similar traffic and/or light motor vehicle traffic.	Areas under heavy motor vehicle traffic and heavy-machinery traffic.
<ul style="list-style-type: none"> • walkways; • patios; • decks of in-ground swimming pools; • roof-decks; • curbs; • various pedestrian areas; • etc. 	<ul style="list-style-type: none"> • residential streets; • residential parkings; • cycling trails; • parks; • public and commercial terraces; • pedestrian pathways; • etc. 	<ul style="list-style-type: none"> • main roadways and commercial streets; • bus corridors; • street and school crossings; • industrial, harbour and airport areas; • commercial and industrial parking lots; • crossroads and intersections; • shopping centers; • unloading docks; • etc.

SELECTING PAVERS AND SLABS

Selecting the shape, thickness, and layout patterns of pavers will be done in accordance with the interlocking performance required for the field of application. The requirements in terms of interlocking capacity are based on the various conditions affecting the pavement during its life cycle, namely the loads to which the pavement will be subjected to, the load-bearing capacity of the ground, drainage, environmental conditions, local availability of materials, and local construction practices.

Summary table*

Applications	Recommended type of paver or slab	Recommended paver or slab thickness (mm)	Recommended layout pattern
Low load areas	Any type of paver or slab	40, 50, 60, 65	Any layout pattern
Light traffic areas	Any type of paver	60, 70	Any layout pattern
High traffic areas	Self-locking geometric	80, 100	Discontinuous joint layout

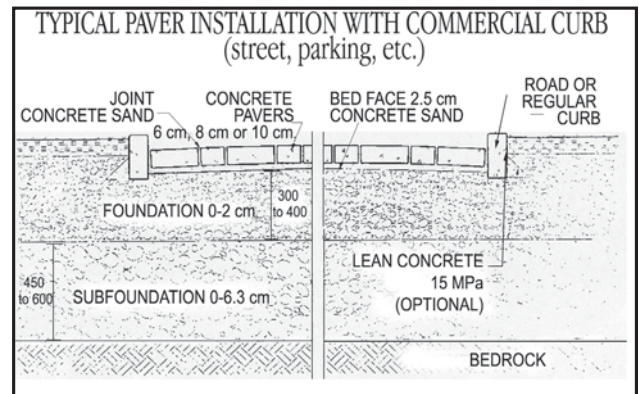
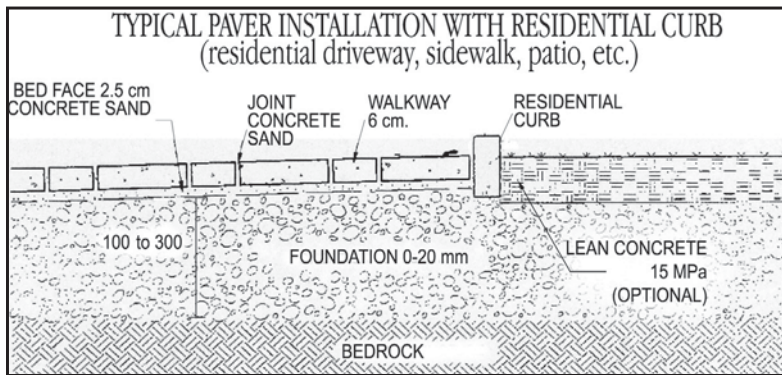
* Recommandations pour les cas généraux seulement. Ce tableau ne saurait répondre à toutes les questions soulevées par les cas particuliers. À ce sujet, veuillez consulter le service technique de BOLDUC ou un professionnel.

