



# SAMI SOLUTIONS

## Pave-Flex

### SA Department of Transport



Pave-Flex Solution No. 1

# New flexible cold asphalt system for surface rehabilitation

SAMI Pty Limited has introduced Pave-Flex, a new method of constructing cold thin flexible asphalt surfaces.

Developed over the past couple of years with support from road authorities including the SA Department of Transport, Pave-Flex is aimed at providing an economical means of resurfacing asphalt pavements in a wide range of applications where traditional hot mix is either not available or not suitable due to reflective cracking problems.

Some of the major features of Pave-Flex's cold asphalt technology, which is believed to be the only commercially available emulsion-based asphalt in Australia, include:

- Improved shape correction due to the material's superior structural integrity compared to normal open graded asphalts.
- Better surface drainage characteristics.
- Reduced road noise.
- Increased friction/skid resistance.
- Good crack and deformation resistance; and



- Early traffickability due to the development of a rapid setting breaking agent.

In addition, Pave-Flex is environmentally friendly. The process requires significantly less energy than hot mix, uses solvent-free emulsions and eliminates over-production and wastage as all materials are mixed on site at the time of paving.

This also simplifies project planning and greatly reduces the tradi-

tional problems associated with coordinating production and paving of hot asphalt.

Because it requires little heat — the mix is placed at a temperature of about 40°C compared to about 180°C for hot mix — the system is also easier and safer for workers to handle.

The SA Department of Transport's Operations Engineer, Peter Todd, said Pave-Flex may provide an alternative method of asphalt surface rehabilitation for the Department's extensive regional and rural roads network, much of which is carrying increasingly high volumes of traffic as the urban sprawl spreads from cities like Adelaide.

"We have been investigating the performance of several different asphalt surface rehabilitation techniques in recent years and, depending on its long-term performance, Pave-Flex has great potential for remote site applications where hot mix is unavailable or where the cost of setting up a mobile plant is prohibitive," he said.



Virgin aggregate being delivered into the hopper of the specialised mixer/paver.



The above shows the improved surface drainage characteristics of a **Pave-Flex** surface, recently completed by **SAMI**.

Pave-Flex is mixed and laid on site, is highly mobile and can be used in even the most remote areas. The process — initially based on similar processes developed over the past 25 years in the USA — is carried out by a specially designed asphalt paver.

The asphalt ingredients are mixed and milled in the machine which then places the mix by auger to a normal asphalt paving screed covering variable lane widths. During the emulsion curing process, the mat is compacted and the surface voids are filled and mechanically locked together by a lock-in coat of fine aggregate which becomes part of the finished mat. After final rolling, the open-graded surface is immediately traffickable.

Pave-Flex surfaces have been successfully placed in shape-correcting applications to a range of depths from 20-80 mm.

To date, Pave-Flex has been used on a number of trial sec-

tions in SA, with more than 10 lane kilometres constructed over the past 12 months.

The SA Department of Transport's Surfacing Engineer, Kym Neaylon, said: "The first project was completed in March 1995 and is holding up well, although we are happier with many of the subsequent trials during which SAMI has continually refined the process and tailored it to suit Australian conditions.

"Correcting the shape of roads in remote areas is a difficult task," added Neaylon.

"Traditionally we have not only had to get the hot asphalt materials to the site before they deteriorate, we also have had to predict what the weather is going to do in perhaps the three or four hours it takes to get them there.

"Obviously a totally self-contained system like Pave-Flex is much more appropriate for projects in regional and remote areas and we will be carrying out more trials over

the next 12 months. We will also continue to monitor the trial sections over the next couple of years to establish their long-term performance."

Chris Rootsey, General Manager, SAMI Road Services, praised the SA Department of Transport for its support during the early stages of Pave-Flex's development.

"Being able to work on large scale test sections under actual traffic situations has been an excellent investment for both parties.

"It has enabled us to accelerate progress towards a commercially viable process which offers wide ranging benefits to authorities throughout the country for difficult road rehabilitation problems.

"As a result of our success in SA, interest in Pave-Flex is growing, with further trials and projects planned throughout the country."

*This Case Study has been prepared with the kind assistance of the SA Department of Transport.*



For further information on any of the products featured in this Case Study or any of SAMI's other specialist road maintenance products and services, please contact:

**SAMI Pty Limited** A.C.N. 001 089 416  
 12 Grand Avenue, Camellia, NSW 2142  
 Telephone (02) 9638 0110. Facsimile (02) 9638 4090.

