

## DETAIL A

Expansion and control 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.
- 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.
- 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.

Control 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 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. Some prefabricated expansion joints may be recommended by the manufacturer for exterior use.

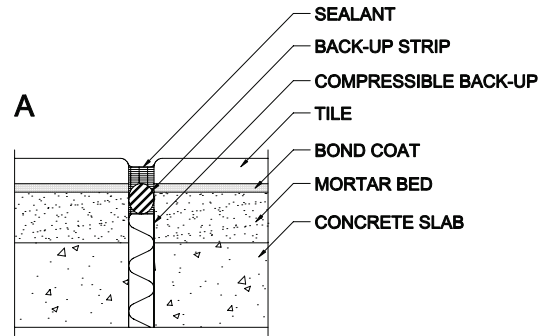
### COLD JOINT

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 control joint in the tile surface as close as possible to the cold joint in the substrate.

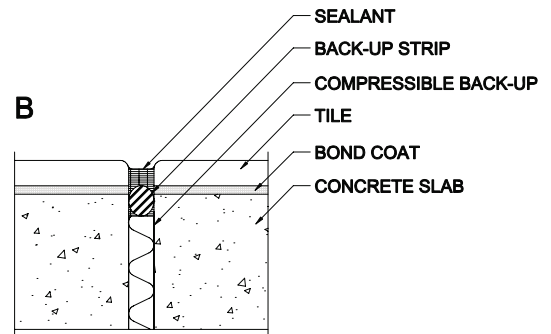
### CONSTRUCTION JOINT

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.

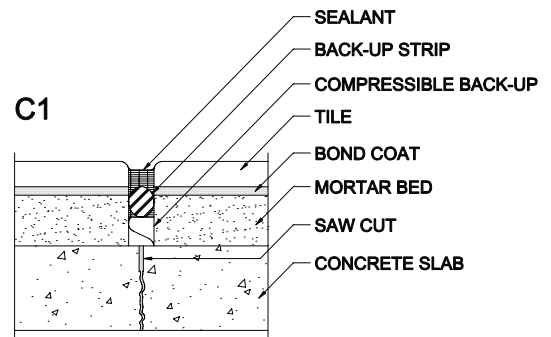
### EXPANSION JOINT



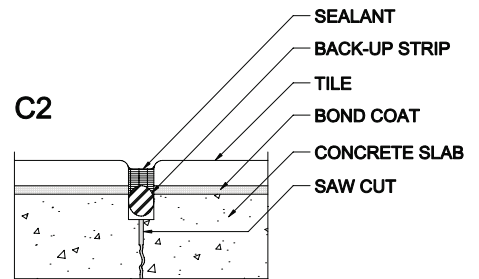
### EXPANSION JOINT



### CONTROL JOINT



### CONTROL JOINT



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### 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.

### STRUCTURAL JOINT

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

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

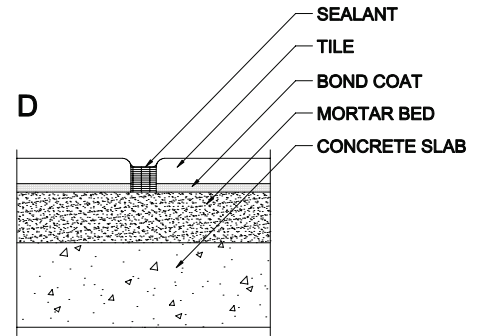
#### Interior tile

control joints 4878 mm to 6098 mm in each direction - minimum 6 mm width. Areas exposed to moisture or direct sunlight - 2439 mm to 3659 mm in each direction - minimum 6 mm width.

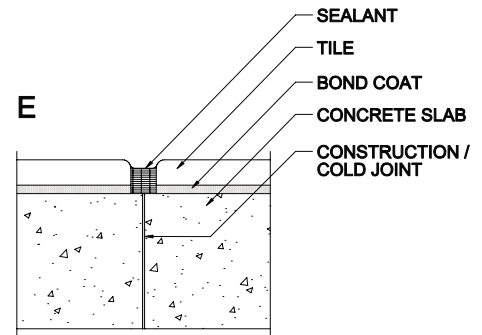
#### Exterior tile

Due to high temperature fluctuations, use minimum 10 mm wide control joints from 2439 mm to 3659 mm in each direction. In areas of extreme temperature variations (over 40°C) 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.

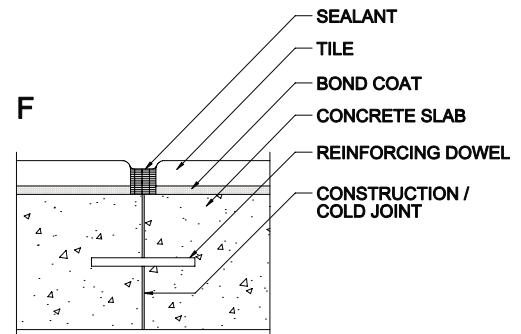
### CONTROL JOINT



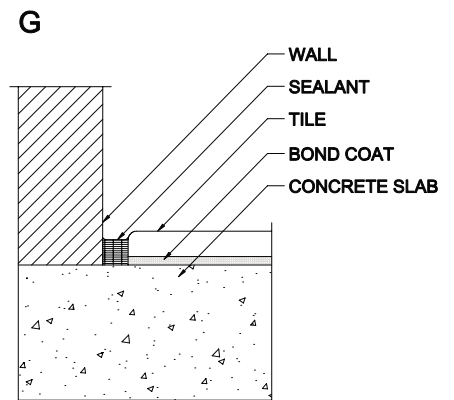
### CONSTRUCTION JOINT



### CONSTRUCTION JOINT



### PERIMETER JOINT



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