MOVEMENT JOINTS FOR TILE INSTALLATIONS 301MJ-2019-2021

Expansion joints and control joints (also referred to as isolation joints) are required in both floors and walls. Expansion joints must extend through both the tile and the substrate on which the tile is applied and are designed to accommodate continuing movement in the structure throughout the life of the building caused by expansion and/or contraction due to thermal or other effects. The installation of control joints in the openings left by the tile contractor are covered in the "Caulking and Sealants" section of the specification.

Control joints are:

- A joint cut or tooled into the concrete surface to control the location of cracks. A control joint in the tile to be located above the control joint in the substrate or above any construction cold joints. Saw cuts to be applied within the first twelve hours of concrete placement.
- Saw cuts to penetrate a minimum of 1/3 of the thickness of the slab. Saw cutting of the slab is not the responsibility of the tile contractor. These joints should be applied to the concrete within the first 12 hours after being poured.

Movement joints are:

- A joint in the ceramic tile, extending through the setting materials which is intended to minimize stresses in the bond layer due to differential movement of ceramic tile relative to the substrate, caused by thermal expansion and contraction.

Movement joints to be provided around the perimeter of floors, around columns, where tile abuts other hard materials, at the junction between horizontal and vertical surfaces and at transitions that include corridors and changes in direction, for example T's, L's and diagonals.

The location and type of expansion joints and control joints is the responsibility of the consultant. Exterior expansion or control joints to be caulked with suitable sealants. For interior expansion or control joints, prefabricated expansion joints or double metal or plastic terrazzo strips may be used with a suitable sealant. For narrower joints 6 mm or less a caulked joint with the appropriate sealant that is floor rated may be used. Some prefabricated expansion joints may be recommended by the manufacturer for exterior use.

Cold Joint (also referred to as contraction joint) – Cold joints are formed primarily between slab pours. A control joint to be installed over all cold joints in the slab. Where conditions do not allow one to install a control joint, the use of a crack isolation membrane may be considered, along with a movement joint in the tile surface as close as possible to the cold joint in the substrate.

Construction Joint – The plane where two successive placements of concrete meet but do not bond cementitiously. Sometimes dowels or reinforcing steel are used to hold the concrete on both sides together. A control joint to be placed over this joint in the tile.

Isolation Joint – A separation between adjoining similar or dissimilar elements of a concrete structure, usually a vertical plane. Its purpose is to prevent movements of the individual parts from causing cracks in the concrete. Also, sometimes called an expansion joint.

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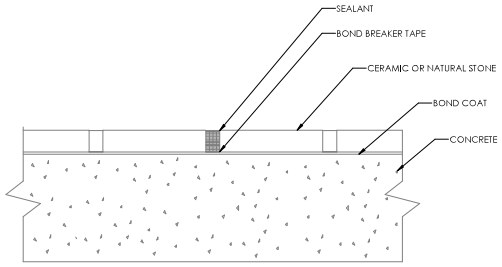
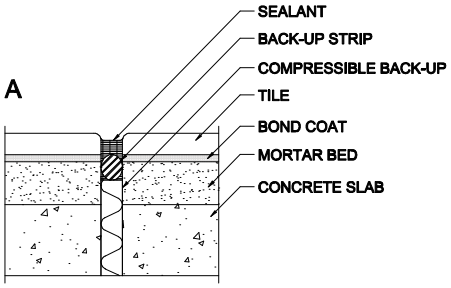
GENERIC MOVEMENT JOINT



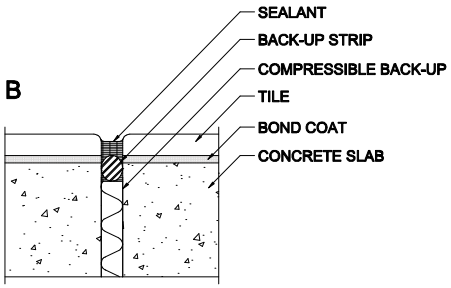
EXPANSION JOINT

A



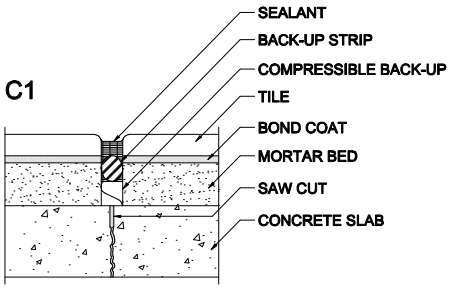
EXPANSION JOINT

B



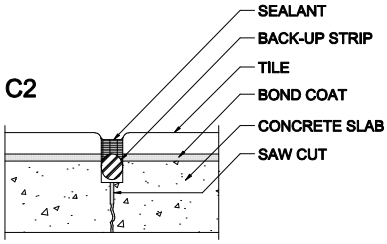
CONTROL JOINT

C1



CONTROL JOINT

C2



Structural Joint – An isolation joint intended to allow independent movement between adjoining sections of the building.

