

# STABILISING AND RELEVELING ALUMINIUM PLANT FOUNDATIONS

## Site Profile

Alspec Aluminium is one of Australia's largest powder coating aluminium specialists.

Their warehouse is 10,000 square metres in size and located in Eastern Creek, Sydney. The majority of the Eastern Creek area is built on reclaimed marshland and mangrove area.



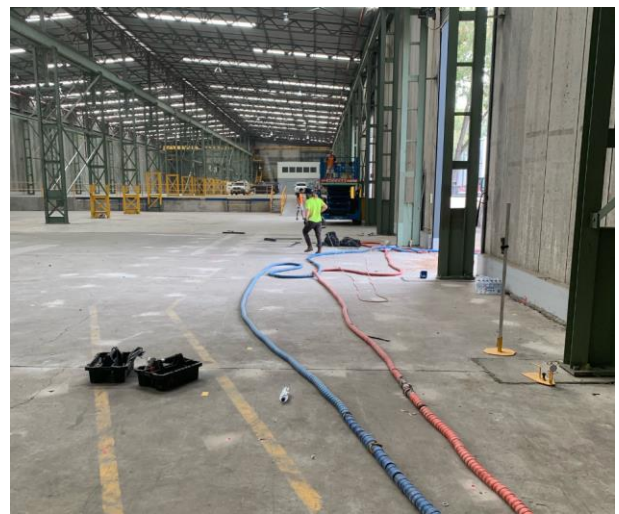
## The Situation

Our client was experiencing significant and costly disruptions to their production line as a result of the concrete flooring subsiding.

This meant that every time there was heavy rain or an act of subsidence causing the ground beneath the concrete slab to shift, the lasers on the production line were being knocked out, taking out their production process. This meant that Alspec had to cease production and engage a specialist to come to the site to recalibrate their lasers. A costly exercise in both time and money.

Due to the large costs and extended downtime that would be required if they chose to shut down the

processing operation and choose to replace the entire concrete flooring of the huge warehouse, they sought a more cost effective and time efficient solution.



## Our Solution

Alspec engaged Resinject to propose a suitable solution to re-level and stabilise the affected concrete slabs, that would have the production line continuing at its normal rate of operation, downtime was not an option. Subsequently, Resinject's experienced consultants promptly attended the site and assessed the foundation issues.

After looking at the building plans it was discovered that the slabs had been built on 4 metres of poorly compacted fill materials. Over a period of time, the fill has experienced a degree of settlement which has transferred to the concrete slabs. Some areas of the slab were seeing a drop of up to 120mm. This was deemed as the primary mechanism causing the settling and subsiding of the foundations.



To raise and re-level the foundation slabs, Resinject proposed a treatment plan consisting of a grid of injection points across the entire slab area of 10,000 square metres. This treatment would prevent their production line from getting knocked out due to movement of their lasers.

Following this, a series of stabilising piers were proposed to a depth of 4m centres around the perimeter of the slab to counteract any future subsidence by improving the load-bearing capacity of the ground ensuring longevity of the re-leveling works.

Alspec agreed to the proposed solution and Resinject's services were booked in for shortly thereafter.

### The Results

After completing the proposed injection solution, Resinject re-measured the levels of the foundation slabs and confirmed that the slab had been stabilised and re-levelled.

Furthermore, Resinject services were completed within a very tight timeframe with two crews operating on a 24-hour basis for a week thereby

ensuring that Alspec experienced zero downtime. With the foundations successfully raised, re-levelled, and stabilised, the production line has been protected from unnecessary and costly interruptions caused by foundational movement.

### Acknowledgements

Resinject would like to thank Alspec Aluminium for the opportunity to demonstrate our sustainable, and cost and time-effective solutions.

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