

Jack-Assisted Driveway Slab Remediation

INDUSTRY

Industrial

STRUCTURE

Roadway

PROBLEM

Sinking driveway

LOCATION

NSW, Australia

DURATION / YEAR

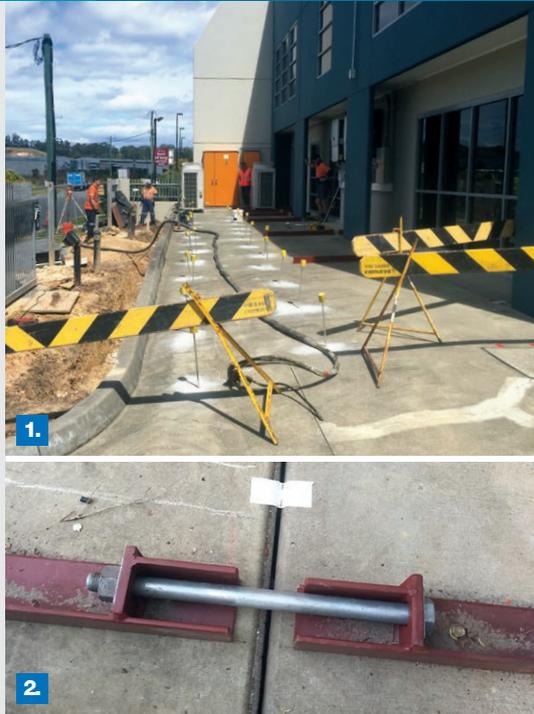
1 day / 2015

TECHNOLOGY

Uretek Slab Lifting and Jacks

BUSINESS UNIT

Mainmark Australia



Summary

An external concrete driveway slab with deep edge beams had settled approximately 30mm and had moved 100mm out of its horizontal position. 19m of edge beam and 76m² of slab required level correction.

Mainmark applied a combination of bottle jacks placed atop bored piers and Uretek resin injections between the piers, to effect the re-levelling and re-support. A turnbuckle system aided the horizontal correction. A completely satisfactory remediation was achieved in nine hours.

Objectives

The objectives were to raise and return the slab to its design levels, to re-support it and to move the slab horizontally back to its original position.

Solution

Six bored piers were placed under the edge beam at 3.6m centres. The spacings had been determined by the client's project engineer based on the strength of the edge beam. The bored piers were stopped short 320mm below the underside of the edge beam.

Six 20 tonne capacity bottle jacks were placed between the bored piers and the underside of the

edge beam. The bottle jacks were used to lift the beam 30mm at the southern end and 6 to 10mm at the northern end.

During the lifting of the edge beam by the jacks, Uretek resin was injected from above, to fill the void created and to resupport the slab.

The lifting operation brought the slab back horizontally 85mm. Then a turnbuckle system fabricated by the client's builder pulled it back the final 15mm.

Once the required levels were achieved, metal posts and metal packers were placed between the edge beam and the bored piers. The jacks were retrieved and the jacking slots filled with high strength, non-shrink grout.

The required lift was achieved and the slab was resupported and returned to the required position vertically and horizontally. The client, engineer, local council and builder were all very pleased with the result.

Pictured above: 1. Injection tubes in place. 2. Turnbuckles aided horizontal correction. 3. Jacks inserted above piers. 4. Uretek resin injected. 5. Jacks withdrawn and slots grouted.