



CAPABILITY SHEET

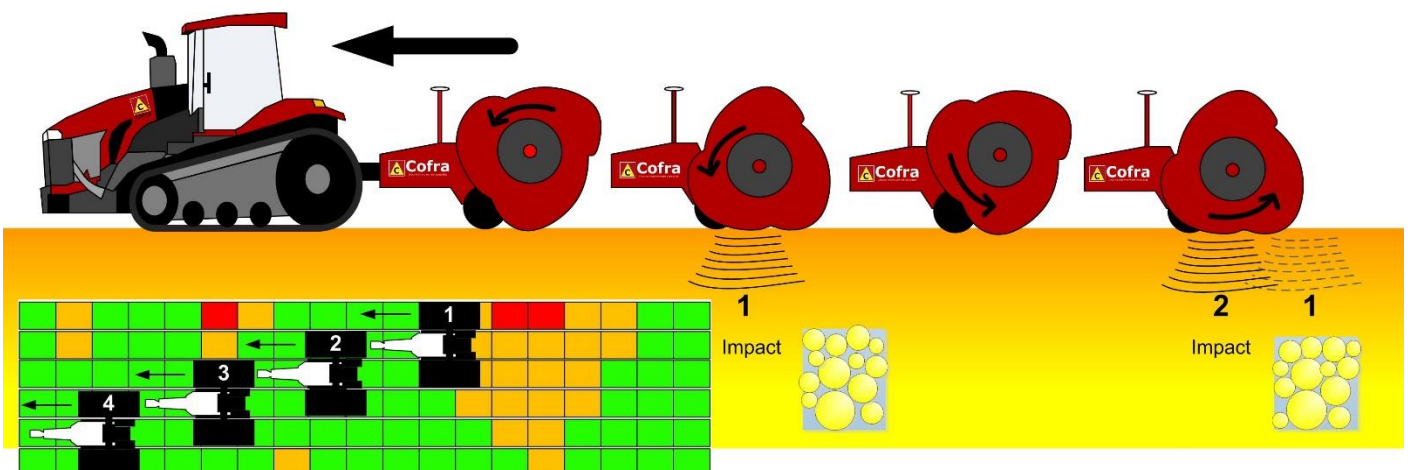
Cofra Roller Compaction

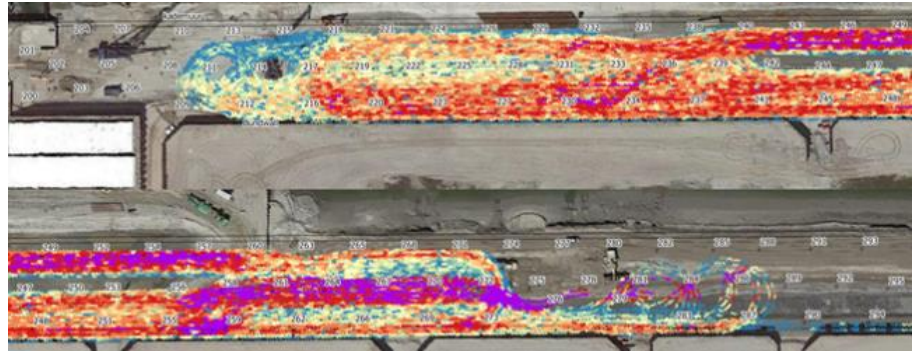
General

The Cofra Roller Compaction (CRC) method, also referred to as High Energy Impact Compaction (HEIC), is a technique that densifies loose granular materials up to a depth of 2 to 3 meters below the surface.

The compaction of the underground is initiated by vibrations, which lead to the rearrangement of the particles. These vibrations are generated from the impact of a weight onto the surface. The CRC method is in essence a light form of dynamic compaction in which densification is achieved by lifting and dropping a weight from a specified height. The shape of the non-circular drums of the CRC equipment cause in this case the lifting and dropping motion of the drum weight as the equipment travels over the site.

The roller is pulled at speeds between 10-15 km/h to generate the most optimal effect. The method has the highest surface production rate of all compaction methods known today, with a coverage in a single pass over 100.000m² a day.





Monitoring

The CRC technique compacts the underground fast, homogeneously and with high accuracy due to the use of a GPS guided monitoring system. The main parameter of interest is the deceleration of the impact, which is related to the compaction level of the subsoil. Overviews of the deceleration, as schematically indicated in the image above, create insight into the areas that require further attention.

The geotechnical engineers of Cofra are at hand to review data and make the site-specific correlations between the monitoring data and the hand over criteria. They will also perform the final testing if required.

Results

The CRC results and required effort are related to the soil conditions and requirements. Applying CRC 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 CRC related characteristics:

- Increase the thickness of layers from 0.30m for conventional rollers to more than 2m with CRC.
- Highest production rate of all known compaction methods in terms of m²/shift
- Easy to combine with our other compaction methods CDC and CVC
- Advanced GPS monitoring of production data
- Multiple units available to accommodate for large projects
- Internal geotechnical department with experienced engineers

