



# CAPABILITY SHEET

## Cofra Dynamic Compaction

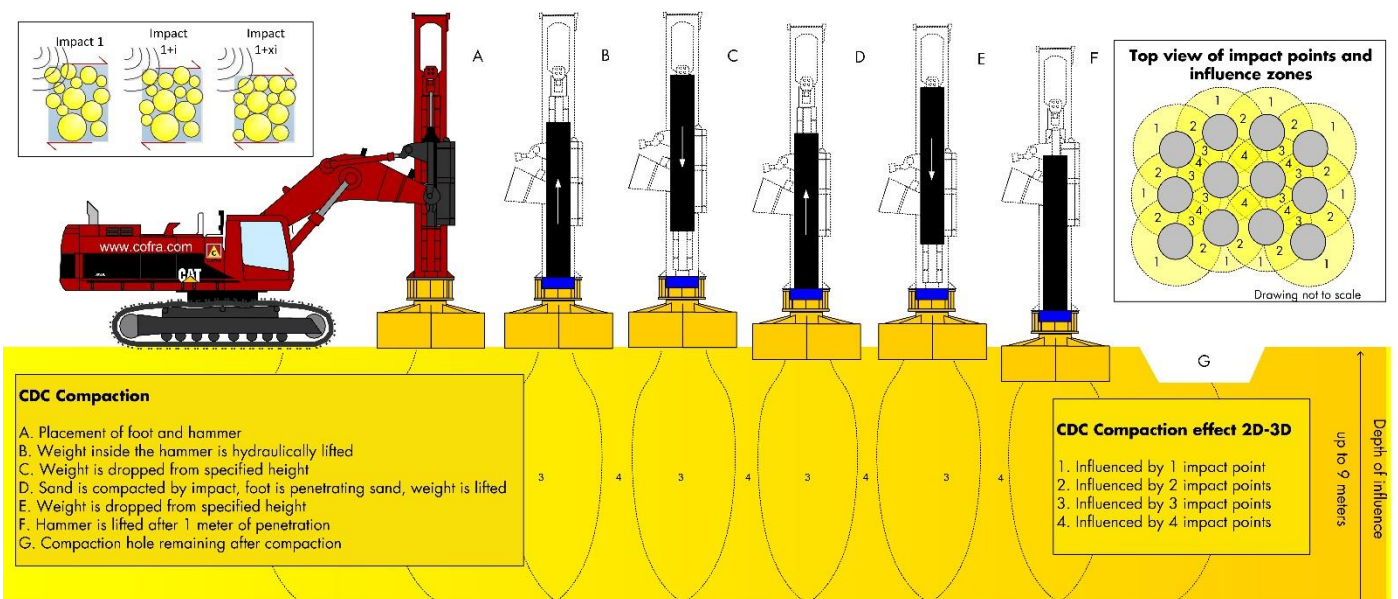


### General

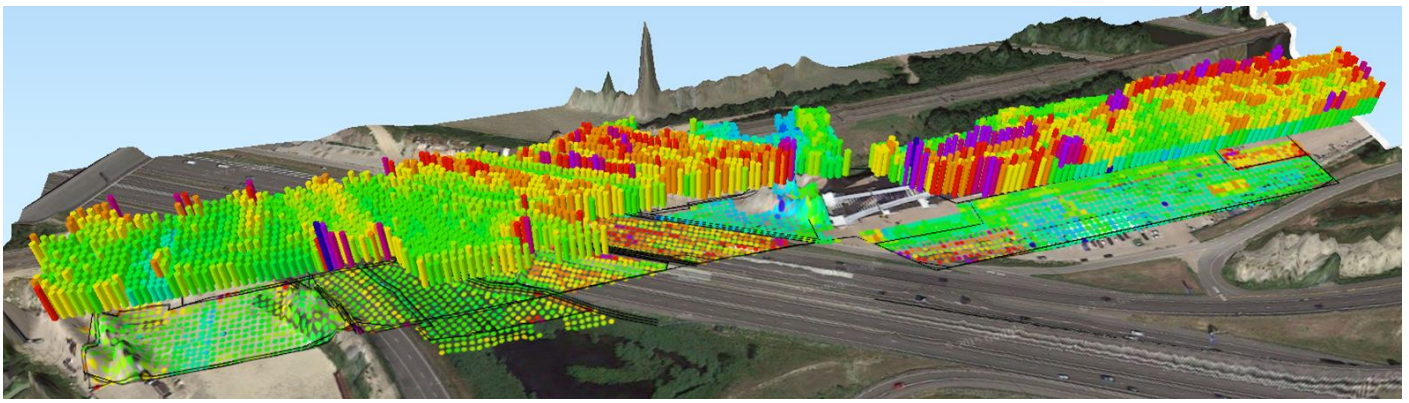
The CDC (Cofra Dynamic Compaction) method is a fast and reliable technique that densifies granular material with high accuracy and efficiency. Depending on the soil profile and applied energy a densification can be measured down to 9 meters below surface level.

The CDC method is executed by dropping a 9 to 16 ton weight at a rate of 40-80 times per minute onto a foot with a diameter varying from 1.5m to 2.6m that remains in contact with the soil. The impact points have a center to center distance determined on the basis of the field performance of a trial section.

The compaction of the underground is initiated by the vibrations generated from the impact of the weight onto the foot combined with the total weight of the machine. Furthermore, the dense grid spacing ensures homogeneous compaction throughout the area.







**Monitoring**

The compaction operation is controlled by the use of an advanced real time GPS guided monitoring system, measuring amongst others, the settlement and settlement rate of the foot.

The effort is adjusted to the local ground conditions creating a more homogeneous subsoil after compaction. Our Geotechnical engineers are at hand to review data and make site specific correlations between the monitoring data and requirements.

**Results**

The compaction results are, amongst others, dependent on the soil type, fines content and requirements. An assessment of the local soil by a compaction expert is therefore highly recommended.

The depth of influence can be limited by density differences in the subsoil. If the situation is ideal, effects can be measured up to 9 meters deep. Improvements of up to  $q_c=30\text{MPa}$  have often been achieved in the top 5 meters of the soil column.

Applying CDC will result in the following effects:

- Soil densification due to vibration and particles re-organization
- Friction angle increase
- Stiffness increase
- Bearing capacity increase
- Liquefaction mitigation
- Limitation of settlement when applying load

**Characteristics**

We see the following specific Cofra CDC characteristics:

- Cost efficient due to large production of 1,500 to 5,000m<sup>2</sup>/12h shift
- Depth of influence up to 9m depending on the soil conditions.
- Flexibility to adjust grid spacings, foot diameter and drop height to cope with changes in local ground conditions
- 4 times more energy efficient when compared to Dynamic Compaction theory
- Save and sound operational process when compared to Dynamic Compaction
- Able to work near/below the ground water table
- Limited vibrations (20mm/s at a distance of 15m)

