FACE CONSULTANTS LTD
Global Flooring Consultants

Warehouse & Logistics News

The Expert >>

8th Article - Repairs to Joints: Part 1 >>

In the last edition, I discussed the maintenance of joints with particular attention to joint sealants. In this article we will consider some of the basic issues of damage to joints and particularly with repairs to sawn joints..

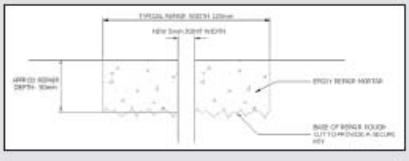
Careful attention to sealants will minimize damage to the edges of the joints - the arrises. However, a proportion of joints will get damaged even if well sealed and there are other factors to consider which are discussed.

So why do joints get damaged? Most of the damage is caused by truck wheels, although some will be caused by careless scraping with pallets and truck forks. The hard wheels of pallet trucks and reach trucks are the worst offenders. *See above picture.* Generally, counter balance trucks, with their larger softer tyres are less of a problem. It is also relatively unusual to see much damage in very narrow aisles where turret trucks operate. Although they have similar tyres to reach trucks, wheels tend to be larger and as they run in straight fixed paths there are no screwing effects from turning.

Joint arrises are subject to very high localized impact loads causing the concrete to spall and the wider the joint, the higher the potential impact as the wheels drop into the joint gap. It is therefore important to keep the gap as small as possible, although with joints that are moving, there is a lower limit because of the need to provide enough sealant to enable expansion and contraction to take place. When arrises are damaged, the joint gap inevitably gets larger giving greater potential for further damage. The deterioration process therefore accelerates and so it is important to nip damage in the bud.

The most common joint is a sawn joint. These start out life with a gap of about 4 mm. If they do not open or only by a small amount, they usually do not get significant damage. The wider sawn joints, often referred to as dominant joints, are more likely to be damaged. When the joint arrises are reinstated, the new gap should be cut to only 4 or 5mm.

Reinstatement is carried out as *shown in diagram at the bottom of the page*, using an epoxy based mortar. The repair needs to be substantial so that impact stresses are distributed and contained within the repaired area. The damaged area should be cut back by at least 60mm either side of the joint and at least 50mm deep. The repair is made in one piece and then sawn right through once the mortar has hardened. Finally, the repaired area is ground flush to give a smooth running area. The joint is then filled in the usual way.



There is absolutely no point in scrimping on these repairs as some are tempted to do with thinner sections of repair. Most of the cost in repairs is in labour and in warehouse disruption and you need to be sure that the repair will last.

The next two editions will have more on joints. I will be looking at repairs to formed construction joints and at the mechanical aspects of joints - what we call load transfer.

Face Consultants
Contact: Tony Hulett
Tel: 07989 708514
W: www.face-consultants.com