

# COMPACTING A BASE FOR PAVERS

The basics of how a plate compactor works is pretty easy to understand: the plate vibrates below the machine causing smaller particles to settle in the voids of the material underneath so forming a compact base.

Even if the operation sounds simple enough, there are techniques that the beginner needs to understand to obtain the best results when building a patio, driveway or walkway for example. Then they can move onto [getting even more out of their machine](#).

Pavers come in all sorts of flavours; concrete paving slabs, stone pavers, brindle blocks, concrete blocks to name a few, but the processes described here are the same for all – as well as numerous other applications. Learning, and fine tuning, this simple 4 step process will aid you in many future projects.

## STEP 1 – EXCAVATING / DIGGING OUT

Make sure you remove enough ground for the depth of the base you require taking care to account for the depth of the pavers you are using. Use your judgement to decide if the newly excavated ground can support the aggregate / stone you will later apply without the need to first compact the soil surface.

Ask advice from an experienced colleague if you are unsure, but we recommend that 2 to 4 passes with the compactor will give reliable support for your base materials; don't do more than this or over compaction may result which will cause problems later. Try

and wait for the ground to dry if it is a little wet, but if this isn't possible add a small amount of large gravel to help bind the wet surface and continue compacting.

## STEP 2 – ADD THE SUB BASE MATERIAL



When you are satisfied you have a fairly solid ground, you can start adding the sub base material. The composition of this material may vary depending on your preference and or geological location; limestone (or sandstone) is commonly used, but in any case

it is recommended that there is a good mix of larger and fine particles for compaction to be successful.

Place the sub base in 4" to 8" lifts if possible, but be aware the compaction force of the machine may require you to adjust this. As a good rule of thumb, adjust your lift height in the ratio of 1" of material for every 1000lbs compaction force in order to [get the most out of your production rate](#).

For example, a plate compactor with 3000lbs of compaction force should have a lift of no more than 3". If 4" is required in this case it would be better to achieve this with two 2" lifts.

The thickness of these layers is important – too thick and machine may not compact what is below it; too thin for the compaction force of the machine may result in over compaction where the density of the material decreases.

Compact the sub base after each lift; check the moisture level of the sub base before you begin to compact – a handful of material should hold together when squeezed. If not moist enough, use the water in the onboard water tank (if available) or a garden hose to dampen it; but don't saturate it. If okay, 3 to 4 passes over it should provide best results.

Repeat this process for as many layers is required to achieve the depth of base required to support your pavers.

## **STEP 3 – LAY A SAND BEDDING**

Once your sub-base material has been properly placed, adding the sand that will sit underneath the pavers is the next step.

This is what the pavers will be sitting on directly, so it's important to prepare the surface thoroughly. Typically, a 1" layer of sand is applied all over the work area forming the connection between pavers and sub base. It is essential in forming a softer layer for the pavers to settle in to – otherwise they may crack or break in the next stage of the process. Avoid high-spots or valleys, reworking them if need be in order to get a flat surface.

## **STEP 4 – PLACE PAVERS IN POSITION AND COMPACT**

Place your chosen paving stones or blocks in the desired position on top of the freshly prepared sand. When you are satisfied they are correct, run the compactor over them to bed them into the surface. This should be a minimum of 2 passes.

When running the machine on top of the pavers, we highly recommend you use of a urethane mat on your compactor to minimize damage to both your pavers and the machine. This is essential when using synthetically manufactured pavers – common in North America – as opposed to the tougher granite stone available in Europe.

Finally finish off the process by running the compactor over the pavers whilst adding fine sand between the joints to finally settle the pavers and create the necessary density between them to keep them stable.

## **CONCLUSION**

The basic principle of compacting any material is the same: put the material down in layers and compact between each one.

Of course we don't suggest this is the only way to lay and compact materials; as your experience builds in machine, environment and types of stone, aggregate and hard core available, your increased knowledge will guide you in to how to tweak the process to get best results.