PAVER AND SLAB INSTALLATION

TOOLS NEEDED: FOR PAVERS

- Wheelbarrow
- Two 3 m long (10 feet) rigid pipes, 25 mm (1 inch) diameter
- One 25 mm x 150 mm x 2.4 m (1 in. X 6 in. X 8 ft.) plank
- Wooden stake
- Level
- Mason's cord
- Line level
- Chalk line
- Measuring tape
- Broom
- Rake
- Shovel
- Paver knife or concrete saw
- Plate compactor with Teflon plate (highly recommended) to protect pavers and slabs

STEPS TO FOLLOW



1. Excavation

- 1.1 To determine the excavation depth and quantity of granular material required for your project, consult the table at the bottom of the next page.
- 1.2 When excavating, create a 1% slope (1/8 in. per foot or 1 cm per meter) to ensure adequate drainage. The same slope must be used for the base, the bed face and the paver surface (See subsequent steps).
- 1.3 The periphery of the excavated area must extend at least 12 in. (30 cm) beyond the paver surface. This extra space is for installing concrete curbs and compacting the soil behind the curbs to ensure the stability of the surface to be paved.
- 1.4 Use a rake to level the bottom of the excavated area and a vibrating plate to compact the soil if it is sandy or granular. A carefully leveled base will minimize variations in bed face thickness and reduce the risk of final paver surface distortion.

If the soil is mainly clay, it should not be compacted. For clay soil, we also strongly recommend using a geotextile membrane to separate the soil from the granular base material to prevent mixing and provide greater long-term stability.

2. Base

Spread 0-3/4 in. granular material in 4 in. (10 cm) layers over the bottom of the excavated area, compacting after each layer. Several passes will be needed to ensure proper compaction. Lightly hose down the granular material to improve compaction.

We recommend using a vibrating plate, a vibrating roller or a jumping jack tamper to compact the granular material.

3. Bordures

To install Laurentian, Appalachian, Regular or Medium curbs, proceed as follows:

Begin installing the curbs before you finish the base. Install the first row of curbs on the side where you wish to begin installing the pavers. Compact the soil behind the curbs, and make sure they are solidly anchored and perpendicular to the pavers you will be installing.

Next, temporarily install a row of pavers, in accordance with your chosen pattern, in order to determine the final location of the second row of curbs. This will minimize the number of pavers you will have to cut. Finish installing the curbs. Use stretched twine to ensure the curbs are well aligned. Backfill the curbs and compact the soil. You may now complete your base.

PAVER AND SLAB INSTALLATION

STEPS TO FOLLOW

4. Bed face

- 4.1 Spread a layer of concrete sand or stone dust no more than 5/8 in. to 1 in. thick (1.5 to 2.5 cm). It is important that the bed face be as thin as possible. Do not compact since a 1 in. (2.5 cm) bed face will reduce to 5/8 in. (1.5 cm) following final compaction of the pavers (See step 5.7). The thickness of the bed face must be as consistent as possible.
- 4.2 Level the concrete sand or crushed material of same particle size distribution using a straight plank and two pipes no more than 1 in. (2.5cm) in diameter (See Diagram A).

5. Paver and Slab Installation

- 5.1 Lay the pavers or slabs on the bed face as per the desired pattern. Ask for the BOLDUC paver or slab installation patterns from your distributor or visit our website. Continue the installation row by row, walking on the pavers or slabs, not on the bed face (See Diagram B). Fill the space left by the pipes used to level the bed face with concrete sand or crushed material of same particle size distribution..
- 5.2 Leave approximately 1/8 in. (3 mm) between pavers. Some pavers already have built-in side spacers, while others do not.
- 5.3 For best results in terms of the overall consistency of your design, we recommend installing pavers from several cubes simultaneously, taking them in vertical rather than horizontal rows. Also, during installation, make sure the pavers are installed with the correct side facing up.
- 5.4 Check the alignment of the paver or slab joints every five rows. Realign if necessary using a regular screwdriver.

5.5 Install the pavers up to the second to last row.

5.6 If you must cut pavers, use a concrete saw or paver chisel. For slabs, use a concrete saw. Use a chalk line to mark the pavers that must be cut. If using a concrete saw, keep well away from the paved surface when cutting to avoid damaging the pavers with debris thrown off by the saw.

5.7 This step applies to paver installation only. Once the pavers have been installed and the curbs secured, stabilize the paved surface using a vibrating plate (See Diagram C). Do not use a jumping jack tamper or vibrating roller at this stage. For best results, make two or three passes in both directions (See Diagram D).

