



Erosionex Trafficable *Dust and Soil Erosion Suppressant*

*High Performance, Do-It-yourself
All-in one solution & Easy to use*

You Choose

*Long Term - Short Term - Roads - Verges - Building and
Development Sites - Stockpiles - Embankments -
Race tracks - Soil and Road Base Compaction.*

Erosionex is a benign new age and extremely diverse restructured polymer based product, which forms a membrane in the soil and around the soil particle making each particle heavier than gravity, at the same time creating an amelioration effect by acting as a substitute for the soils natural oils, allowing an ongoing absorption of moisture from the night air, then locking the moisture in to prevent evaporation - achieving soil stability.

Give your topsoil consolidation and erosion control where it can reduce aggregate surface material replacement costs by up to 80%.

Prevents dust mites and disease in animal pens and race tracks giving a firm/fast dustless surface to race on.

2.

Features and benefits of Erosionex:

- *Can be used with water or without and does not require any other additives.*
- *Can be applied with any equipment used to apply water alone such as water trucks and can also be used in reticulation systems and gravity feed sprays.*
- *In granulated form it can be applied with a hand spreader.*
- *Can be used in commercial Industrial and Mining sites.*
- *Is totally environmentally benign, Non-toxic and therefore is safe to use.*
- *Does not abrade pumps, Lubricates reticulation*
- *Enables dust suppression/soil compaction related water saving of up to 80%.*
- *Reduces project management costs related to soil compaction costs from between 50 - 65%*
- *Application service available Perth - Metro, Murray and Peel Area.*
- *Erosionex promotes water penetration / retention for seed germination and vegetation establishment (grass cover) whilst reducing evaporation.*

Erosionex has been used, assessed and approved by the following organisations:

- *Health Department of Western Australia*
- *Waters and Rivers Western Australia.*
- *Water Corporation Western Australia.*
- *Environmental Protection Authority of Western Australia.*
- *National Registration Authority (A.C.T.)*
- *C.S.R. contamination and adhesion tests.*
- *Canning town Council.*
- *Serpentine and Harvey Dams.*
- *Shires and Councils in Western Australia*

3.

- *Authority Clearances have been issued in circumstances for use in pristine water environment sites*
- *Many commercial, Industrial and Mining sites in Western Australia.*

Erosionex Granule

Erosionex Granules - is a waterless soil stabilisation system used in broad acreage and reforestation to restrict soil movement and can be activated by natural rainfall or water bombers for quick stabilisation of erosion. It can be applied by Combine seeders, hand broadcasting or seeders and spreaders for small or large areas.

Erosionex Granules are applied at between 1grm to 10grm per sq meter and can be added to seed, or Granule fertilizer if required, for more accurate spreading in lower rates, weigh of the required amount, add sand and mix thoroughly and spread.

1kg of **Erosionex Granule** will treat 100m² to 1000m² as required.

Erosionex Granule is normally applied in the wet season or before rain as the rain or the Moisture from the cold air at night will activate the material, it will form a skin and promote natural germination, stabilize the area, prevents moisture evaporation, attracts and holds onto the warmth of the sun to create a perfect environment for germination..

This product is environmentally Benign & Exempted from Registration by the NRA.

Independent evaluation of **Erosionex Granule** application on three sites.

Introduction

Erosionex Granule is a waterless medium specifically designed for soil stabilisation, moisture retention and as a re-vegetation aid to degraded soils.

The Water Corporation used **Erosionex Granule** on three sites in the south west, the Serpentine Dam spillway, the Bunbury Waste Water Dune Rehabilitation program and the new Harvey Dam Rehabilitation and Re-vegetation Program. All sites were treated in July 2002.

4.

Serpentine Dam

Erosionex Granule was used on both sides of the spillway at Serpentine Dam. 5kg of native seed was mixed with 5kg of **Erosionex Granule** and applied to the soil surface. Both banks were steep, between 20° and 40° and subject to significant water erosion. The soil type consisted of laterite, loam and heavy clays.

The application of the **Erosionex Granule** seed mix was done by two people in two hours with minimal soil disturbance. The **Erosionex Granule** seed mix was hand spread at the rate of 10g/m².

Bunbury

Erosionex Granule was used by the Water Corporation (Western Australia) as an integral part of the Bunbury Waste Water Treatment Plant Outfall dune rehabilitation program.

The Water Corporation needed a product that would not only retain moisture near the sand surface but stabilise the dune long enough to allow germination of native seed in these extreme conditions. Previous spot testing of **Erosionex Granule** over an eight week period, demonstrated no soil movement under extreme conditions, **Erosionex Granule** was seen as the only product that could fulfil both conditions required.

An area of 1.5ha in size was identified as the most vulnerable to wind erosion. Due to the dynamic nature of these dunes, **Erosionex Granule** was applied at 20g/m², normally a rate of 10g/m² would suffice for most soil conditions. 300 kg of **Erosionex Granule** was mixed with 30kg of provenance native seed and applied to the surface of the dunes.

