



Coal Combustion Products in Roads

Flexible & Rigid Pavement Trials at Stanwell Power Station

Objective

The objective of this project is to demonstrate the beneficial use of CCPs heavy duty pavement applications to dTMR standards, as part of a broader initiative to increase CCP utilization in our built environment..

Designed and Built to dTMR Standards

With the goal of demonstrating the performance of CCPs on heavy duty pavements, the control and experimental pavement profiles on this project were developed in accordance with Transport for Main Roads Pavement Design Supplement, Transport for NSW Standards and Austroads Guide to Pavement Technology Structural Design.

Sustainability Targets

To maximise the use of CCPs for sustainability-driven projects, the pavements utilise between **40** and **490** kg of CCP per m² (of pavement). Notably, the intersection pavement utilises bottom ash as for all structural layers. Current use of CCPs is around **35** kg/m² - our approach has increased the sustainability calculation.

METHODOLOGY

Pavement Selection

To accurately evaluate the performance of the CCPs, each experimental pavement modifies a single layer of the control pavements, thus isolating only one CCP variable per pavement.

Control vs Experimental Pavements

Two control pavements were established for this trial:

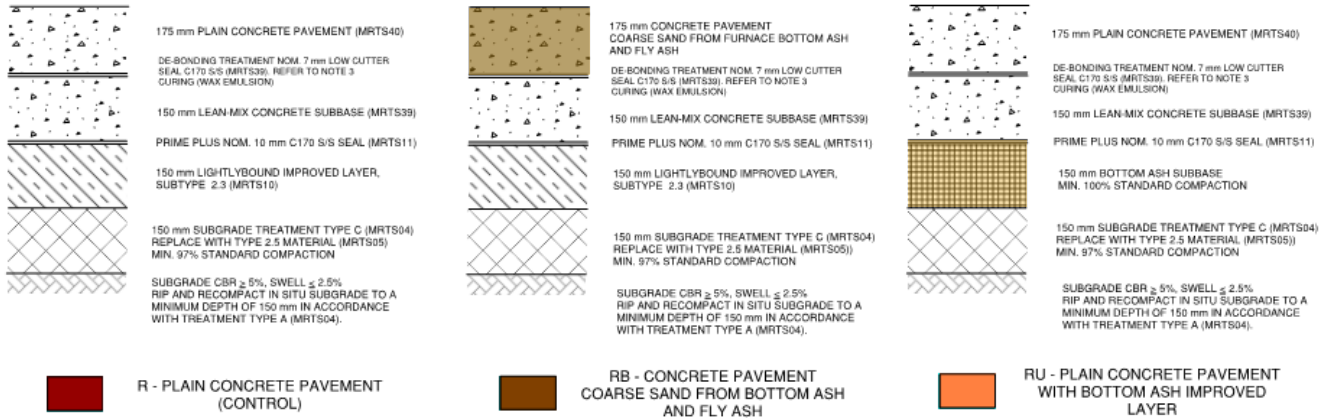
- Flexible - granular pavement + asphalt surfacing
- Rigid - plain concrete pavement (PCP)

Three experimental pavements were established:

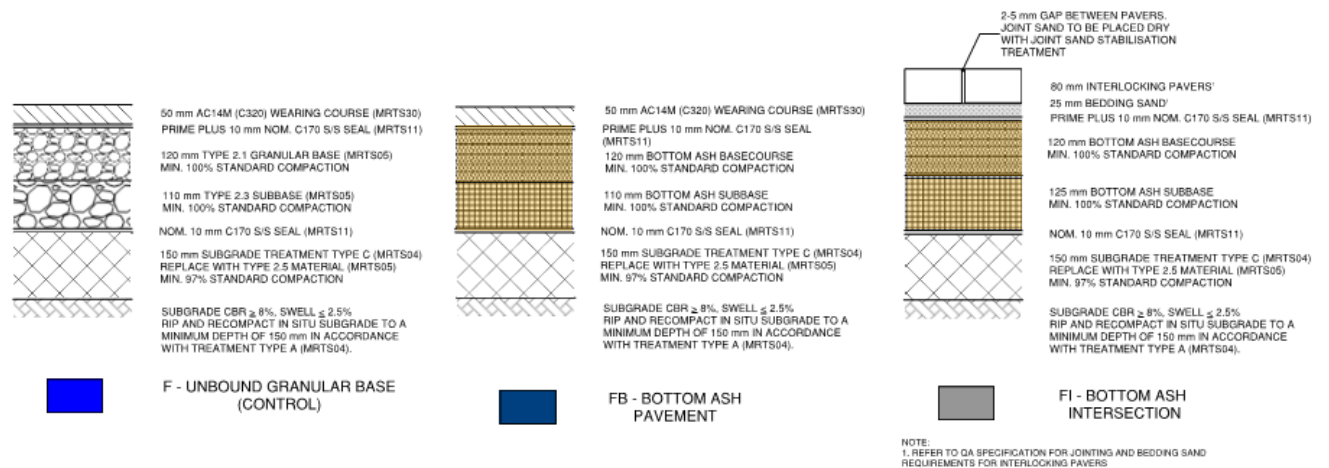
- Flexible - bottom ash base and subbase layers
- Rigid - bottom ash and RoS fly ash as sand
- Rigid - Bottom Ash as improved layer



Sustainability - CCP usage per m² pavement



FLYASH	45	112	45
BOTTOMASH	0	39	293



FLYASH	0	3	0
BOTTOMASH	0	449	487

Usage expressed as kilograms of CCP per m² of pavement (kg/m²)