Chembase Treatment System (CTS)

Municipal waste management: rubbish tip sub-base layers

Product: Chembase® C-SSSB1 | Research and development

“It costs you nothing to find out how much you can save.”

How a rubbish tip works

1

Waste arrives

Waste and recyclables are taken to the tip, usually for a small fee.

2

The cell is filled

Rubbish is placed and compacted in the hole or trench.

3

The cell is capped

A full cell is covered with clay and plastic so liquids cannot seep into soil or water.

4

The waste breaks down

The rubbish slowly decomposes under the cap.

Why stable ground matters at a tip

Ground risks

Sinking ground
If rubbish is only covered and compacted, the ground sinks later.

Danger underfoot
People walking on full trenches can fall through where rubbish is loose.

Topping up
Areas that cannot be compacted need covering soil added as they settle.

Health and environment

Air pollution
Overflowing garbage pollutes the air with carbon dioxide, nitrous oxide and methane.

Disease
Unsegregated waste gives rise to infections and reduces recycling.

Hazardous materials
Batteries, motor oil, paints, thinners and fluorescent bulbs should not go to landfill.

Causes of soil erosion

Rain and flooding

High-intensity rainstorms are the main cause.

Agriculture

Farming practices are a major cause.

Grazing

Stock strip the ground cover.

Logging and mining

Vegetation is cleared.

Construction

Soil is disturbed and exposed.

Rivers and streams

Flowing water cuts into banks.

Heavy winds

Wind lifts loose topsoil.

Loss of arable land

Degraded land erodes further.

One product, supplied in two parts

PART A

Polymer-Stabiliser

+

PART B

Activator

Chembase®
C-SSSB1

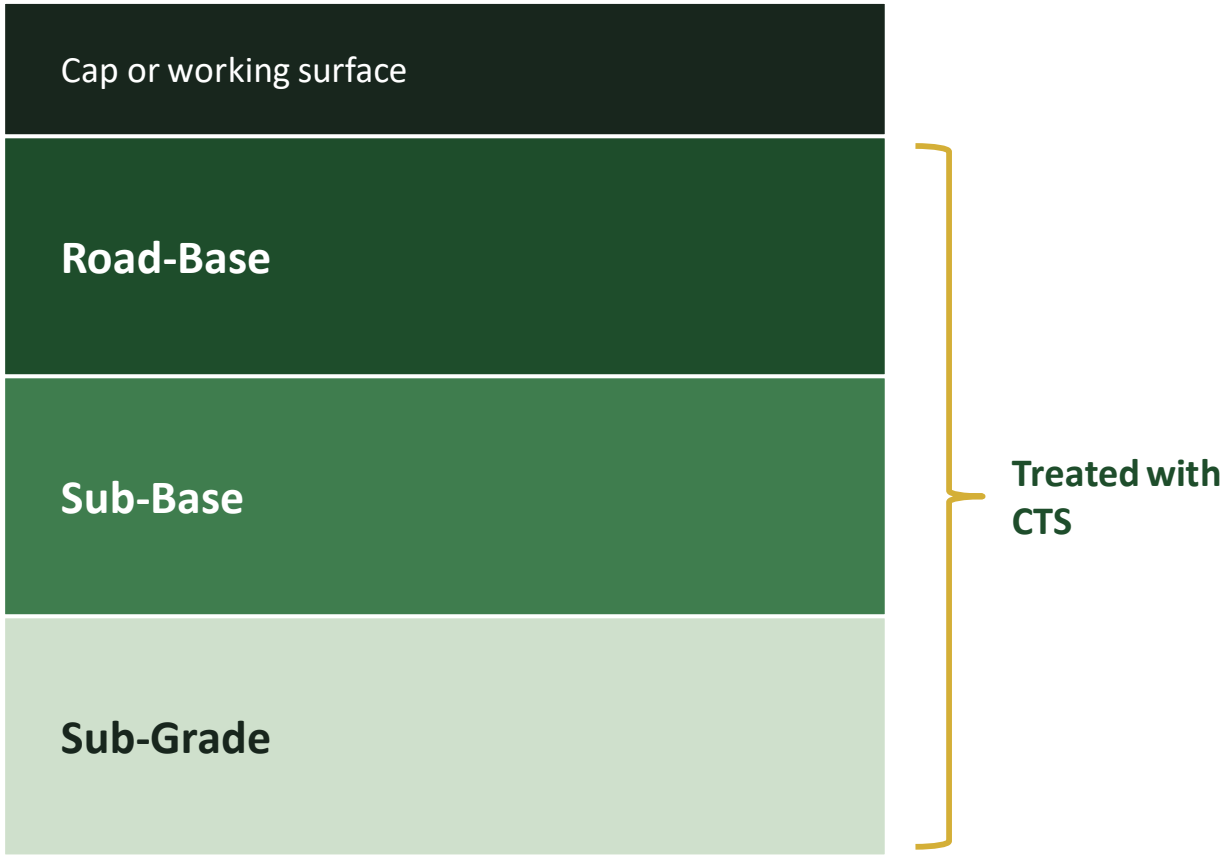
Five characteristics
combined in one product