Non-linear Movement Joints – Generic movement joints or field joints, not over an existing expansion joint in the subfloor or wall. Sealant shall meet ASTM C920 and must be approved by the sealant manufacturer for the intended application. Crack Isolation membrane must be used for this application to work. Consult with CIS manufacturer.

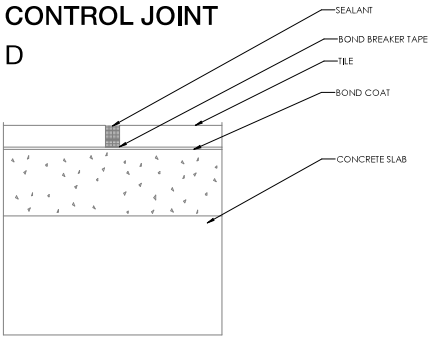
Recommended spacing and sizes for expansion joints and control joints are as follows:

Interior tile - movement joints 4800 mm to 6100 mm in each direction - minimum 6 mm width. Areas exposed to moisture or direct sunlight - 2400 mm to 3700 mm in each direction - minimum 6 mm width. Above-grade concrete slab substrates - 2400 mm to 3700 mm in each direction-minimum 6 mm wide.

Exterior tile - Due to high temperature fluctuations, use minimum 10 mm wide movement joints from 2440 mm to 3600 mm in each direction. In areas of extreme temperature variations (over 40ºC) between summer highs and winter lows joint width shall be a minimum 13 mm. The consultant shall specify the required joint width and required distance between joints.

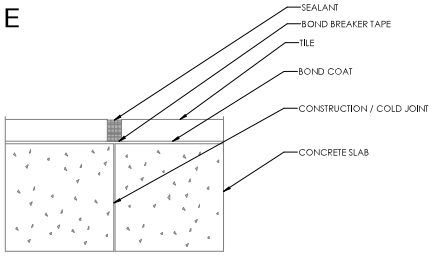
CONTROL JOINT

D



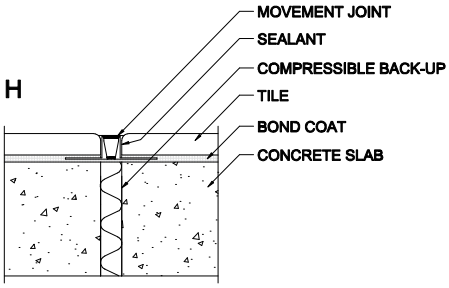
CONSTRUCTION JOINT

E



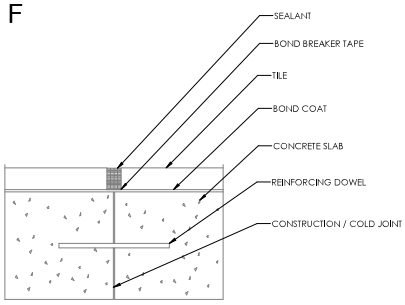
PREFABRICATED MOVEMENT JOINT

H



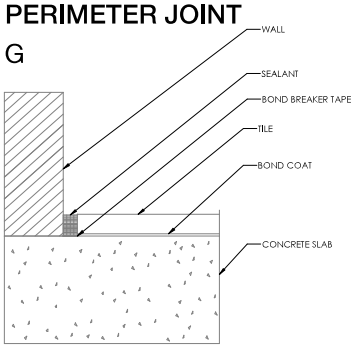
CONSTRUCTION JOINT

F



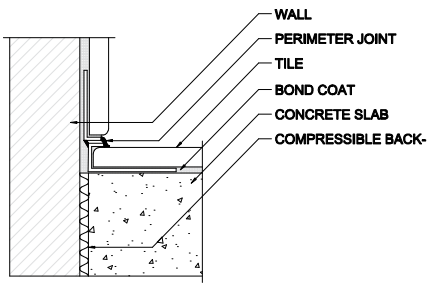
PERIMETER JOINT

G

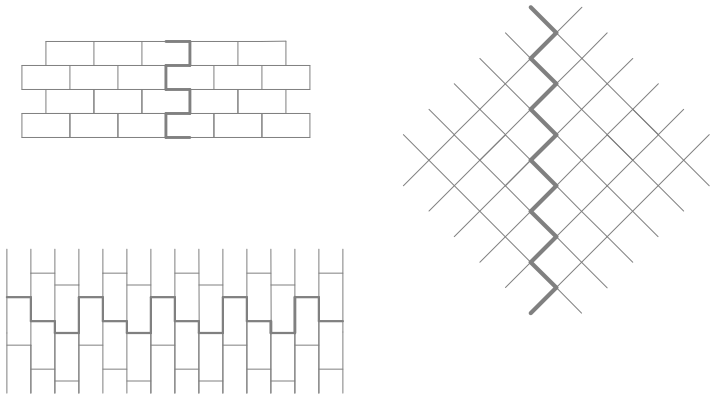


PREFABRICATED PERIMETER JOINT

I



3 EXAMPLES OF NON-LINEAR JOINT CONFIGURATIONS



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