The application was done in combination with heavy brush material that was laid in 6 meter bands across the dune face. There were gaps of around 10 meters between the brush materials where the **Erosionex Granule** seed mix was applied.

In the area that **Erosionex Granule** was applied, the dunes varied in height from 10m AHD to 48m AHD. Due to difficulties with access to the dune area, the **Erosionex Granule** was spread by hand by five workers over a three hour period.

A site visit to the rehabilitation area was done 39 days after the initial application to determine if the **Erosionex Granule** was still stabilising the sand. In the areas that **Erosionex Granule** had adhered to the sand the sand had not moved and there was a significant amount of moisture underneath the uppermost surface. This compared with areas where **Erosionex Granule** had not adhered to the sand, where the strong winds had resulted in significant erosion

5.

and drying out of the sand. The sporadic way in which the **Erosionex Granule** is sitting on these dunes highlighted the importance of total uniform application followed immediately by activation with water. Also, application must be undertaken on a relatively still day.

Harvey

Erosionex Granule was also used at the new Harvey Dam on a quarry spoil area 2.25ha in size. The area consisted of rocks and B horizon clays and was subject to significant water erosion..

225kg of **Erosionex Granule** was hand spread at 10gm/m² over native seed and after the area had been planted with native seedlings. The **Erosionex Granule** was spread in two and a half hours by five people. The site was gently sloping, wet and muddy.

A week after the job was done I received positive feed back from Michelle Rhodes from the Water Corporation, that the **Erosionex Granule** appeared to be “holding up the water and that the water erosion had stopped”. .

Conclusion

Whilst it is too early to gauge the effectiveness of the **Erosionex Granule** and native seed mix to increases in germination rates, field trials with a **Erosionex Granule** clover seed mix showed germination of clover in two days with dicotyledonous leaves in four days after sowing on shallow sands over clay.

Erosionex Granule has been shown to be very effective at stabilising erosion prone soils. Applied in a dry form, **Erosionex Granule** is activated with a relatively small amount of moisture, either from dew, rainfall or applied as a light spray after the **Erosionex Granule** has been laid down. Once activated, **Erosionex Granule** provides a firm stable surface that has been shown to increase soil moisture and temperature thereby providing a favourable environment for the germination of seeds.

Erosionex

Liquid & Powder & Granule

Application and Technical view:

1. *Erosionex* Powder: Trafficable

1. Using **Erosionex** at a rate of 12,000 Sq/Metres to 1Kg of **Erosionex** Powder. That would be 1kg of **Erosionex** Powder into 12,000 litres of water, must be vigorously agitated.
*Initially: 2 passes at 1 litre or two litres per sq meter as required for short term stabilisation, 2-5 days on roads subject to traffic load, 3 to 10 days on stock piles.
*Repeat application for just one pass if a booster top up is required.

6.

Note: **If gravity fed**, add only 500gms to 12,000 litres, use the flow and pressure of incoming water to mix, VERY IMPORTANT.

4 passes, applied at two litres per sq/Metre on the road or service /access arrears and stock piles. This method will result in a higher water usage and shorter life.

- a) If you have an interchangeable of extremely wet, then dry climate, the 8,000 to 10,000/1 rate will possibly prove to be too brittle and shorten its life span.
- b) **Alterative method:** The very first application it is recommend you start with two treatments, one to two hours apart, this will give you the time factor of how long the treatment will last, depending on soil quality 1 to 7 days(when dust returns to axle hight a following treatment of one treatment of **Erosionex Powder** would be required as a top-up. IMPORTANT TIP; you need to advise of the characteristics of the soil you are treating, for example; does the water penetrate into the soil or not?, if not the very first treatment would be different such as;
The first pass, would be **Ultra-Wet Yellow breaker** at a rate of 1.5 to 3mls per sq/metre, (18-36ltrs into 12,000 litres water & (easily) mixed and applied at **only** 1 litre per sq/metre).
Then apply one treatment of **Erosionex** Powder as above being the second pass ECT.
- c) A noticeable difference in the surface texture will be seen, apart from the Dust control, this treatment is also used as a compaction aid that should give you a longer road life between grading because of the lesser possibility of potholes.
- d) Because of the life of the treatment, there is sometimes a water saving of More than 90%, again subject to soil condition.
- e) How **Erosionex powder** works; a polymer membrane ameliorates in and around the dust particle which becomes heavier than gravity
- f) Once the dust reappears to axel height, it is time for a further application.
- g) Dye can be added if required.

1 Kg plastic tub (In carton of 4)

(Also available are: 750 gms, 500 gms, 250gms & 125 gms in carton of 6)

Long term soil stabilisation and re-vegetation;

2. *Erosionex* Liquid: Trafficable.

