



# Ground Engineering Contractors delivering engineered impact compaction

Dynamic Compaction Solutions specializes in providing and implementing ground treatment solutions on compressible unstable sub-grades through the use of impact compaction.





**Dynamic Compaction Solutions' engineering resources** offer superior impact compaction systems and expertise to the Construction Industry throughout the entire region.

## Impact compaction

- **Compacts In-situ Fills and Natural Soils to 5m depth**
- **Reduces sub-grade settlements**
- **Identifies Soft & Weak sub-grade areas**

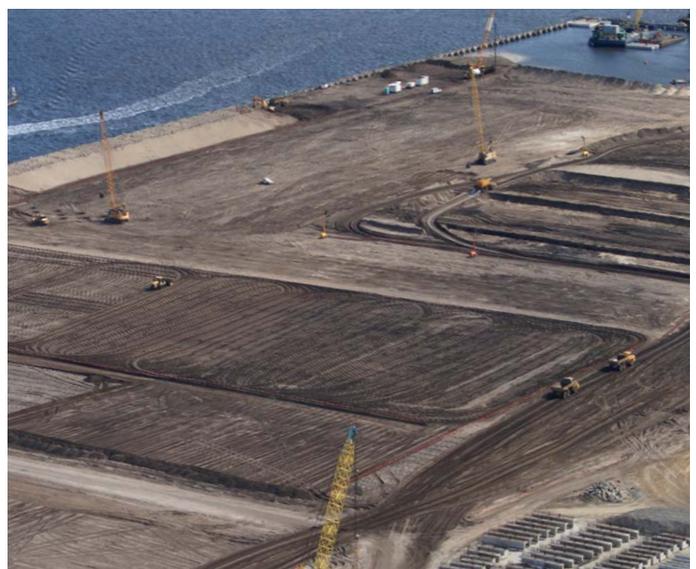
Impact compaction is a form of dynamic compaction which exerts high dynamic loads to in-situ soils with the rotation of non-circular Impact drums as the machine travels at approximately 16km/h over the area being compacted.

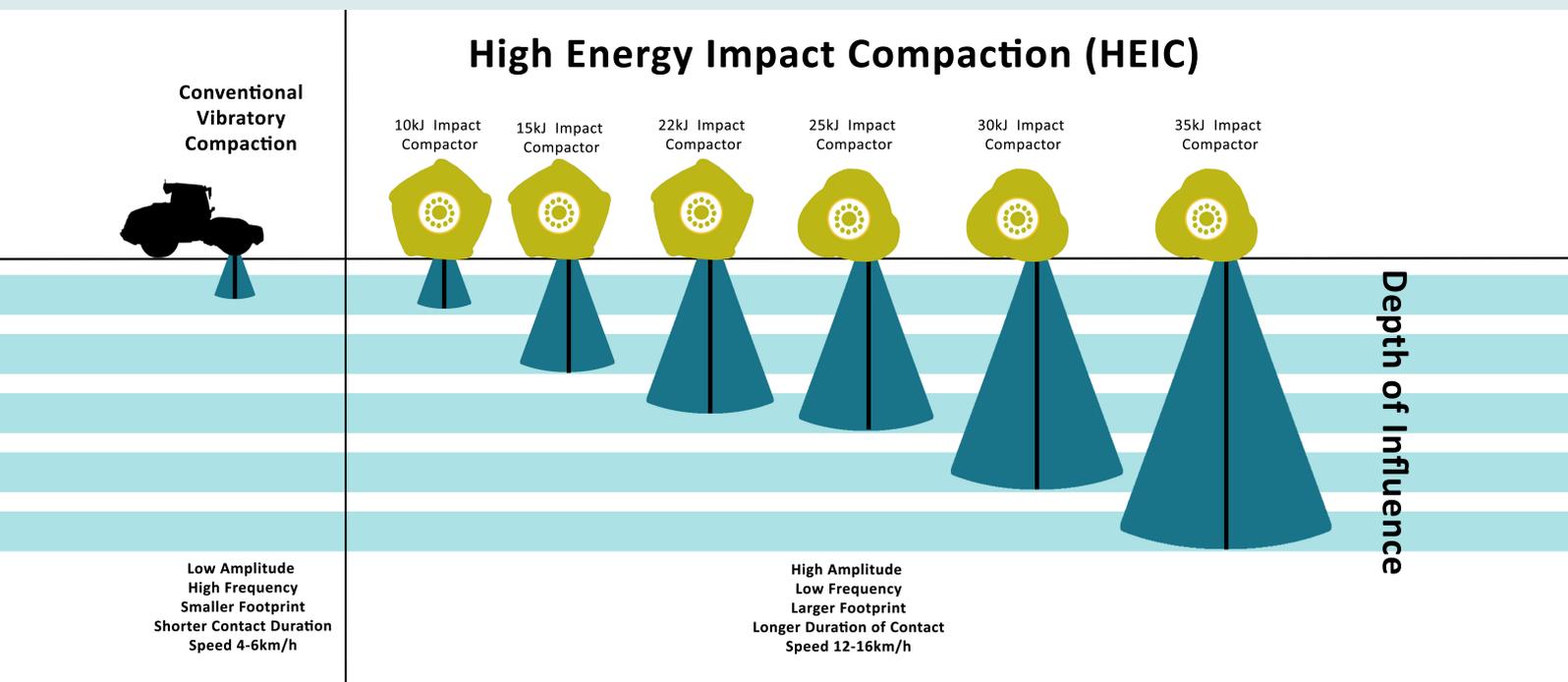
The high dynamic loads enable deep compaction of in situ fills and weak natural soils resulting in significantly improved engineering soil properties.

