

# BASE-SEAL



Case Study #1 - Arrow Energy

**BASE-SEAL IS A POLYMER BASED MATERIAL USED IN ROAD BUILDING AND STRENGTHENING APPLICATIONS. IT ENHANCES STABILISING PROCESS BY ACTING AS A LUBRICANT ALLOWING THE LIME, LIME KILN DUST OR CEMENT TO MIX INTO THE INSITU MATERIAL MORE EFFICIENTLY. VEC CIVIL ENGINEERING HAS ACQUIRED THE RIGHTS TO SUPPLY PRODUCTS AND ARE NOW UNDERTAKING TRIALS IN AUSTRALIAN CONDITIONS. BASE-SEAL HAS WIDE VARIETY OF APPLICATIONS; PARTICULARLY AREAS SUBJECT TO WATER INUNDATION AND REMOTE AREAS WHICH NORMALLY REQUIRE IMPORT OF MATERIALS TO SITE. THIS IS ONE OF THE MANY CASE STUDIES.**

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## INNOVATION

Dalby Soil Stabilisation Trials for Arrow Energy, Queensland, 2013-2014.

### DAY 1

Tuesday 26<sup>th</sup> November 2013:

Mobilised to site.

Grader stripped topsoil from L/H/S and placed it on R/H/S .

Challenges:

Trial site was not as anticipated.

Client requested that relocated topsoil be secured. Suggested Top-Shield be sprayed on topsoil to hold it in place.

### DAY 2

Wednesday 27<sup>th</sup> November 2013:

Treated with LKD, brought up to 2% content by mass.

Graded to shape and rolled in with Multi tyre roller.

### DAY 3

Friday 29<sup>th</sup> November 2013:

Treated with 2% LKD by mass (bringing total treatment to 4%) and 0.6 L / m<sup>3</sup> of Base Seal.

Challenges:

During the stabilisation water carts, rollers and graders were not available in a timely manner leading to major losses of moisture following the stabilisation process.

The stabiliser got bogged during the second run at CH110 leading to incorporation of untreated material at that location.

### LESSONS LEARNT:

Moisture content is such an important part of this process at least one additional water cart should have been considered to mitigate the risk of moisture losses at critical points in the trial.

Best case scenario is that the soil is completely dry prior to treatment.

A roller should follow immediately behind the stabiliser in order to seal in moisture and promote the curing process.

Consider the slaking of LKD prior incorporation into the treated material.

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### CONCLUSION

The stabilisation of the site showed considerable promise fulfilling the criteria required.

The location was exposed to traffic on a trial basis over a period of 7 months in weather conditions both fine and poor. Feedback from personnel involved in the trial was positive.

During a follow up inspection of the site no visible signs of degradation were observed and for all intents and purposes the location was unchanged from the date of the completed works.

No signs of additional degradation in pavement at CH110 location of unstabilised material which were incorporated in zone of stabilised materials.



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