

GENERAL GUIDELINES FOR WATERING OF TREES FOLLOWING PLANTING / TRANSPLANTING

When newly relocated large trees have been planted it's as if they were pot plants that had just lost their pots: watering them only at the top would mean water would simply drain away.

Successful watering is only achieved when the root ball (where all the tree roots occur) is being saturated with water. But achieving this is easier said than done. It is also difficult to measure and check effectiveness with the root ball being underground. The main problem in most cases is due to the surrounding backfill soil being less dense and more permeable than the root ball.

In the case of the tree being planted in a heavy clay soil, a serious danger of over watering and the resultant fatal drowning of the tree can occur. In this case the walls of the planting hole created in the clay form an almost water-tight container without drainage holes. This planting situation makes it very tricky to achieve successful watering whilst avoiding over-watering. In these situations, it is almost essential to have a water drainage outlet installed as low down in the planting hole as possible.

How to achieve effective watering of the root ball post planting:

- Slow low volume watering over long periods of time
- Apply water as close to the stem (inner one third of root ball surface) as possible. Apply on 2 to 3 sides of the stem, simultaneously or by moving the water supply from the one to the next side around the tree.

This procedure will ensure that the water first gravitates downwards, and once saturated, water will start to radiate laterally through the root ball to areas of lower water saturation, until excess water finally drains away at a faster rate in the surrounding back fill soil.

If you have no other option than to water in a shorter than desired period of time, a dam wall must be constructed on top of the outer border of the root ball (not beyond the root ball perimeter).

Trees SA strongly recommend the installation of a computerized drip irrigation system since we find this form of watering the most effective, with trees establishing faster, showing optimal growth and development.

Volume of water required:

- Ideally 5% to 8 % of the tree's root ball volume should be applied. For example, in the case of 1 000-liter bag / root ball) that will be 50 to 80 litre. **Beware of too much water in heavy clay soils.**
- In the case of the surrounding soil having very good drainage (e.g. sand and alluvial rock substrates) you can safely water up to 10% thereby reducing the probability of under watering without risking the drowning of the tree.

Bag size (Litre)	Litre Water required per application
250	12.5 - 20 litre
500	25 - 40 litre
1 000	50 - 80 litre
2 000	100 - 160 litre
3 000	150 - 240 litre
4 500	225 - 360 litre

Frequency of watering:

- During periods of high water demand (summer), the tree depletes the relatively small volumes of water available in the root ball or "container " volume in a short period of time (within 3 to 5 days). It is for this reason that the frequency of watering is just as critical to tree survival during the early stages following planting.
- Frequency and volume depends on one or more of the following: season, species (water requirements and whether deciduous or evergreen), soil type, foliage density, and time elapsed since planting (volume of new roots established).
- **General guide lines for frequency of watering:**

TREE and SOIL types	SEASON			
	<i>September and October</i>	<i>November to end March</i>	<i>April and May</i>	<i>June to end August</i>
Evergreen trees in surrounding soil with poor to normal drainage	1 times / week	2 times / week	1 times / week	1 times / week, if no rain*
Evergreen trees in surrounding soil with excellent drainage (reduced water retention)	2 times / week	3 times / week	2 times / week	1 times / week if no rain*
Deciduous trees in surrounding soil with poor to normal drainage	1 times / week	2 times / week	1 times / week	1 time / month if no rain*
Deciduous trees in surrounding soil with excellent drainage (reduced water retention)	2 times / week	3 times / week	2 times / week	1 time / month if no rain*

* Definition of effective rain: Should penetrate at least 30 cm deep. Less than that should, in terms of the watering table above, be regarded as NO rain.

Year two and three following planting:

For optimal tree recovery, growth rate and health continue to water as recommended for the first year following planting. Increase watering volume to 2 times the volume prescribed for year one. The trees will, in terms of tree survival, become less sensitive to the skipping of watering sessions but are still very dependent on regular artificial watering during the summer months in the winter rainfall areas.

Year four and five following planting:

For optimal tree growth rate and health continue to water at half the frequency (every second time) recommended for the first year following planting. Increase watering volume to 2 to 3 times the volume prescribed for year one. During the hot and windy periods in the summer, trees do still require deep watering once every 3 weeks and more regularly in sandy soils.

More than five years after planting:

Deep water all established trees under the drip line of the tree canopy once a month during hot and dry summer months.