

# PAVERS

DRIVEWAYS, PERMEABLE DRIVEWAYS & PATIOS



## PHYSICAL AND GEOMETRICAL CHARACTERISTICS

| CHARACTERISTICS                              | ASTM C936                                                                                                      | CSA A231.2:19                                                                                                        |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Compressive strength                         | 8000 psi [55 MPa] min.                                                                                         | 50 MPa min.                                                                                                          |
| Absorption                                   | 5 % max.                                                                                                       | –                                                                                                                    |
| Freeze-thaw durability                       | Mass loss (max.): 225 g/m <sup>2</sup> at 28 cycles, or<br>Mass loss (max.): 500 g/m <sup>2</sup> at 49 cycles | Mass loss (max.): 225 g/m <sup>2</sup> after 28 cycles, or<br>Mass loss (max.): 500 g/m <sup>2</sup> after 49 cycles |
| Dimensional tolerances<br>(see Notes below): | Length and Width: ± 0.063 in. [1.6 mm]<br>Thickness: ± 0.125 in. [3.2 mm]                                      | Length and Width: -1.0 mm to +2.0 mm<br>Thickness: ± 3.0 mm                                                          |

Notes: The dimensional tolerances shown above are prior to the application of architectural finishes.

# INSTALLATION GUIDE

## INTERLOCKING CONCRETE PAVEMENT

### INSTALLATION OUTLINE

#### 01 EXCAVATION

- A. Before excavating, call all the local utility companies (e.g., phone, gas, electrical) to ensure that the area in which you plan to dig is clear of underground cables or wires. If any are found, please notify the appropriate companies before you begin.
- B. When excavating, it is important to achieve a slope in increments of 1.5% ( $\frac{3}{16}$ " per ft/5 mm per 300 mm), which will allow for proper drainage. The excavation should mirror the final grade of pavement.
- C. The width of the base behind the edge should be equivalent to the thickness of the base.
- D. Using a rake, grade the bottom of the excavated area. If the natural soil is granular or sandy, we recommend that you compact the soil with a vibrating plate. If the soil is clay-like, change the soil with a blend of lime and crushed stone prior to compaction. Next, cover it with a layer of geotextile fabric to prevent the contamination of the base (clay and 0- $\frac{3}{4}$ " [0-20 mm] crushed stone). Refer to the table "**Thickness of the Granular Foundation**" (on next page) to find the minimum thickness of foundation required.

#### 02 FOUNDATION

- A. Install a 0- $\frac{3}{4}$ " (0-20 mm) crushed stone base, in 4" (100 mm) lifts with a minimum 5,000 lbf (22 kN) vibrating plate compactor.
- B. To facilitate compacting, wet the base material thoroughly and compact with a vibrating plate proceeding in all directions. Continue this process until you have achieved the desired height. At this stage, you can verify the final height with the help of a paver.
- C. Base tolerance  $\pm\frac{3}{8}$ " (10 mm) for every 10' (3-m) increment.

#### 03 THE SETTING BED

- A. On the compacted crushed base, install two pipes with an outside diameter of 1" (25 mm). Grade the concrete sand with the help of a straight edge (or Quick-E leveler). If the base is not properly graded and smooth, imperfections will be evident in the finishing grade of the pavement.
- B. Bedding sand should not be compacted until all paving stones have been laid down. Passing the vibrating plate over the paving stones causes them to settle approximately  $\frac{3}{8}$ " (10 mm) into the bedding sand.

#### 04 INSTALLATION OF PAVING STONES

- A. Once the choice of paving stones and the design have been finalized, we recommended that you start installing the pavers at a 90-degree angle. To do so, proceed as follows: measure a first horizontal line of 3' (1-m) and a second line of 4' (1.2 m) perpendicular to the first. Connect a third straight line of 5' (1.5 m) which will form a triangle. The result will be a perfect 90-degree angle. While installing the paving stones, walk on the installed pavers, and fill in gaps caused by the pipes with concrete sand.
- B. It is always recommended that you use more than two cubes at a time in order to maximize the color blend. Furthermore, you should proceed with the cubes from top to bottom.
- C. You may use a chalk line to mark the stones to be cut along the borders, using a guillotine or a concrete saw. When cutting paving stones, we recommend that you wear protective ear and eyewear.
- D. Once you finish installing the paving stones, you can then install Avignon, Belgik or Pietra curbstone on the granular base. To keep curbs in place, add mortar along the back to form a 45-degree angle between the ground and the curbstone or, when available, using the plastic retention system. In a vehicular traffic application, the mortar must be reinforced using steel rods.

