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Jointed and Jointless Floors>>

Out of the first eleven articles in this series, seven have been on the subject of joints, so regular readers are beginning to appreciate their importance in all aspects of design, construction and maintenance. It seems a fair question to ask - why have joints at all? - Particularly when jointless floor options are available.

Before attempting to answer this, we need to clear up a potential miss understanding. Very few floors are completely without joints. Joints have to be provided at intervals of about 40 to 50 metres in each direction as there are practical limitations on how much floor can be laid in one session. Only smaller floors are likely to be completely jointless.

The difference is that in a jointed floor these larger areas have saw cut joints at about 6 metre intervals whereas in a jointless floor there are no saw cut joints.

We now need to remind ourselves as to the reason for joints. Apart from providing for breaks in construction, they allow the floor to shrink over the first one to two years without cracking. The principle is that all of the joints should open a little so that stresses do not build up and cause cracking. In practice, the joints do not all open by the same amount - some sawn joints do not open at all while others open much wider. Readers also need to appreciate that it is difficult to give absolute guarantees that there will be no cracking in floors, but with reasonable care, cracked panels in floors should be the exception rather than the rule.

So back to the question in hand, jointed or jointless? The decision to go jointless seems to come down to balancing the benefit of having less joints against a possible higher risk of cracking and weighing this up in the light of any cost difference.

The benefits of dispensing with the sawn joints are in lower maintenance costs in filling and repairing joints and less wear and tear on truck wheels. This seems to be of particular relevance in open storage areas and wide aisle racking areas where trucks can roam in all directions. Pallet trucks are known to be particularly damaging to joints, as can be seen in some of the fast moving grocery distribution centres. Joint damage is a possibly less important consideration in VNA installations.

Trucks will still have to cross construction joints on most floors. It used to be the case that these joints opened wider in jointless floors, but in recent years, it has been noticed that construction joints in jointed floors often open just as much. This is probably due to improvements in liveliness of sub base construction causing less resistance to the shrinkage of the slab. It is therefore important to have maintenance plans in hand to deal with wide construction joints in all floors.

Do jointless floors crack more than jointed floors? Probably not. There might be more risk in heavily loaded ground supported slabs such as VNA where the pressure of the loads on the sub base can restrict the shrinkage of the slab. But this is also a function of the quality of the sub base. Stiffer (harder) sub bases which are very level cause less friction on the underside of any slab.

Let me conclude by saying that it is not easy to be definitive on this subject and cost will inevitably be an important factor.

It is also worth noting that if you need a piled supported slab, there will be no choice - it will be jointless!

Next Edition: Surface maintenance and coatings.

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