

### Root Barriers

Root barriers are installed to prevent tree root damage to built structures. Tree root radial growth and tree root absorption of soil water can damage building foundations and paved structures.

There are three different types of root barriers. They can be physical, chemical and physico-chemical in nature and their design and construction varies according to the nature of damage to be controlled.

### Damages caused by tree roots

There are three common types of damage caused by tree roots. These are:

1. Tree roots absorb water from expansive clay and the drying clay shrinks resulting in vertical subsidence leading to collapsing and cracking of built structures.
2. The radial growth pressure exerted by growing roots can crush drainage and sewer pipes, lift slabs of concrete and crack pavements.
3. When a drainage or sewer pipe cracks and begins to leak water, tree roots may enter the cracked pipes in the search for moisture blocking the flow.

### The different types of root barriers

Impervious barriers deflect or divert root growth rather than to stop root growth. They also stop soil water movement across the barrier. This type of barrier is used for prevention of root entry into an area of building foundations.

Permeable barriers allow water movement across the barrier, and let the tree roots to attempt to grow through the minute pores of the barrier, hence constricting their radial growth pressure. This type of barrier is used for the prevention of damage to light-weight paved surfaces by expanding tree roots.

1. Physical barriers: are used to deflect the lateral growth of shallow tree roots or to constrict the growth of penetrating roots.
2. Chemical barriers: use a root repellent or root growth inhibitor to limit root growth to avoid root damage. The risk of using such chemicals is that few people have knowledge about their toxicity to plant and human health.
3. Physico-chemical barriers: are a combination of a physical structure and the application of a root inhibitor chemical to achieve the prevention of root growth and root damage.

### Choosing a root barrier

There are five factors that must be considered when choosing a root barrier for a particular situation. These are:

- Cost
- Effectiveness
- Life of barrier
- Ease of installation
- Environmental friendliness

Information Reference: Design of structures and barriers consistent with tree root behaviour.

### Disclaimers

This information was believed to be correct at the date of its publication.

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