Installing TERAJOINT® Free Movement Joint

General

The handling of TERAJOINT® Free Movement Joints must be done by following safety instructions. The free movement joints on-site must be protected from weather, damage during handling, and possible damage during removal on the packing. Joints should be stored in dry and sheltered conditions.

Before use, the free movement joints shall be inspected visually for completeness and any signs of damage that might have occurred during transport or storage.

The assessment of the products is based on the assumption that during the estimated working life no maintenance is required, though regular checks should be carried out on the slab surface to ensure that any damage is detected and repaired as soon as possible. In case of a repair, it is necessary to assess mechanical resistance.

Installation tolerances

Joints should be installed as precisely vertical as possible and checked with a spirit level to ensure the proper function of the dowels during slab movement. The levelness and straightness of the joint installation should be according to the relevant requirements of the floor slab design and again checked using a standard laser level device or optical sight level.

Installation

Step 1. Sub-base level

The sub-base must be made as accurate and level as possible to the requirements on the slab drawing. The tolerance of the level must be considered when ordering joints. Typically, the joint height will be 10 mm to 35 mm less than the slab depth.

Step 2. Joint location

The required layout, position, and height of the joints will be specified on the floor slab drawing which must be followed closely. String or laser lines are placed to identify the position of joints according to the slab layout dimensioned drawings.

Step 3. Joint Installation

1. Joints are placed sequentially away from junction pieces or vertical column/wall.
    a. If Junction pieces are used the first joint is connected to the junction piece at the overlap section using a dowel bush, plastic bolt and steel nut.
    b. If junction pieces are not used, the first joint is placed adjacent to the column or wall allowing for isolation material. The connection overlap of TERAJOINT® must be cut away.

2. The joints are placed in the correct position according to the string line, and the height is adjusted. The height should be verified by laser level or similar at both ends, and the joint should be set vertical using a spirit level that can be placed across the top edges.

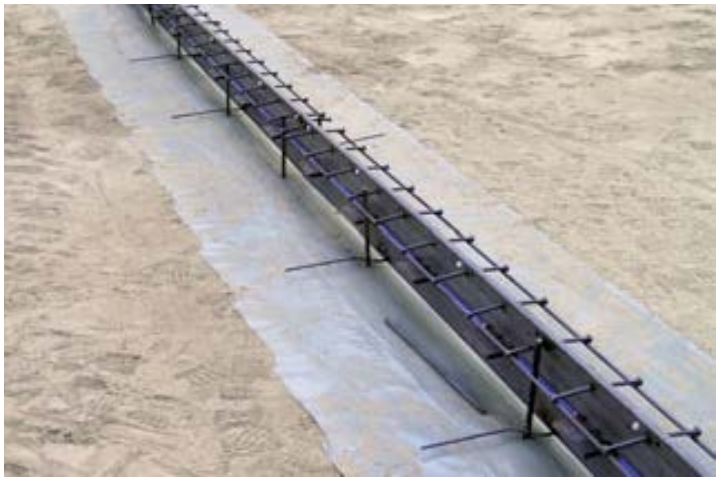
If required by the design, ‘X’ or ‘T’ junctions should be placed according to the required layout and set to the correct height using a laser level or equivalent.

The junction pieces are placed in the correct position and the height is adjusted. The height should be verified by laser level and the junction should be set horizontal using a spirit level in two perpendicular directions. The junction pieces can then be fixed in position using pins as described in section 3.

3. The joint can then be fixed in position using pins. Fixing pins should be 14 mm – 16 mm diameter and at least 300 mm longer than the joint height. A good practice is to use 14 × 600 mm fixing pins.

   For slabs up to 200 mm deep, 4 pins per joint are required, (up to 300 mm 6 pins per joint). The pins should be spaced equally along one side of the joint, on the opposite side to the first pour. Pins should always be placed so they finish level with studs of TERAJOINT® top strips. Any excess pins above the level of studs shall be removed before pouring. After the concrete has hardened to keep TERAJOINT® in position, before pouring the second side, pins must be cut off. It is important to cut pins from ground level or remove them from soil completely reducing any restraint to joint opening.

   Pins can be simply driven into place with a suitable impact gun or hammer.



4. As an alternative; TFX Installation Device can be used for TERAJOINT® installation. TFX is a simple to use ‘jack’ that not only fully supports the floor joints during set-up and pouring of concrete but also allows precise adjustment of the joint height which is critical for high-quality concrete floor slabs. The only TFX is recommended for installation of TERAJOINT® on top of insulation material (for example at cold storage projects). TFX Installation Device is a re-usable item.

5. Subsequent joints are aligned, fixed at the overlap using dowel bushes, plastic bolts, and nuts, adjusted and fixed in the same manner. The joints should be fixed so that the ends of adjacent top strips are not touching but have a clearance gap of between 1 mm and 2 mm to allow for longitudinal movement.

6. The final joint in any run will usually require being cut to length. The gap between the column/wall and the penultimate joint is measured taking into account suitable isolation material. The final joint is cut to length and installed in the same manner as previous joints.

7. If the joint layout requires a run of joints between two junction pieces and the distance between them is not a full multiple of 3 meters, then a cut joint in the run will be necessary. Joints should be placed running from the junction pieces to some point approximately equidistant from both when the gap is less than 3 m.

   The gap should be measured accurately between the top strips. The final joint should have a section cut from the center equal to the distance between the joints, keeping both overlap sections at the ends intact. The two pieces are then installed in the usual manner to each side of the gap and simply butt-welded together at the joint.

   Note: Do not weld two adjacent sides of top strips together! Side welds of top strips only.

Step 4. Pouring concrete

Once TERAJOINT® is correctly positioned, pouring the concrete can commence. Concrete should be poured to the top level of the TERAJOINT® with attention to consolidation around the dowels and sleeves. All plate-type dowels require close attention to filling around the dowels to eliminate the possibility of air entrapment. This should be done with a suitable vibrating poker.

After the concrete on one side has hardened to keep TERAJOINT® in position, before pouring the second side, pins must be cut off. It is important to cut pins at ground level or remove them from soil completely reducing any restraint to joint opening.