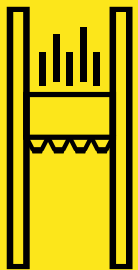


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# DYNAMIC COMPACTION

Dynamic compaction (DC) is an efficient and cost-effective soil improvement technique that uses high-energy tamping to densify weak predominantly granular soils. The process is used to increase bearing capacity settlement performance, stiffness, shear strength, and density characteristics in a wide variety of ground conditions from loose granular materials to mixed-made ground.





## DESCRIPTION

Dynamic compaction is a ground improvement technique that densifies soils and fill materials by using a drop weight tool of between 5 and 12 tonnes, from a controlled height of up to 12m. The process involves multiple drops of the treatment weight at predetermined locations, usually on a square or triangular grid pattern. The process is then repeated on a similar, but offset grid which ensures that improvement overlaps and provides full coverage of the site. Typically between 3 to 5 passes are required and the final pass is usually carried out on a much tighter grid and uses a special multi-tamp tool to ensure appropriate near surface compaction.

Shaped weights are used during the main compaction passes which provide optimised energy transfer and displacement of the soils.

The impact of the free fall weight onto the treatment surface induces shock waves which causes the collapse of inter particle voids in cohesionless soils, increasing insitu bulk density. The total number of drops and the treatment grid is designed on a site by site basis and is dependent on the existing ground conditions and the required performance specification.

## APPLICATIONS



Residential sites



Commercial sites



Infrastructure

## ADVANTAGES



Limited material import



Efficient coverage of treatment area



Increased bearing capacity



Reduced total and differential settlements

## INSTALLATION

Dynamic compaction uses an NRG rig that must be moved to the agreed starting position. The weight of the rig must be centralised. The stabilising feet are deployed, and the mast/leaders are checked to ensure verticality.

Once the area is clear, the lift cycle can begin ensuring that the cycle is carried out to the correct height and number of drops as per design. The weight should be dropped until the top plate is no lower than the Working Platform Level.

We also offer a variation of dynamic compaction, known as dynamic replacement. This is where selected materials are driven in to displace the insitu substance to create columns of compacted material.

Once the process is complete, the weight must be parked in the leaders and stabilising legs retracted. Only then can the rig be moved to the next location.

## TECHNIQUE CAPABILITIES

SPECIFICATION	FROM	TO
Drop weights	5t	12t
Drop heights	1m	12m
Practical treatment depth	0m	10m