SOIL STABILISATION

RESTORATIONS OF **INDUSTRIAL SLAB FLOORS**
BY MEANS OF **INJECTION** OF **EXPANSIVE** RESIN

GEOSEC
GROUND ENGINEERING

BEFORE AND AFTER

THE RESULTS OF THE CONSOLIDATION

GEOSEC
GROUND ENGINEERING

What can cause an industrial floor to settle?

The causes of the settlement

Industrial floor slab settlements often occur under substantial loads from heavy machinery, racks, silos, etc. Even with a well-designed floor structure, repetitive vibrations over time can impact the floor, causing the ground beneath it to subside.

Our Solution

SLAB STABILISATION is the **GEOSEC®** solution aimed at consolidating the soils beneath slabs and is recommended for re-levelling or to improve their load capacity. The expansive resin is perfect for consolidating the base of industrial floors, guaranteeing adequate consolidation. In addition, when the structure allows for it, the settled floor can be lifted back to its initial level.

Unique benefits

The method allows for a fast and minimally invasive intervention, forgoing the need to move or dismantle heavy machinery, avoiding business activity downtime.

SOIL STABILISATION completely forgoes the need for invasive, lengthy, and complex work; no excavations or demolitions will be required, and the work will be carried out fast (even in just a few hours), cleanly and with precision, minimising costs and inconveniences.

PHASES OF OPERATION

PRECISE
NON-INVASIVE
CLEAN
AND FAST

GEOSEC
GROUND ENGINEERING

1 Identification of settled areas

Precision control

By employing laser measurement technology, our technicians can accurately pinpoint the locations on the settled floor surface where sinking is most severe. This process allows them to define the affected area's boundaries and calculate the level difference in comparison to the non-settled regions. In this way, it will be possible to define the exact sequence of injections and the quantity of resin to be injected at each point.

For deep settlements

In case of in-depth consolidation, our technicians can perform a geophysical test by means of electrical resistivity tomography.
This technique allows for a reliable reconstruction of the image of the ground beneath the foundation by detecting weaknesses such as cavities, voids, washouts, leaks from the sewer network, and water accumulating in the soil.

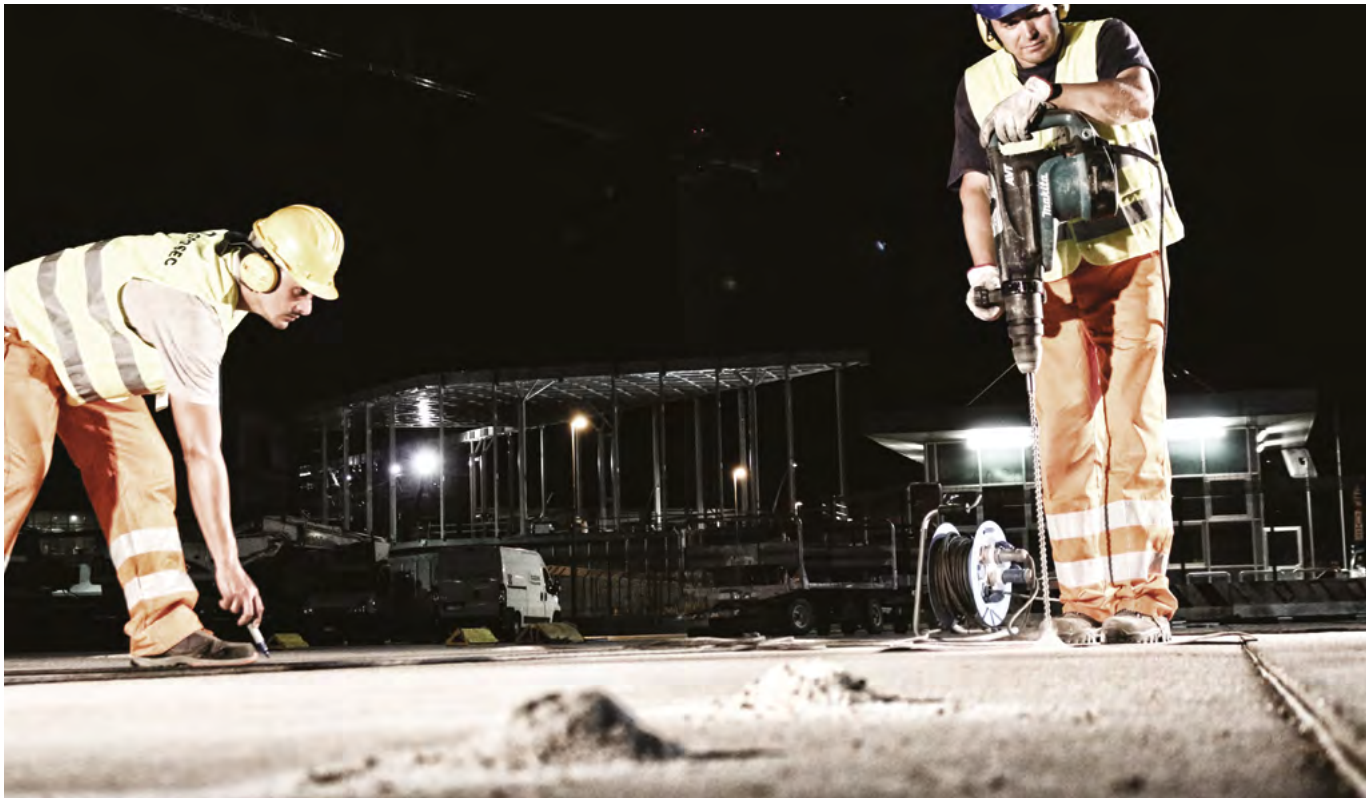
2 Search for any utilities that may interfere

