

## CONTROL JOINTS

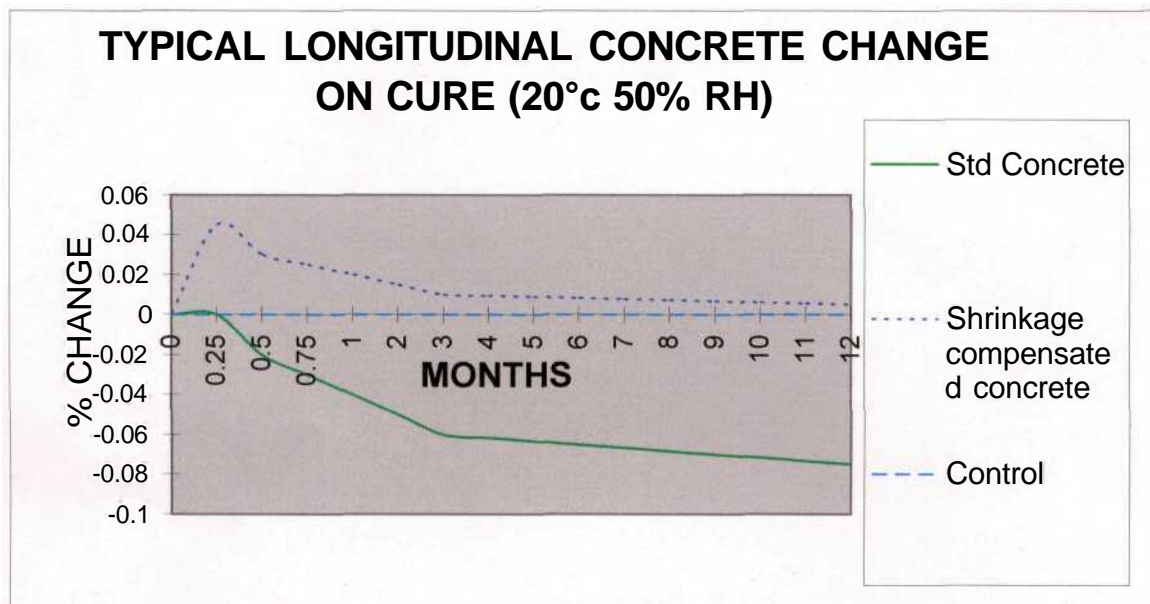
### QUESTION

How do I treat control joints in concrete floors if I plan to apply a Nuplex resin flooring system over the top?

### ANSWER

- Control joints are required in concrete floors because most concrete shrinks upon drying and curing.
- Concrete can also be influenced to a lesser extent by thermal movement, ground settlement or other structural issues such as suspended floors.
- Control joints are designed to induce weakness in concrete and allow anticipated shrinkage and movement to be controlled and treated within a carefully defined area.

The graph below gives a give to the extent of concrete shrinkage:



## Technical Bulletin

No.1 (cont'd)

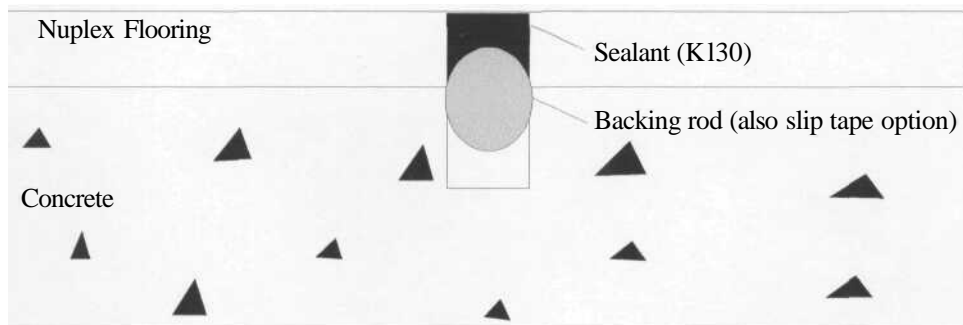
As you can see from the graph, you could expect a standard 5m x 5m grid design concrete floor to shrink up to 2mm around each grid perimeter (4mm total longitudinal shrinkage over 5 metres).

