

## Types of Concrete Cracks

### Detail and characteristics of types of cracking

### How to use GOLD over such cracks

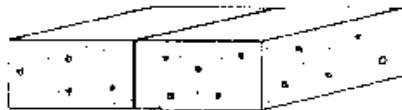
#### Concrete free of Cracks



This kind of concrete is rare. In the real world, concrete always cracks. Most cracks are caused by the shrinkage of the concrete mix as it cures. Properly designed and constructed concrete slabs have controlled cracking which poses little problem for tile when using Composeal GOLD for crack isolation.

Since concrete can crack even after years of being in place, Composeal GOLD provides low-cost protection against costly cracking which may be caused by shrinkage, future seismic movement, vibration or slight settlement.

#### Cold Joints



Occur where two separate concrete pours come together. These are usually linear, closely joined and bonded.

Cold Joints can be covered using Composeal GOLD. Simply bridge the control joint with the GOLD membrane and adhere to the slab. Industry standards dictate placement of expansion joints in tile works over cold joints. For information on expansion joints, consult the Tile Council of North America Handbook, section EJ-171.

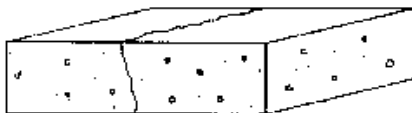
#### Control Joints



Since concrete tends to crack as it shrinks, control joints are sometimes cut into the slab within a few hours after the concrete is finished to create a "weakened plane". Since concrete cracks generally occur at the weakest point (or the point of greatest stress) this cut in weakened plane "tells" the concrete where to crack, and helps to avoid (as much as possible) unsightly random cracking.

Control joints can also be covered using Composeal GOLD. Simply bridge the control joint with the GOLD membrane and adhere to the slab. Industry standards dictate placement of expansion joints in tilework over control joints. For information on expansion joints, consult the Tile Council of North America Handbook, section EJ-171.

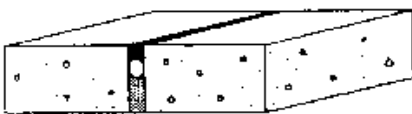
#### Random cracks



These meandering, sometimes linear cracks are generally caused by normal shrinkage (where control joints should have been placed). If the random crack varies in width or is wider than 1/16", check to determine if the crack could be the result of settlement, or dynamic movement.

Random cracking should be determined not to be dynamic (moving) or structural in origin before installing Composeal GOLD. Simply bridge the random cracking with the GOLD membrane and adhere to the slab. For information on expansion joints, consult the Tile Council of North America Handbook, section EJ-171.

#### Expansion Joints



Provided on large pours where movement is expected due to design of slabs or other structures. Expansion joints in concrete are generally about 1" wide and contain a compressible material in the joint. Sometimes the material is felt or poly-foam. Usually, well designed concrete expansion joints utilize a foam

All Expansion joints in slabs must be carried at *full width* completely through the tile work. When a waterproof installation is desired, the membrane must be carried continuously through the expansion joint. The GOLD membrane should be placed as a loop into the joint,

backer rod and flexible caulking or sealant as shown in detail above.

with the backer rod then placed in the joint, on top of the GOLD (always use a proper backer rod and expansion joint sealant.) If waterproofing is not required, the GOLD membrane may be terminated at the edges of the expansion joint. For information on expansion, consult the Tile Council of North America Handbook, section EJ-171.

### Settlement cracks



If the slab is not level on both sides of a crack, settlement is usually the cause. This is a situation in which no tile should even be considered until the cause of the settlement is discovered and corrected. Once the slab is stabilized, it should be leveled using a sand/cement leveling material before applying GOLD.

Composeal GOLD can not hold together a deficient structure. When a crack is determined to be a dynamic (moving), structural or caused by settlement, the cause of the problem should be corrected *before* Composeal GOLD and tile are installed over the slab in question.

### Heaving cracks



A serious situation where the concrete is at a different elevation on either side of the crack. As in settlement cracks, this condition must be corrected before tiling is even considered as an option. Once the slab is stabilized, it should be leveled using a sand/cement leveling material before applying GOLD.

Composeal GOLD can not hold together a deficient structure. When a crack is determined to be a dynamic (moving), structural or caused by settlement, the cause of the problem should be corrected *before* Composeal GOLD and tile are installed over the slab in question.