#### 05 FILLING IN JOINTS

- A. Spread out the polymer stabilizer sand on the paving stones and sweep in between joints in all directions.
- B. Pass a vibrating plate in all directions to allow sand to penetrate between the joints.
- C. Sweep once more and remove excess sand. Follow the instructions exactly as indicated on the polymer stabilizer sand packaging.

# INSTALLATION GUIDE

## INTERLOCKING CONCRETE PAVEMENT



### VIBRATING PLATE ALERT!

Avoid scuffs on paver surfaces. Pavers with embossed surfaces (high and low points) are more susceptible to scuff marks from plate compactors. Techo-Bloc recommends the use of urethane mats between the plate and the paver surface when compacting. Techo-Bloc will not be held responsible for compaction scuffs or burns on pavers.

### THICKNESS OF THE GRANULAR FOUNDATION<sup>1</sup>

| RESIDENTIAL PROJECTS             | TYPE OF EXISTING SOIL             |                                   |
|----------------------------------|-----------------------------------|-----------------------------------|
|                                  | Clayey or Silty <sup>2</sup>      | Sandy or Gravelly                 |
| Driveways <sup>3</sup>           | 8" to 14" (200 to 350 mm) Minimum | 6" to 10" (150 to 250 mm) Minimum |
| Patios and Walkways <sup>4</sup> | 6" to 8" (150 to 200 mm) Minimum  | 4" to 6" (100 to 150 mm) Minimum  |

1. Data shown in this chart are provided as guidelines only. The range of values suggested depends particularly on existing soil conditions. The thicker the granular foundation, the greater the increase in stability of the whole structure.
2. In the case of unstable soils or ones particularly affected by the freeze-thaw cycles, a thicker foundation may be necessary. For soils with these conditions or for commercial, industrial, or institutional works, a geotechnical professional should be consulted.
3. For the province of Quebec, the typical range is:
  - For clayey or silty soils: 12" to 20"
  - For sandy or gravelly soils: 8" to 14"
4. For the province of Quebec, the typical range is:
  - For clayey or silty soils: 10" to 14"
  - For sandy or gravelly soils: 6" to 8"

### QUANTITY CHART FOR JOINTS FILLING - FLEXLOCK POLYMERIC SAND

Approximate surface coverage per bag of 50 lbs (22.7 kg).

| PRODUCTS                         | sq. ft | sq. m |
|----------------------------------|--------|-------|
| Antika                           | 21     | 2     |
| Blu 80 mm                        | 76.5   | 7.11  |
| Blu 80 mm (6"×13")               | 31.97  | 2.97  |
| Diamond                          | 28.4   | 2.64  |
| Eva                              | 143.56 | 13.34 |
| Hexa 100 mm                      | 61.1   | 5.7   |
| Industria 150 series - 150×150   | 31.6   | 2.94  |
| Industria 200 series - 200×200   | 41.03  | 3.81  |
| Industria 200 series - 200×400   | 54.57  | 5.07  |
| Industria 300 series - 300×100   | 30.77  | 2.86  |
| Industria 300 series - 300×200   | 41     | 3.81  |
| Industria 300 series - 300×300   | 61.39  | 5.70  |
| Industria 450 series - 450 x 100 | 33.5   | 3.11  |
| Industria 450 series - 450 x 150 | 46.4   | 4.31  |
| Industria 450 series - 450 x 300 | 73.5   | 6.83  |
| Industria 600 series - 600×100   | 35.06  | 3.26  |
| Industria 600 series - 600×200   | 61.32  | 5.70  |
| Industria 600 series - 600×300   | 81.72  | 7.59  |
| Industria 600 series - 600×600   | 122.48 | 11.38 |
| Industria 900 series - 900 x 300 | 103.5  | 9.6   |
| Industria 900 series - 900 x 600 | 166.5  | 15.5  |
| Industria 900 series - 900 x 900 | 208.4  | 19.4  |
| Industria Triangle               | 36.0   | 3.3   |
| Linea small rectangles           | 31.47  | 2.92  |
| Linea large rectangles           | 42.33  | 3.93  |