All calculations used are based on a 12,000 Litre Water Truck, with open baffles and suitable high pressure pump agitation to allow circulation for mixing and applying *Erosionex* Liquid to general soil, Lime stone and Gravel on Road verges, Development sites and Stockpiles, applied at various application rates to stabilise soil over an optional requirement of 3 weeks, 6 Weeks, 12 Weeks or 26 Weeks.

Caution – Important Notice:

Erosionex Liquid Concentrate **cannot** be added to or divided in quantity, all mixes and batches are manufactured specifically to suit any tank size, however small quantities can be added to vast amounts of water, See grid below.

How to use and application procedure:

All quantities over the size of a four Litre mix are manufactured and housed in a larger size container to allow for shake/mixing the material prior to opening the seal lid.

Step one; Fill tank to 1/3^d capacity.

Step two; Pour in Dye mix. (If required & supplied by the purchaser)

*Step three; All **Erosionex** liquid being poured into the mixing tank, must enter into the tank by being poured directly into or onto the incoming water flow.*

Step four; Agitate with both the Motor/pump & the incoming water flow until the tank is full.

Ensure that a smaller back pressure/return hose back to the tank is located prior to the main hose line shut of valve, this will eliminate the possibility of the product being sheared and broken up, resulting in a short term on the ground performance.

Step five; 1. Application can be via a tank/batter fan providing there is a trafficable access, at the given litre M2 rate.

8.

2. Application via a (maximum size) 1.1/2" Hose, this size hose with the min 5.1/2 horse power pressure pump will able the operator to create a long range lob, like rain effect that will cover the small ridges in the soil caused by tyres, and eliminate having to spray from both angles. *Using the Tap/Valve on the hand piece, back off the pressure when spraying short range, as the force of the pressure will only disturb the soil.*

Step six; Be sure to mark off areas such as 1000 Meters Sq to give a more accurate spray, prior to commencing.

- *Dye is not required but can be used. Quick germination is evident.*

Variable mixes with areas, times and costing;

Example 1

Water Quantity; 12,000 Litres water;
Liquid Product; 16 Litre mix(In 20 Litre plastic bucket)
Soil coverage; 4,000 Square Meters
Liquid mix rate; 3 Litres per square Meter

Application chart: *Erosionex* liquid:

Example 2

Using 16 litres, 8 litres, 4 litres and 2 litres;

<u>Time</u>	<u>Water amount in Litres</u>		<u>Area-M2</u>	<u>Litres per Meters Sq</u>
1. 3 Wks	4,000	2 ltrs	4,000	1
2. 6 Wks	6,000	4 ltrs	4,000	1.5
3. 12 Wks	8,000	8ltrs	4,000	2
4. 24 Wks	12,000	16 ltrs	4,000	3

***Note; for road application rate: a three litre mix in 4,000 ltrs water to cover 4,000 M/sq
Term is subject to soil condition***

Available in 1Ltr, 2Ltr, 4Ltr, 8Ltr, 12ltr, 16ltr or tailored to truck size.

9.

Changing the short term face of Large & small Stock Piles:

Being non trafficable, stock piles generally have a longer life; the shape of the stock pile may change daily due to machine access, and therefore being more cost effective by using half to quarter rate of **Erosionex liquid or Powder** through a Tanker or sprinkler system fed from a pre mix holding tank.

3. **Erosionex** Granule

Erosionex Granule_ granules are applied at between 1gram to 10gram per sq meter and can be added to seed, or Granule fertilizer if required, for more accurate spreading in lower rates, weigh of the required amount, add sand and mix thoroughly and spread.

*1kg of **Erosionex Granule** will treat 100m² to 1000m² as required.*

Application service and costs are available upon request:

1. Using 1.1/2 inch hose to a level or raked surface with and without Tracer Dye P.O.A.
2. Batter fan applications To Roads, Verges and Hardstand areas. P.O.A.
3. Erosionex Granule P.O.A.

Please note:

- a) **All applications have a mobilisation charge of \$250-00, and a total minimum charge of \$450-00 per application.**
- b) **An extra charge will apply for Stock piles, Unraked or uneven surfaces.**
- c) **All quotations and pricing are subject to plus G.S.T.**

If you have any questions or you wish to order a quantity for a trial, Please call me, I am contactable on 08 9537 8628 or mobile 0417 170 621 or e-mail; colin@benigntech.com.au

BENIGN TECHNOLOGIES
DIV. OF **Anderton Benign Pty Ltd**
ABN NO 42 122 618 553
190 Greenwood Way, Barragup. W.A. 6209

Phone: 08 9537 8628 **Fax:** 08 9537 8620 **Mobile:** 0417 170 621
E- Mail info@benigntech.com.au

DESIGNS – APPLICATIONS – SYSTEMS * EARTH - AIR - FIRE - WATER TECHNOLOGIES.