Location of utilities

Before performing initial drilling in the floor for the ensuing insertion of injection tubes, it is important to identify and trace any utilities, piping, and structures that may interfere with the injections. The necessary information can be gathered from property documents (if available), but it is particularly valuable to obtain it through non-destructive testing methods, such as video inspections, CAT scanning, and radar technology. Before carrying out the drilling, the client must accurately indicate the location of any type of utility that may interfere with the scope of the work, ensuring that no damage is caused by the drilling*.

** Our company can recommend or provide this type of service thanks to our cooperation with specialised companies.*

3 Drilling Operation



Minimally invasive boreholes

Once the intervention areas have been defined, and the utilities and piping in the work area have been identified and marked, small injection drillings can be performed using manual drills and drill bits suitable to drill to the necessary depth as estimated.

Fast restoration

This minimises the invasiveness of the intervention, except when the nature of the workflow or safety reasons make it necessary to drill through the floor, which can subsequently be replaced by the client or repaired by covering it with mortar.

4 Inject Expanding Resin

Insertion of tubes

Once the small drillings have been made and the metal tubes through which the resin is injected, have been inserted, a fixing coupling will be attached to the injection gun which pushes the resin from the laboratory-truck through hoses. Once attached, workers will position the laser sensors.

Live monitoring

During the injection process, real-time monitoring is performed of the lifting of the settled surface. In general, the resin is injected just below the settled floor, but, if necessary, it can be injected in depth using the patented **GEOSEC®** system for in-depth interventions.

5 Restoring to initial level

Guaranteed consolidation

The main objective of **GEOSEC®** works is to consolidate the base of floors, restoring the safety of the settled area. Whether dealing with floors with a very low thickness and rigidity or irreparably damaged floors, it is possible to continue with the lifting of the structure thanks to the pressure exerted by the expansive resin.

Controlled lifting

If the floor allows for it, a controlled lifting can be achieved, step by step, in order to restore it to its initial level.
In each project, our technicians will verify whether this result can be achieved in order to ensure our clients' satisfaction.

WHY CHOOSE GEOSEC?

OUR STRENGTHS

GEOSEC
GROUND ENGINEERING

CHOOSE THE ORIGINAL

GEOSEC SOLUTIONS

GEOSEC® has invented the method of ground consolidation and stabilisation by means of 4D tomography control of resistivity and seismics. For over 20 years, **GEOSEC®**has ensured a high level of experience in the sector through thousands of successful interventions. With **GEOSEC®**, you can place your trust in the know-how, technologies, and skills that are unique to the inventor of the method.

CONSOLIDATING WITHOUT CONTAMINATING

GEOSEC® takes care of the environment, and after the intervention is carried out, the soil will not be contaminated. **MAXIMA®**is the resin exclusively produced for **GEOSEC®** by qualified multinationals in the sector.

TECHNICAL ADVANTAGES

No rebuilding of the old floor is required, unless it is severely damaged.

It is not necessary to clear the intervention area of tools or heavy machinery.

The intervention is very fast. Our teams can consolidate up to 80 m² of industrial floor per work shift.

If the settled structure allows for it, the floor can be lifted and restored to its initial level. In addition, the intervention allows for injections to be made into the joints between industrial floor slabs, thereby removing steps and unevenness, of various centimeters, from their edges.

GOOD WORKMANSHIP WARRANTY

GUARANTEED QUALITY

GEOSEC®'s solution is unique and holds prestigious national and international technical certificates. It offers a ten year company guarantee with the possibility of upgrading it to a ten year insurance backed guarantee, thanks to its cooperation with major international insurance companies.

WANT TO **KNOW** MORE?

FOR MORE INFORMATION, CONTACT US FOR A NO OBLIGATION CONSULTATION.
OUR ENGINEERS ARE AT YOUR SERVICE THROUGHOUT THE UK.

GEOSEC Ground Engineering Ltd
26-28 Hammersmith Grove
London, W6 7BA
Company registration number: 14834588
info@geosec.co.uk

0800.061.4477 **Get a FREE Quote**

www.geosec.co.uk

GEOSEC
GROUND ENGINEERING