

Category 3: Excellence in Sustainability

Pavement Rehabilitations Bass Highway Tasmania

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Downer EDI Works



2022 AustStab Awards of Excellence

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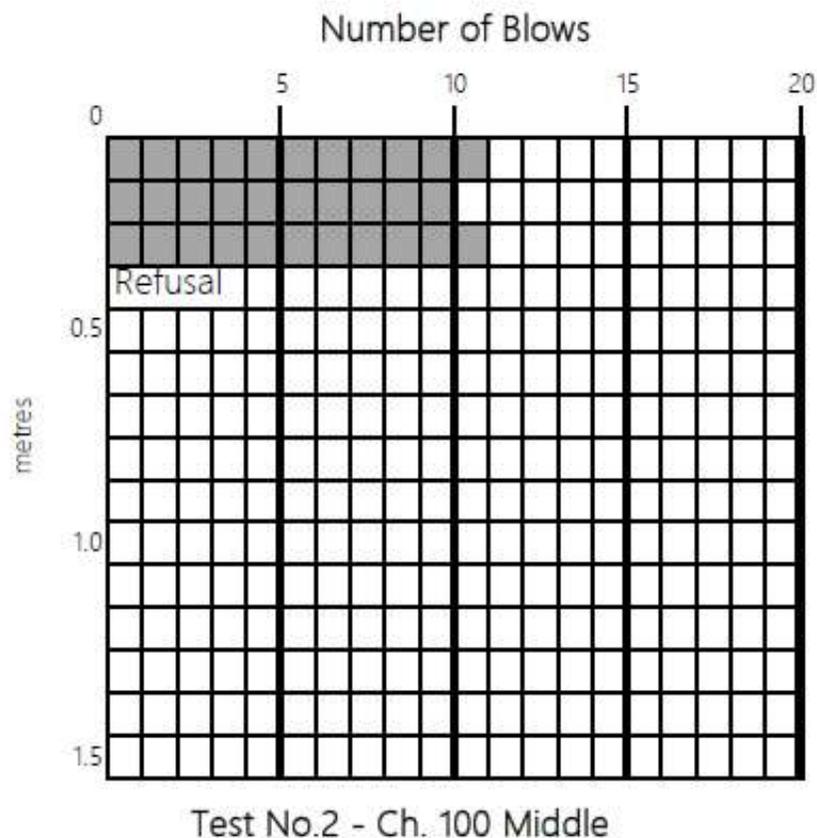
The Project

- Rehabilitation project on the Bass Highway in Tasmania near Sassafras
- Cement stabilization of existing surface
- Overlay of 200mm layer of Class 2 gravel
- DCP testing completed for recommended treatment to existing pavement
- Return later in the year to complete 7-9 more patches



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Objective, Design and Methodology



- The project objective was to complete pavement rehabilitations on two sites with the most cost effective method possible
- The design proposed was to pulverise the existing pavement and cement stabilise the section
- DCP testing was completed – should the Californian Bearing Ratio (CBR) be less than 6% then the pavement design will be 400mm stabilisation with 3% cement. However, if the CBR Result was to be more than 6%, then a 300mm stabilisation design would be chosen with 2% cement.

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Stabilisation

Field Density / Moisture Test / Random Site Selection Procedures AS1289 5.8.1, 2.1.1, Vicroads RC316.10

laboratory no	U22/215	1	2	3
longitudinal location	m	22	221	419
lateral location	m	3.0	0.2	1.1
measurement depth	mm	250		
field dry density	t/m ³	2.13	2.09	2.13
field moisture content	%	5.2	5.5	5.0

Laboratory Compaction Procedure AS 1289 5.4.1, 5.2.1 Modified Compaction

retained 19.0mm sieve	%	12	6	10
maximum dry density	t/m ³	2.03	2.14	2.13
optimum moisture content	%	6.4	6.6	6.3
moisture ratio	%	81.5	86.0	79.5
Dry Density Ratio	%	97.0	98.0	100.0

lot characteristics

mean density ratio	%	98.3	mean moisture ratio	%	82.2
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Once pulverization was completed, the DCP tests indicated a 2% cement stabilisation at 300mm was required to create a strong subbase.

Stabilisation included the use of a 50mm layer of 45mm NDCR used to create a very strong subbase layer. This can be seen on the test results throughout the sites.

The location of works on the Bass Highway consisted of heavy traffic volumes, which included a lot of trucks travelling at 110km/hr. A strong pavement was required to support this traffic volume.

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Sustainability



- Reusing the existing base layer in the new subbase layer allowed us to save carting new material to site.
- This resulted in saving time and money of exporting both old and new material.
- We were able to achieve more linear meters per day by using the existing base layer.
- Client was very satisfied with the pavement and works completed and have requested our return in summer to complete 7-9 more patches on the Bass Highway.

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Challenges

- Heavy Traffic near worksites slowed down overall productivity
- Time was saved using the existing base layer as the new subbase layer
- Overall work sites were reduced to avoid heavy delays to local traffic on the roads and these delay time expenses were reduced due to no excess material being purchased for the subbase layer.



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