6. Filling joints

- 6.1 Spread dry concrete sand over the paved surface (let dry in sun if damp). You can also use bagged polymer sand, which has the advantage of always being dry during application. Fill joints with the sand by sweeping over the entire surface and in all directions (see Diagram E). This step is optional for slabs.
- 6.2 This step only applies to paver joint filling. Remove excess sand. Settle the sand into the joints by making several passes with a vibrating plate. Make sure all the joints are completely filled. Repeat steps 6.1 and 6.2 as necessary. After the sand is completely swept and blown off the surfaces, spray the pavers to moisten the sand joints and be sure to remove any excess water with the blower.
- 6.3 If, over time, the joints do not remain completely filled with sand or if they empty little by little, repeat steps 6.1 and 6.2.
- 6.4 We recommend keeping a number of pavers or slabs as replacements.

PAVER AND SLAB INSTALLATION

STEPS TO FOLLOW

EXCAVATION DEPTH AND FOUNDATION THICKNESS*

PROJECT	TYPE OF SOIL	MINIMUM REQUIRED EXCAV. DEPTH	MINIMUM BASE THICKNESS	MINIMUM SUBBASE THICKNESS	BED FACE THICKNESS
COMMERCIAL: Street, parking, etc. (80 mm et 100 mm pavers or thicker)	Clay	45 in. (115 cm)	18 in. (45** cm)	24 in. (60** cm)	5/8 to 1 in. (1.5 to 2.5 cm)
	Gravel	34 in. (85 cm)	12 in. (30** cm)	18 in. (45** cm)	5/8 to 1 in. (1.5 to 2.5 cm)
Residential Driveway (60 mm pavers or thicker)	Clay	15 in. (37.5 cm)	12 in. (30 cm)	—	5/8 to 1 in. (1.5 to 2.5 cm)
	Gravel	11 in. (27.5 cm)	8 in. (20 cm)	—	5/8 to 1 in. (1.5 to 2.5 cm)
Sidewalk or patio (pavers or slabs)	Clay	9 in. (22.5 cm)	6 in. (15 cm)	—	5/8 to 1 in. (1.5 to 2.5 cm)
	Gravel	7 in. (17.5 cm)	4 in. (10 cm)	—	5/8 to 1 in. (1.5 to 2.5 cm)

* These values are intended to serve as a guide, and are valid only for low traffic applications. Certain soil types that are very unstable or especially affected by freeze-thaw cycles may require deeper excavation and thicker foundations. For areas with these soil types, or for large projects, we recommend consulting a geotechnical professional.

** Compacted to 95% of Modified Proctor.

NECESSARY MATERIALS

MATERIAL REQUIRED FOR 110 sq.ft. (10m ²)	TYPE OF SOIL	GRAVEL 0-3/4 in. BASE	GRAVEL 0-21/2 in. or class A sand SUBBASE	BED FACE CONCRETE SAND	JOINT FILLER CONCRETE SAND ***
COMMERCIAL: Street, parking, etc. (80 mm et 100 mm pavers)	Clay	19 800 lb 9 000 kg	26 400 lb 12 000 kg	1 100 lb 500 kg	110 to 220 lb 50 to 100 kg
	Gravel	13 200 lb 6 000 kg	19 800 lb 9 000 kg	1 100 lb 500 kg	110 to 220 lb 50 to 100 kg
Residential Driveway (60 mm pavers or thicker)	Clay	13 200 lb 6 000 kg	1 100 lb 500 kg	—	90 lb 40 kg
	Gravel	8 800 lb 4 000 kg	1 100 lb 500 kg	—	90 lb 40 kg
Sidewalk or patio (pavers or slab)	Clay	6 600 lb 3 000 kg	1 100 lb 500 kg	—	90 lb 40 kg
	Gravel	4 400 lb 2 000 kg	1 100 lb 500 kg	—	90 lb 40 kg

*** The quantities vary according to the type of pavers or slabs used.