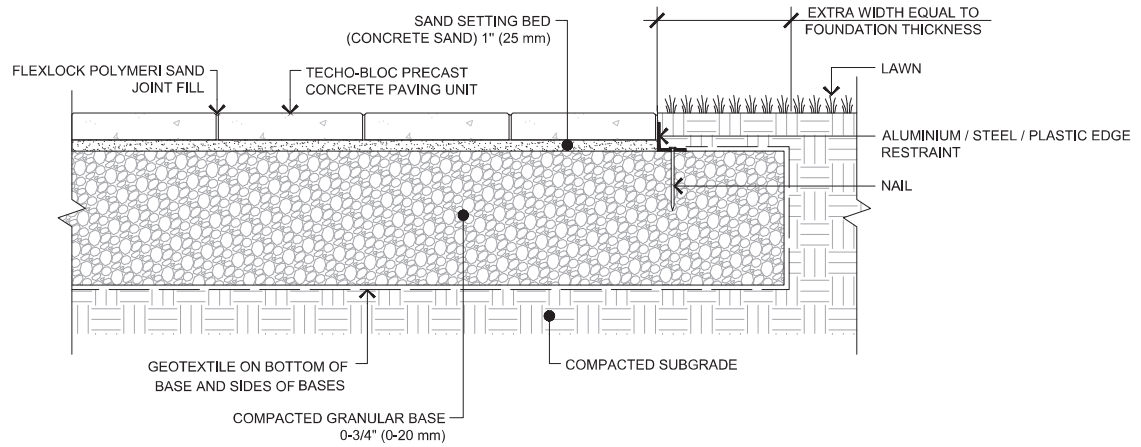
|                 |       |      |
|-----------------|-------|------|
| Mika            | 16.41 | 1.53 |
| Mista random    | 50.4  | 4.69 |
| Sleek           | 97.12 | 9.03 |
| Squadra         | 14.50 | 1.35 |
| Travertina Raw  | 16.41 | 1.53 |
| Valet           | 24.1  | 2.2  |
| Victorien 60 mm | 97.06 | 9.02 |
| Villagio        | 18.50 | 1.72 |
| Westmount       | 25.3  | 2.4  |

Topsoil quantity in lb (kg) to cover an area of 1 sq.ft (1 sq.m) to fill in between joints and the paver cavity.

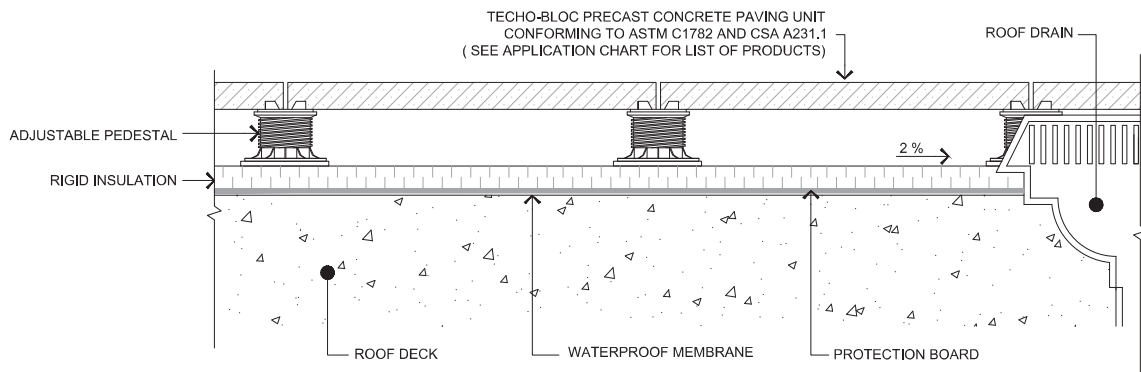
| PRODUCTS                                    | lbs/sq. ft | kg/sq. m |
|---------------------------------------------|------------|----------|
| Aquastorm<br>(see Permeable Pavers section) | 12.60      | 61.40    |