- Nuplex Sureshield, Terrazite, Supascreed, Surecote, Surechem, Traxite and other Resin Floor Toppings systems do not require specific joints to control structural or thermal movement other than those properly designed for the substrate.
- Once Nuplex resin flooring systems are applied and cured they become an integral component of the building structure. Cracking of the structure will often reflect through the resin flooring. Control of movement in the structure therefore very important
- Most control joints in a concrete substrate (including Nuplex resin flooring) can be eliminated with the use of specific designed shrinkage compensated concrete materials or post tensioning.
- All joints, junctions etc in the concrete substrate, subject to movement, must be brought through the Nuplex resin flooring and filled using a suitable flexible sealant:

Nuplex K130 epoxy sealant is recommended for floor joints as it provides a balance between chemical resistance, flexibility and joint edge support to protect against wheeled and other traffic damage. K130 is designed to withstand up to +/- 2.5% movement (refer to technical data).

Other more flexible jointing compounds (polyurethane, polysulphide, silicone etc) cope with more joint movement but suffer from lower chemical resistance and offer poor joint edge support.

Typical Treatment of a Control Joint



Not to scale

Soft joints in floors subject to heavy wheeled traffic will spall (crack and chip) on the edges.

Joints are to be avoided in severe chemical environments where Nuplex Surechem VE resin flooring may be preferred. Most flexible joint sealants have poor chemical resistance in comparison to the Surechem VE.

Control joints in wet areas, with falls, should be placed at the highest possible positions.

K130 joints should be designed to cope with anticipated joint movement. Joint depth should never exceed joint width. A bond breaker (slip tape) or backing rod must be included at the base of all movement joints to ensure maximum elongation.

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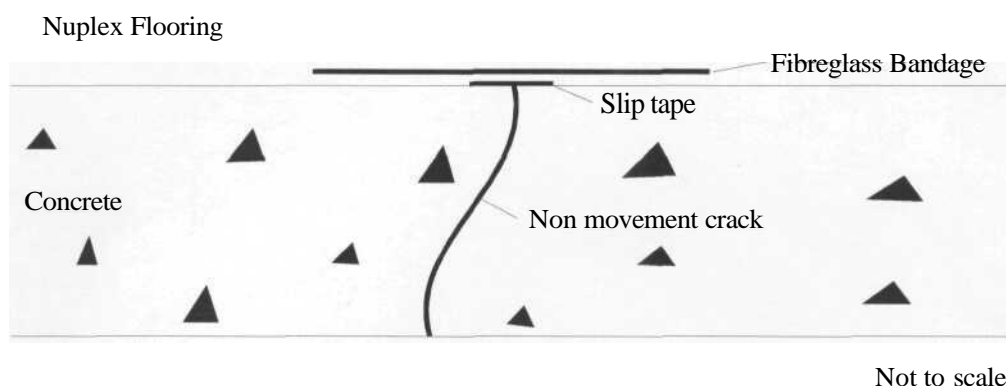
K130 joints considered likely to move more than +/- 2.5% should be left unfilled as long as possible to allow for maximum concrete shrinkage or treated as a maintenance item. They should therefore be placed in an area where replacement can be easily carried out (i.e. not under equipment or inaccessible areas).

Transitions between dissimilar flooring materials or structures where movement could occur should be treated using a control joint.

Seismic joints are to be specifically designed and approved by Nuplex Industries Ltd.

**"Non movement"** cracks and joints in the substrate may be treated using a fibreglass bandage incorporating a bond breaker (slip tape).

### Typical Treatment of a Non Movement Crack or Joint



Non movement joints in floor toppings may be treated using a compatible jointing resin such as C81 (polyester and vinyl ester floors only) or K130 epoxy sealant.

Joints between Nuplex resin flooring and stainless steel drains, metal flashings etc are best sealed using a suitable flexible sealant such as Elastothane 230 etc as they adhere to stainless and other metals better than an epoxy type sealant.

Always consult with Nuplex for specific design when applying Nuplex resin flooring over suspended floor slabs.

Other suitable jointing systems are available. Specific details should be discussed with the manufacturer and Nuplex Construction Products.

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