

Green Sawing

Is the process of controlling random cracking by sawing uniform joint spacing in early age concrete without tearing or dislocating the aggregate in the mix.

Moisture evaporates from newly placed concrete during the process of curing, the volume decreased and the shrinking process produce uncontrollable random cracks throughout the slab unless a predetermined cut where you want it to crack and form a joint for temperature expansion and contraction.

Troweling the pavement surface advance and extend the window of time during which green sawing can take place.

When all goes well on a project, cracks form at planned locations where contraction joints are placed in the slab. Transverse and longitudinal contraction joints are made by sawing the concrete with single-blade, walk-behind saws. Each transverse and longitudinal saw cut induces a point of weakness where a crack will initiate, and then propagate to the bottom of the slab. New concrete slabs crack whenever tensile stresses building up within the concrete overcome the concrete's tensile strength. Early volume changes are associated with the concrete's drying shrinkage and temperature contraction.

In most cases, cracks first appear at large intervals, 30-150 ft (10-45 m), and then form at closer intervals over time. Unfortunately, some concrete pavements do not crack at the saw cuts and instead crack at unplanned locations.

Steel tie bars are generally used at longitudinal joints to prevent joint opening, and dowel bars may be used to enhance load transfer at transverse contraction joints depending upon the expected load.

Joints control natural cracking when design and constructed properly.