# INSTALLATION GUIDE

## PAVING UNIT ON COMPACTED GRANULAR BASE

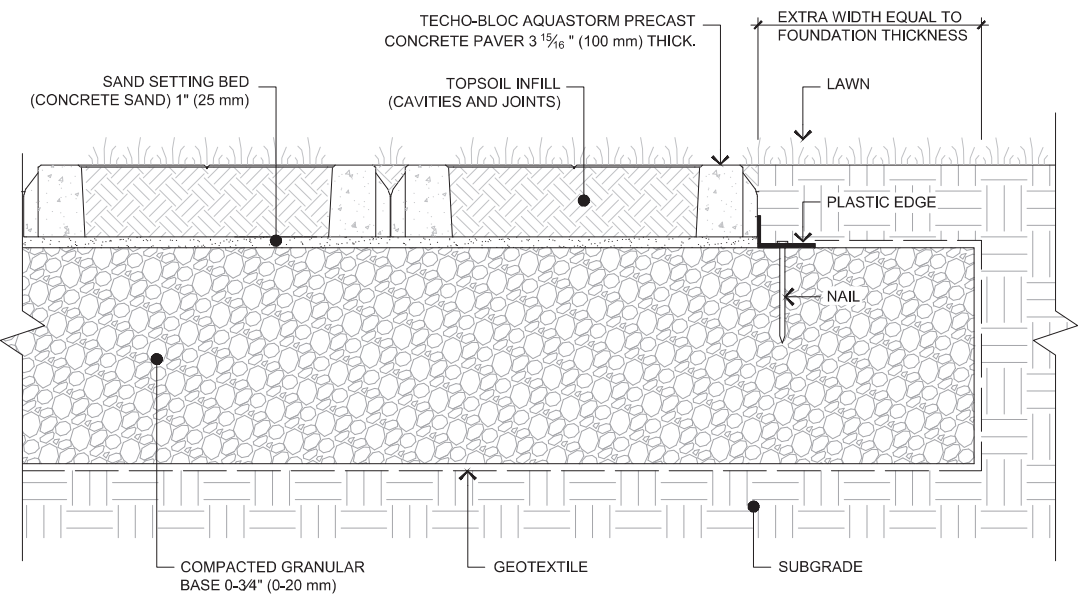


## PAVING UNIT ON PEDESTAL SET

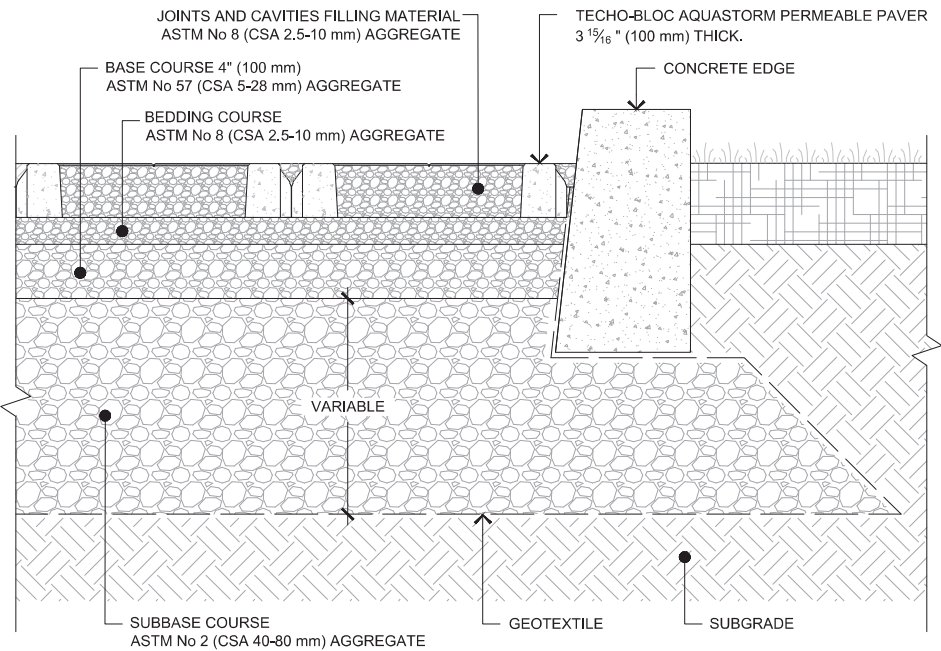


# INSTALLATION GUIDE

## CONCRETE GRID PAVER - AQUASTORM (GRASS