The impact compaction depth achieved for a given soil profile is dependent principally on the magnitude of the soil stress induced by the impact drums. The induced soil stress is a function of the Impact Compactor Energy levels, which is related directly to the mass of the impact drum module weight, lift height and moment of inertia.

With Dynamic Compaction Solutions' twin impact drum configuration the stress bulbs from each drum interact to create a wider and deeper zone of influence that with the High Compactor Energy enables compaction to greater depths.

Un-engineered fills are typically placed in an uncontrolled manner. Despite impact compaction's simplicity in compacting in-situ deep fills it requires careful control and monitoring of the compaction works for the reclassification of in-situ fill sub-grades.





## Why engineered impact compaction?

- Reduced Risk
- Realistic Design Soil Parameters
- Total Quality Control

Engineered impact compaction involves the application of impact compaction in an “engineered” manner with extensive GPS and computer-based monitoring and control. This allows the identification of localized areas with higher settlement compression and/or deleterious material within structural stress zones.

Impact compaction applied in an “engineered” manner using extensive settlement and soil response monitoring provides the certifying Geotechnical Engineer with a much higher level of confidence and allows the use of slab on ground construction and upper-level footings with realistic design parameters.



## Dynamic Compaction Solutions & High Energy Impact Compaction: Excellence Through Innovation with Intelligent Compaction Monitoring.



- **Real-Time Analysis:**  
Immediate insights for operators and staff.
- **Quality Assured:**  
Enhance project quality with comprehensive reporting.
- **Pinpoint Soft Spots:**  
Detect issues instantly for timely resolution

Intelligent Compaction is no longer a future prospect; it's a current reality. Dynamic Compaction Solutions presents the most innovative way to ensure excellence in your compaction projects. Völkel intelligent compaction and navigation equipment measures, monitors, documents and controls compaction and compaction process to elevate compaction efficiency, quality, and control.

With real-time Intelligent Compaction Monitoring (ICM), immediate feedback on compaction performance is available, aiding in quality control in High Energy Impact Compaction (HEIC), giving your project the precision it deserves. Along with relative stiffness and settlement plots, valuable insights into the compaction process can be accessed, allowing for accurate assessment and verification of compaction quality.

Utilizing the latest in technology for enhanced quality control, relative plots to site drawing areas facilitate verification in HEIC for construction, footings, roads, and other structures. At Dynamic Compaction Solutions, we strictly follow quality assurance and control measures to ensure adherence to standards and specifications.

By achieving 100% real-time coverage, continuous monitoring, and immediate corrective actions are provided, reinforcing quality control. Further, our cloud-based system ensures seamless data management and accessibility from anywhere.



# The intelligent choice for compaction

- **Real-Time Analysis:** Immediate insights for operators and staff.
- **Quality Assured:** Enhance project quality with comprehensive reporting.
- **Pinpoint Soft Spots:** Detect issues instantly for timely resolution.

