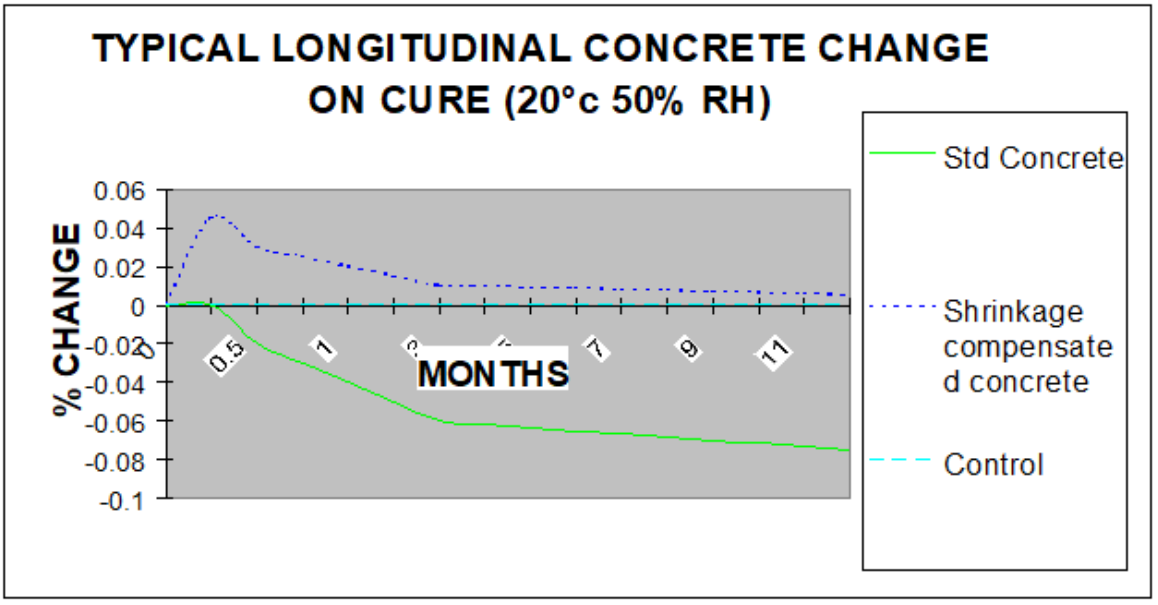
Technical Bulletins

Substrate Control Joints

Control joints are required in concrete floors because concrete shrinks upon drying and curing and it is also influenced to a lesser extent by thermal movement, ground settlement or other structural issues particularly in suspended floors applications.

Control joints are designed to induce weakness in the concrete and allow anticipated shrinkage and movement to be controlled and treated within a carefully defined area.

The graph below gives a guide to the extent of concrete shrinkage



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).

allnex resin floor toppings systems do not require specific joints to control structural or thermal movement.

Providing the correct substrate surface preparation techniques have been utilised and once the flooring systems have been applied and cured they will become an integral component of the building structure, the topping will never just crack or break on its own accord.

However, all designed joints, junctions, live substrate cracks etc in the concrete substrate subject to movement must be bought through the allnex resin flooring and filled using a suitable flexible sealant to avoid reflective cracking.
It therefore becomes vitality important both structurally and aesthetically when designing a floor and applying a resin floor toppings to control movement.

allnex K130 epoxy sealant is recommended for most floor joints as it provides a balance between chemical resistance, flexibility and joint edge support.

All K130 joints should be designed to cope with the anticipated joint movement, (see specific K130 technical data for details) the joint depth should never exceed the joint width and a bond breaker (slip tape) or backing rod must be included at the base of all movement joints to ensure maximum elongation.

K130 is designed to withstand up to +/- 2.0% movement.

K130 joints considered likely to move more than +/- 2.0% should be left unfilled for as long as possible to allow for maximum concrete shrinkage or treated as a maintenance item.
High movement joints should therefore be placed in an area where replacement can be easily carried out (i.e. Not under equipment or inaccessible areas).

Where increased flexibility is unavoidable a more flexible jointing compound (polyurethane, polysulphide, polyurea, silicone etc) can be used.
It should be noted however that most soft joint compounds will deal with the additional joint movement but will sufferer from lower chemical resistance and offer poor joint edge support, which when subjected to heavy wheeled traffic can spall, crack and chip along the edges.

Joints are to be avoided in severe chemical environments wherever possible, if unavoidable allnex C81 polyester joint sealant should be used for maximum protection, but the joints should be recorded as maintenance items and inspected, repaired, replaced regularly.

Control joints in wet areas incorporated within floor falls should be placed at the highest possible positions.

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

Seismic joints are to be specifically designed.

“Non movement” cracks and joints in the substrate may be treated using a fibreglass bandage with or without a bond breaker (slip tape). These joints should be noted and any installation details agreed to prior to the floor topping being installed. Consult the allnex technical team for advice.

Joints between allnex resin flooring and stainless steel drains, metal flashings etc are best sealed using a specific flexible sealant such as Sika Tank as they will adhere to stainless and other metals better than an epoxy type sealant.

For further advice or information do not hesitate to contact the allnex technical team.

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Date: Aug 2019
Replaces Jan 2014

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