INFILL)



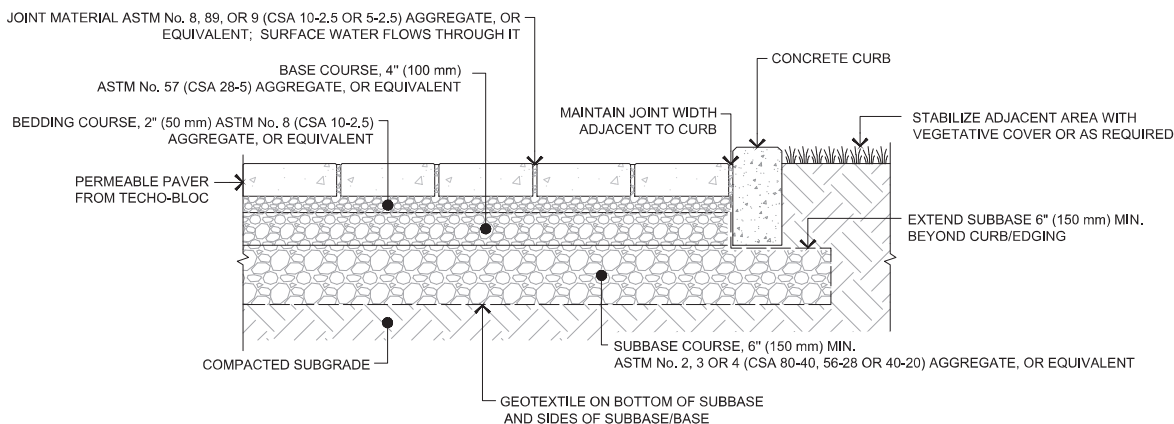
## CONCRETE GRID PAVER - AQUASTORM (AGGREGATE INFILL)



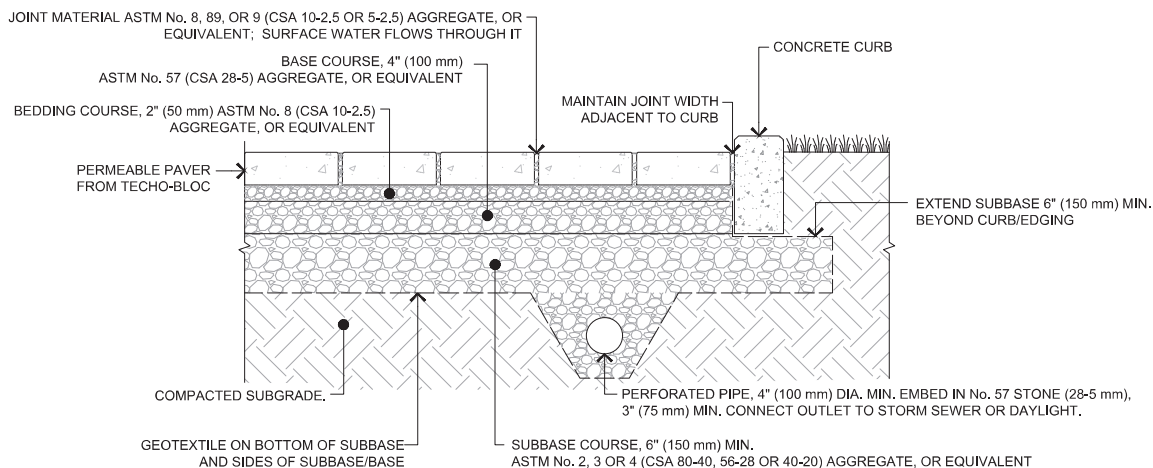
PLEASE REFER TO P.4 FOR THE CORRECT USE AND LIMITATIONS OF PROVIDED TECHNICAL INFORMATION.