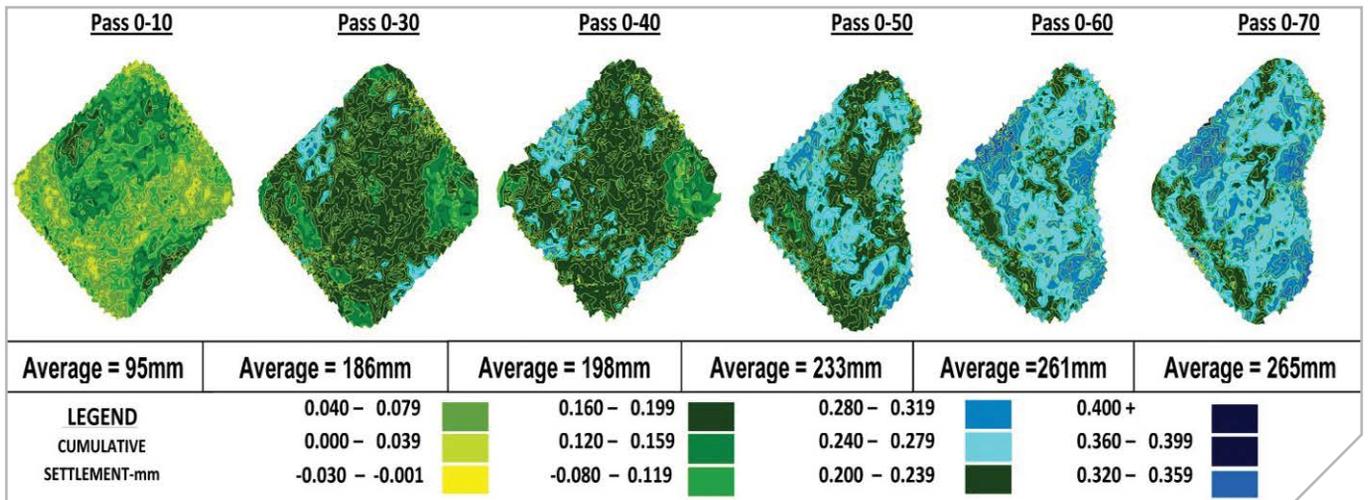
Why settle for less? The Völkel system, designed for High Energy Impact Compaction (HEIC), increases efficiency and productivity by an astounding 30%. As a cost-effective alternative to outdated soil testing, it provides complete coverage rather than mere spot testing.

Real-time analysis and reporting grant live insights for both operators and office staff, enhancing project quality through robust reporting functionality. Problem areas can be identified instantly, allowing timely inspection and issue resolution.

With Völkel, over-compaction is a thing of the past. Precision is key. Compatibility and interchangeability with most design programs, including CAD, and the ability to retrofit with most compaction equipment make Völkel a versatile choice.

Achieve 1/8 of an Inch location accuracy using Intelligent Compaction Monitoring for the relative stiffness and settlement reporting. Offering proof of compaction helps reduce liability insurance costs. The system even caters to multi-operator coordination, where operators can seamlessly know each other's progress during changeovers, and all information on gain and compaction value is transparently available.

Intelligent Compaction System is a comprehensive solution to all your compaction needs. From saving time to enhancing quality, it's designed to take your projects to the next level.



# Uses and applications

- Residential Subdivisions
- Civil and Mining Infrastructure
- Industrial & Commercial
- Container Terminals
- Airports



**Un-Engineered Fills:** The use of Intelligent compaction monitoring with the impact compaction of un-engineered fills provides reliable means for the engineering of un-engineered fills for the use of upper-level footings and slab-on-ground construction whilst lessening the need for the removal or partial removal and replacement of un-engineered fill materials.



**Saturated Weak Compressible Soils:** Impact compaction, with the use of Intelligent compaction monitoring, can be applied in a controlled manner to consolidate saturated weak compressible soil stratum of limited thickness to depths of approximately 5 meters.



**Landfills:** Old age landfills which are often used for recreational purposes can be treated with impact compaction to reduce creep settlement and maintenance costs. If adverse soil conditions are detected that could bring risk to people or the environment, HEIC allows compaction without the need to unearth or disturb what's underneath.

**Deep in-situ compaction**

**Proof rolling**

**Accelerated consolidation**

**Thick lift compaction**

**Compaction of rock fill**

**Rehabilitation of quarries and mines**

**Coal discard compaction**

**Treatment of unsurfaced roads**

**Treatment of dry materials**

**Permeability reduction**

**Land reclamation**



**Deep Loose Natural and Dredged sands:** Deep impact compaction techniques developed by Dynamic Compaction Solutions can, with the use of Intelligent compaction monitoring, compact saturated and unsaturated very loose and loose sands to a dense and very dense state to 3-meter depth and to a medium density to 5-meter depth.

## Dynamic Compaction Solutions



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Dynamic Compaction Solutions  
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