A simplified range

- Five different chemistry characteristics are now combined into a single Chembase product.
- The application and treatment methods stay the same.
- The same characteristics, benefits and advantages are retained.

Naming: CTS stands for Chembase Treatment System. Chembase is also known as Chembase International and Chembase International Group.

Where CTS works: the base layers



Indicative cross-section

CTS modifies the properties of the existing soil to improve performance and durability.

- **Greater strength**
- **Higher load-bearing capacity**
- **Resistance to moisture-related issues**

Chembase and conventional road construction work together.

From stabilised layers to lower costs

1

Stabilised base layers

CTS stabilises the road-base, sub-base and sub-grade.

2

Less water, fewer potholes

Water leakage and potholes are reduced in the treated area.

3

Less maintenance

The treated area needs less ongoing repair.

4

Lower cost, longer life

Reduced costs and greater longevity for the treated area.

Performance benefits of treated layers

CBR increase

Raises the California Bearing Ratio (CBR), a standard measure of soil strength.

Water resistance

Treated layers resist water, limiting moisture-related damage.

Liquefaction resistant

Treated soil resists liquefaction, the loss of strength in saturated ground.

Freezing-condition tolerance

Tolerates freezing conditions.

Oil and petroleum barrier

Prevents oil and petroleum penetrating the treated soil.

Longevity

A long service life for the treated area.

Practical and environmental benefits

On site

Workable in any weather
Application is not held up by conditions.

Stable once diluted
The diluted product will not oxidise.

Re-compactable
Treated soil can be re-compacted (20 years).

Savings
Less maintenance and reduced costs.

Safety and sustainability

Safe to use
Product-safe and environmentally safe.

Waste plastic and glass
Shredded plastic or stained glass added to treated soil increases CBR.

Ash waste
Ash added to treated soil increases CBR.

Saltwater
Saltwater can replace fresh water, and increases CBR.

Brick pavements
Can be used in brick pavement manufacturing.

Preventing and reducing soil erosion

On the site

Planting
Trees, plants and cover crops reduce run-off and protect against wind and water.

Mulch matting
Reduces erosion on slopes.

Fibre logs
A series of fibre logs stops water and soil washing away.

Protect ground cover
Prevent excessive grazing and deforestation.

Wider measures

Afforestation
Planting new trees and plants.

Crop rotation and terracing
Farming methods that hold soil in place.

Dams and embankments
Structures that control the flow of water.

Shelterbelts
Rows of trees that break the wind.

CTS for rubbish tips

Developed for rubbish tips

Chembase has developed and enhanced its chemical stabilisation product for soils at all types of rubbish tips.

Water resistance

Treated base layers resist water leaking and develop fewer potholes.

Less maintenance, lower cost

Reduced maintenance and cost, and a longer life for the treated area.

It costs you nothing to find out how much you can save

Talk to Chembase about treating your road-base, sub-base and sub-grade layers.

INDEPENDENT UNIVERSITY REPORTS

Reports from The University of Sydney and UNSW (University of New South Wales) are available at www.chembase.com.au

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