# INSTALLATION GUIDE

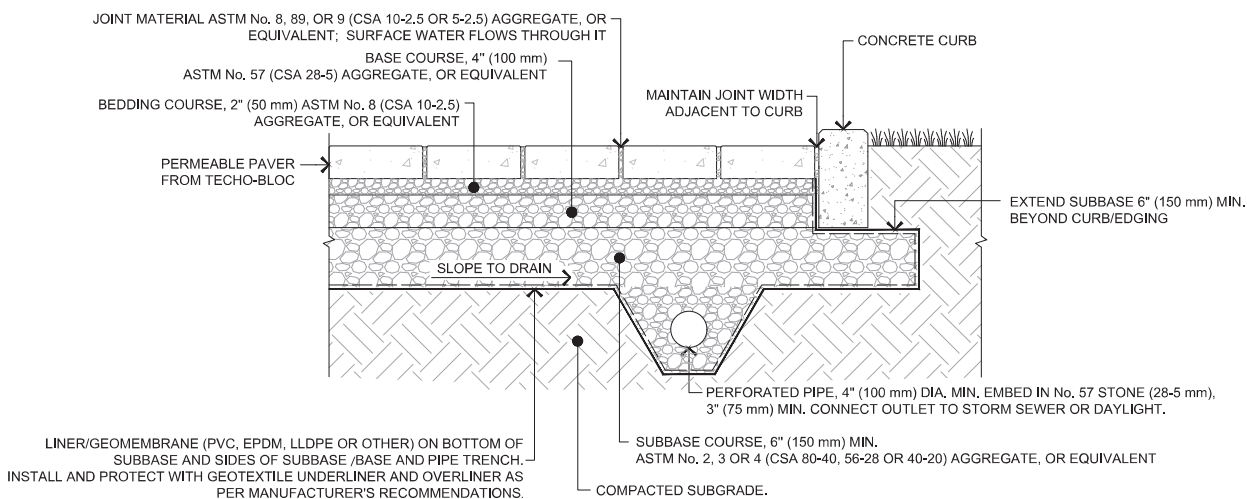
## PERMEABLE PAVER - FULL INFILTRATION TO SOIL SUBGRADE



## PERMEABLE PAVER - PARTIAL INFILTRATION TO SOIL SUBGRADE



## PERMEABLE PAVER - NO INFILTRATION TO SOIL SUBGRADE

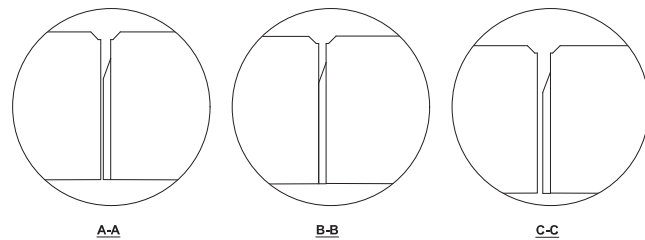
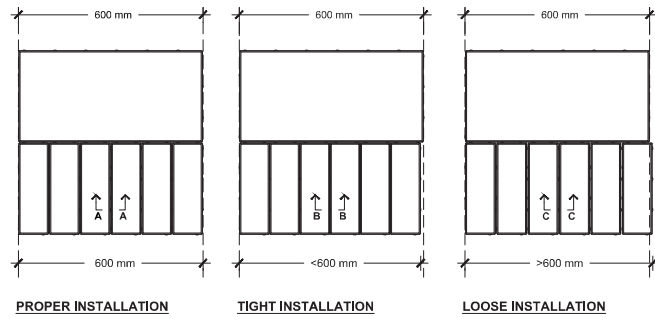


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# INSTALLATION ACCORDING TO NOMINAL DIMENSIONS

The nominal dimension of a paving unit (width or length) represents the absolute distance between the half-joint on one side of the paving unit and the half-joint on the opposite side. The paving units must be laid while respecting their nominal dimensions. Installed pavers must be neither too tight nor too loose to ensure the performance and integrity of the pavement in service.

Here is an example where pavers of nominal dimension 600x100 mm are laid next to 600x300 mm pavers. If the installation is done according to the nominal dimensions (mid-joint to mid-joint), then at each 600 mm the ends of the pavers will coincide. Otherwise, the installation will be considered tight or loose.



