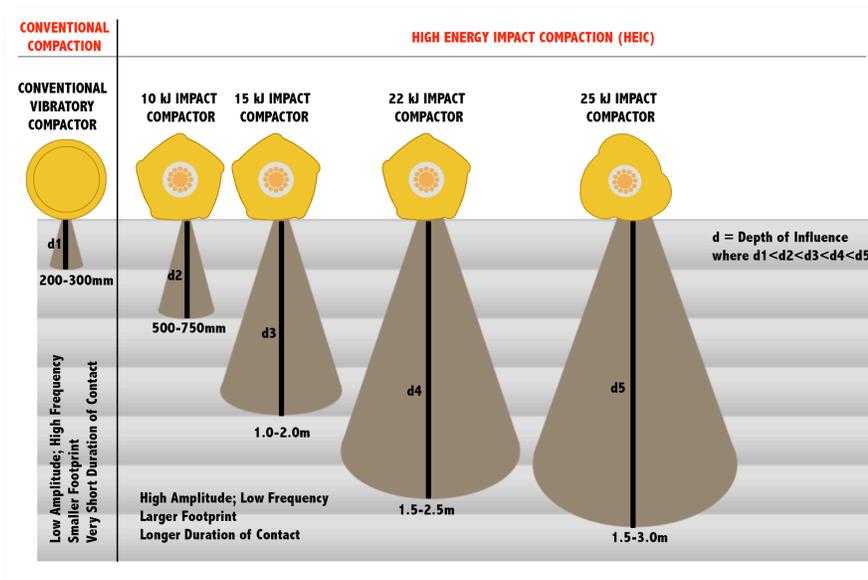


BENEFITS OF THICKER LIFT COMPACTION WITH HIGH ENERGY IMPACT COMPACTION

Thicker Lift compaction is possible with a High Energy Impact Compactor because of the increased depth of influence, made possible due to the energy rating, the increased contact area and time and the kneading type of effect the roller has on the soil.



High Energy Impact Compaction and Thicker Lifts have the following benefits.

1. INCREASED STRENGTH

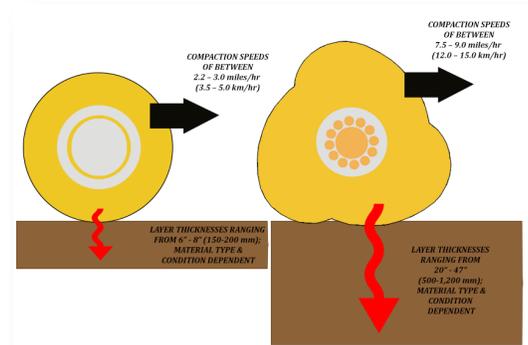
The higher energy allows for an increase in the load parted into the soil resulting in a much higher strength.

2. IMPROVED STRENGTH PROFILE

Besides the increase in strength, the strength profile over the ticker lift is more uniform across the layer thickness when compared to several compacted thinner layers.

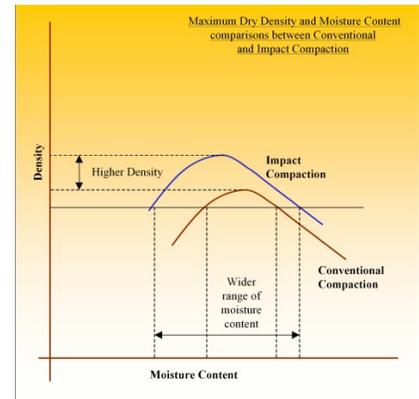
3. PRODUCTION IMPROVEMENT

Thicker lifts allow for less handling on site which would result in an increase in production, further supported by the fact that an impact compactor compact at a speed of around 12 km/hr, as compared to 3-5 km/hr of a standard conventional roller. Increasing the lift thicknesses, coupled to the higher speeds, would allow up to as much as 10 times more volume to be compacted.



4. DECREASED MATERIAL CONDITIONING & DECREASED WATER REQUIREMENTS

The higher energy allows for the achievement of a higher maximum dry density at lower moisture contents. This results in less water requirements during the compaction process and potentially the elimination of soil conditioning on site. The thicker lifts further increase this benefit.



5. LESS GRADING, CRUSHING AND SCREENING

The thicker lifts allow for the material placed to contain larger particle sizes which reduces the requirement for grading the material to strict particle size control. This is particularly beneficial in rockfill compaction where the maximum particle size would be approximately $2/3^{\text{rd}}$ the lift height, thus allowing for the inclusion of larger particle sizes when compacting increased lift sizes.

6. SEALING

Although more beneficial to compacting very cohesive fines, such as a lean dry clay of low to medium plasticity, the impact compactor will seal the top of a thick layer after the first few passes, thus allowing for some of the compaction work to be conducted in wetter seasons as the "sealing" of the layer would prevent too much moisture from penetrating into the layer.