FACE CONSULTANTS LTD
Global Flooring Consultants

Warehouse & Logistics News

# The Expert >>

## Floor Loadings at Joints – Part 2 >>

**In the last edition, I described how the load carrying capacity alongside joints is only half of the capacity at the centre of the slab. It is therefore important that when floors are designed, careful attention is given to the structural integrity of joints. The situation at the intersections of joints can be even more critical in some circumstances.**

Generally speaking, racking legs should have little effect on floors at joints. This is because they should not be positioned close to joints. Designers should aim to keep them 300 mm away - however, the joint structure is still important!

Mechanical handling equipment (MHE) is the main consideration at joints as they have to cross them - and the joint intersections. MHE can be very heavy - particularly in the paper related industries.

When a load passes over the edge of a slab, the slab bends downwards, more so at a corner. If there is a good connection to the next slab, the bending is reduced. The bending compresses the ground just under the slab so that eventually, a small void can be created. You can see that the situation can then progressively get worse. A bigger void allows more bending and ventually a step occurs at the joint which gets damaged by the MHE. The floor condition is now on a downward spiral.

All of this takes place over this first one to two years. Owners and tenants begin to panic because they think the floor is falling apart. All parties get into entrenched positions with no one accepting responsibility, and the next stage is the legal proceedings. By now, the floor will be five years old and if nothing has been done, it will be falling apart!

All of this is avoidable, if owners and builders understand and accept that the floor will change shape as a result of shrinkage - and accept that some attention will be required. In fact, the industry needs to accept that it takes two years to complete a floor!

Some joints will open quite wide and this is not easily avoided. Where these are sawn joints, the cracks beneath the saw cuts need to be filled with grout so as to reinstate what is known as aggregate interlock. A new crack may still form, but that does not matter provided that it remains a fine crack. If it opens further, then it may be necessary to repeat the operation. The slabs then start to act together again as MHE passes over the joint.

Formed joints with dowel systems tend to be less of a problem, but the joint systems will only tolerate so much of a gap before they get sloppy and start to deteriorate. They are not so easily fixed as the sawn joints - I may get back to this in later editions.

Next edition: Jointed or Jointless floors.

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