## PAVING UNITS – JOINT WIDTH

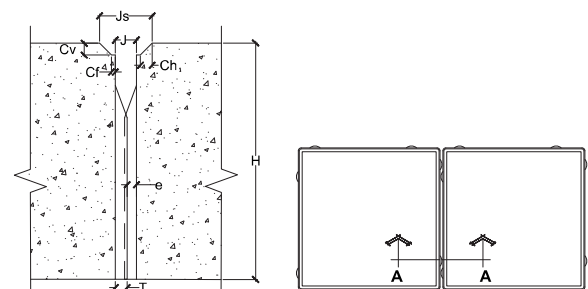
The space between the paving units (excluding the spacer), i.e. the joint width (J), will depend on the thickness of the spacer (T) and the free space (e) between the spacer and the edge side (or spacer) of the adjacent paving unit. To these dimensions are added the dimensions of the chamfer (Ch) and flat shoe (Cf) to determine the joint width on the surface (Js) of the segmental concrete pavement.

Note: The dimensions shown in this table can differ for paving units with slate texture or other type of embossed texture. SLEEK joint width will depend on the spacer position: (i) front to front (largest dimension) or (ii) staggered (smallest dimension).

| PAVER         | HEIGHT |             | NOMINAL JOINT WIDTH (J) |        | JOINT WIDTH ON THE SURFACE (Js) |         | CHAMFER  |        |          | SPACER  |        |
|---------------|--------|-------------|-------------------------|--------|---------------------------------|---------|----------|--------|----------|---------|--------|
|               | H      |             | J1                      | J2     | Js1                             | Js2     | Cf       | Cv     | Ch       | T       | e      |
| Aquastorm     | 100 mm | 3 15/16 in. | 41.0 mm                 | -      | 49.0 mm                         | -       | 1.0 mm   | 3.0 mm | 3.0 mm   | 20.0 mm | 1.0 mm |
| Blu 80 (6x13) | 80 mm  | 3 1/8 in.   | 7.0 mm                  |        | 15.0 mm                         | -       | 1.0 mm   | 3.0 mm | 3.0 mm   | 3.0 mm  | 1.0 mm |
| Hexa 100 mm   | 100 mm | 3 15/16 in. | 2.5 mm                  | -      | 7.5 mm                          |         | 1.0 mm   | 1.5 mm | 1.5 mm   | 1.5 mm  | 1.0 mm |
| Industria     | 100 mm | 3 15/16 in. | 3.0 mm                  | -      | 11.0 mm                         | -       | 1.0 mm   | 3.0 mm | 3.0 mm   | 2.0 mm  | 1.0 mm |
| Linea         | 100 mm | 3 15/16 in. | 3.0 mm                  | -      | 11.0 mm                         | -       | 1.0 mm   | 3.0 mm | 3.0 mm   | 2.0 mm  | 1.0 mm |
| Diamond       | 100 mm | 3 15/16 in. | 2.5 mm                  | -      | 7.5 mm                          | -       | 1.0 mm   | 1.5 mm | 1.5 mm   | 1.5 mm  | 1.0 mm |
| Sleek         | 90 mm  | 3 9/16 in.  | 4.0 mm                  | 2.5 mm | 12.0 mm                         | 10.5 mm | 1.0 mm   | 3.0 mm | 3.0 mm   | 1.5 mm  | 1.0 mm |
| Westmount     | 80 mm  | 3 1/8 in.   | 3.0 mm                  |        | 43.0 mm                         |         | 0.0 mm   | 1.0 mm | 20.0 mm  | 2.0 mm  | 1.0 mm |
| Hydra         | 100 mm | 3 15/16 in. | 13.0 mm                 | -      | 19.0 mm                         | -       | 1.0 mm   | 3.0 mm | 3.0 mm   | 12.0 mm | 1.0 mm |
| Pure          | 80 mm  | 3 1/8 in.   | 10.0 mm                 | -      | Variable                        |         | Variable | 7.0 mm | Variable | 9.0 mm  | 1.0 mm |

### LEGEND

|    |                                                          |
|----|----------------------------------------------------------|
| H  | HEIGHT                                                   |
| Js | JOINT WIDTH ON THE SURFACE                               |
| J  | JOINT WIDTH BETWEEN TWO PAVERS (excluding spacers)       |
| Cf | FLAT SHOE CHAMFER                                        |
| Cv | CHAMFER VERTICAL RISE                                    |
| Ch | CHAMFER HORIZONTAL DISTANCE                              |
| T  | THICKNESS OF SPACERS                                     |
| e  | FREE SPACE BETWEEN THE PAVER'S SPACER AND ADJACENT PAVER |



Typical Paver Joint