

Compaction

Compaction is the reduction of soil pore space. Soils are generally 50% pore space and 50% solid. The pore space is needed to conduct water and oxygen to your turf and many thousands of other plants, microbes and animals that live in the soil. When the pore space is reduced by even 10%, your turf will suffer. The turf will grow slowly and it will be short. Eventually it will become thin, thus allowing weeds, algae or moss to grow. The compaction generally occurs within a few millimetres under the turf. However, if heavy equipment is used the compaction can reach a depth of 300mm or more. For example, the repeated parking of cars on turf will compact the soil. Turf soils that are compressed when wet, compact deeper and faster than dry soils. Clay soils compact more than sandy soils. Remember, healthy turf will cushion the soil from occasional activities such as human/animal traffic and mowing the lawn, but any repeated activity will eventually cause compaction.



Cross section of a lawn, showing black layer of compacted soil/ rootzone

How to relieve compaction

Compaction can be reversed, and if it is shallow it is not that difficult to do. Simply put, you must create more pore space under the turf. This process is called aeration. To do this, holes are made in the turf. The holes for shallow compaction need only be 75 to 100mm deep, but the holes for deep compaction might need to be greater than 300mm deep. To relieve compaction in small areas of turf, you can use hand operated spikers. These are tools that, when pushed into the ground, will create holes. There are machines that can do this as well, but these are better left to a professional to operate, who is fully trained.

How much should you aerate your turf?

It is unlikely that you will aerate your turf too much. However, it is better to repeat the process several times a year if your soil is compacted, rather than do a lot all at once. Repeat that several times a year and your turf should improve. As the turf grows, it too will reduce soil compaction as its roots push soil particles apart.

When should you aerate your turf?

It is best to aerate your turf when it is growing. This allows the turf to grow into the aeration holes where there is plenty of water, oxygen and space. Caution should be taken if aerating when it is hot and dry. Open holes in your turf when it is hot and dry could cause the turf to suffer from drought and heat stress. To avoid this, water the turf after you aerate.