

Teretek® Raises and Re-supports Factory Floor For a Safer Working Environment

PROJECT PROFILE

2016-09UK

mainmark



INDUSTRY

Industrial

STRUCTURE

Warehouse

PROBLEM

Voids and subsidence

LOCATION

Southport, England

DURATION / YEAR

2 weeks, 2017

TECHNOLOGY

Teretek® slab-lifting and void-filling

BUSINESS UNIT

Mainmark UK

Summary

Instanta is a leading manufacturer of commercial water products and catering equipment. Its large industrial plant is based in Southport, Merseyside and the site consists of numerous buildings including stores, offices, and specialist workshops.

The company's large 800sqm manufacturing and assembly warehouse had begun to subside. While the perimeter of the building was piled and standing firm, the internal floor slab was not piled. As the ground was formed of peat soils over a greater depth, the internal non-piled floor slab had started to subside. This caused the floor level between the building's perimeter and the middle of the warehouse to dip by as much as 280mm.

Instanta knew that subsidence had been occurring over the years and made periodic attempts to address the issue by modifying and adding to the slab to try to mitigate the problem. This included removing part of the slab where the heavy manufacturing plant was located, and replacing it with a raft slab, piled to a depth of 8m.

As the floor slab had continuously settled over the years, a lip had formed where the forklift was entering the warehouse and driving onto the warehouse floor slab. This had been topped up to compensate for the lip that formed, however, the lip had again become a hazard for staff and the forklifts were unable to run smoothly. The uneven floors also created operational issues for machinery which needs to sit precisely level in order to function properly and avoid misaligning. The amount of lean on the floor slab was also causing problems for the workers who continuously had to lean one way or the other in order to do their work.

After experiencing years of progressive subsidence due to the underlying peat soil, Mainmark provided Instanta with a solution to help re-level the floor.

Teretek® Raises and Re-supports Factory Floor For a Safer Working Environment continued

Objectives

Mainmark was required to lift the large 800sqm warehouse floor slab by up to 180mm to help address the underlying subsidence issue. Additional void filling was also required at the perimeter edges of the floor slab to help stop any potential voids from forming from the level of uplift in the centre of the slab.

It was mandatory that the project be carried out within a tight two-week window, working around staff and fixtures, including machinery and warehouse racking, to ensure there was no business interruption.

Solution

Mainmark recommended Teretek®, a proprietary two-in-one solution, to lift and re-level the warehouse floor. Teretek is an engineered resin injection solution that is fast-acting and cost-effective. The non-invasive process requires no excavation and has no detrimental effects on the environment.

Teretek was applied through a highly targeted injection pattern, which carefully and precisely lifted the floor the required 180mm. The Mainmark team constantly monitored the floor level using lasers for pinpoint accuracy.



Mainmark Technicians injecting Teretek® engineered resin while monitoring the lift using a laser-receiver

The application was successful and completed ahead of schedule. As a result, Instanta contracted Mainmark to carry out additional void filling work around the perimeter edges of the warehouse floor for added support.

As specified, the works were completed within the two-week timeframe allowing Instanta to maintain its business operations, including despatching and receiving goods from its warehouse.



Ladder positioning before and after re-levelling work with Teretek® resin injection

Dave Wilson, Operations Director, Instanta, said, *“This was a complex project and we had difficulty finding a contractor that would commit to lifting the floor. Mainmark was the only company that would do so. The Mainmark team engaged with us from the early planning stage and was very knowledgeable. The project went smoothly and finished on time. I was very impressed by their professionalism and couldn’t be happier with the outcome.”*

The project has resulted in a safer working environment for Instanta’s employees and the level floor area is trafficable again.