Detecting possible voids behind PT cable anchors

This application note describes how to inspect a new multistorey concrete building with post-tensioned floor slabs.

Situation

The contractor experienced several instances of the PT cable anchor being pulled into the concrete when the tensioning force was applied. It was suspected that the congested rebar configuration led to voids in the concrete behind the anchors.

Repair is an expensive proposition that requires chipping of the concrete and delays on the construction schedule. There are also significant safety issues with the repair process since the anchors are on the edge of the floor several stories up in the air.

The customer had several additional locations of suspected voids based on visual inspection of the cable anchors. The condition needed to be confirmed to ensure the structure was safe.

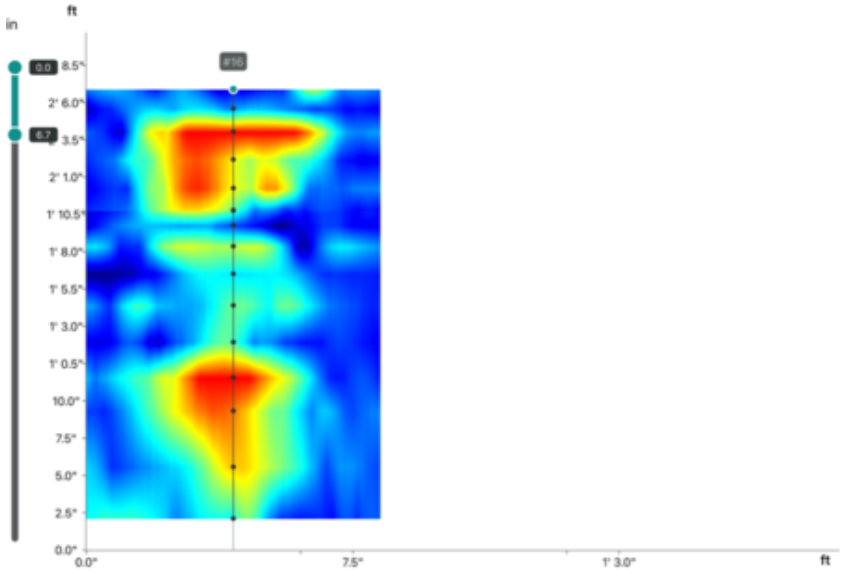

Figure 1 – Stripe scan of problem area showing strong reflection from discontinuity in the concrete around the PT

cable.

Solution

The suspected areas were scanned with the PD8000 to confirm there were no voids. The PD8000 is well suited for this work. The A.I. function allows for seamless stitching and the stripe scan mode provides excellent imaging of the concrete conditions.

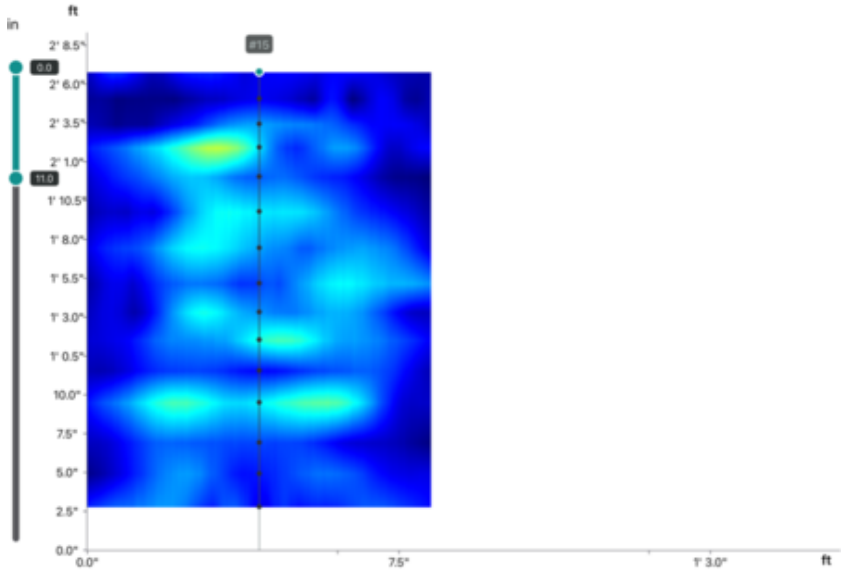

Figure 2 – Stripe scan of good area with lack of strong reflections indicating solid concrete around the PT

See more about ultrasound pulse echo, concrete strength testing and many other related topics in our Tech Hub.