

# Preventative approach to road maintenance in France

## One Pass Chip Sealer facts



AC pavement exhibiting Chip Seal surface dressing maintenance throughout life up until total resurface dressing takes place.

### France vs Australia road maintenance comparison

In July 2009, Ashpave visited France to get a view of the French technology and application methods of Chip Seal surface maintenance and surface dressing industry practices.

We were interested to see how the French methods differed from Australia, and if there were tangible benefits that could be seriously considered and applied as a new trend in Australia.

French roads are divided into 3 levels of responsibility:

- 1) local villages
- 2) regional main roads
- 3) national highways

Ashpave focused on village and regional roads as the national highways are made up of heavy AC pavements with the occasional use of Chip Seal on shoulders.

### Environment of French roads and binder use

The total use of Binder used for Chip Sealing works in France is about 50 million tones. There is a heavy bias towards the use of HBCE, SBR and to lesser degree SBS modified Bitumen Emulsions with Hot Bitumen being used on large straight sections of road. Cutback bitumen has almost vanished. Some 200+ Emulsion production plants produce Emulsion as a road binder readily available in close proximity of 100km radius.

The condition of the French village roads are not to dissimilar from Australia. They are in some cases of very old origin, poor line and level in places. Not many village budgets allow to reconstruct or possibly overlay with AC. A more economical method of maintaining the integrity of existing Bitumen Chip Seal surfaces had to be found.

### Chip Seal road maintenance in France - a preventative approach

For the last 20 years it has become common practice to use the modern One Pass Chip Sealer for road maintenance. With the capability of these machines and the ability to visualize the pavement, potential surface breakdown can be addressed before it occurs. This culture seems to have practically eliminated the need for panic pothole repairing. The whole life cycle of the surface is extended and allowing resurfacing budgets to be used in a more amortized fashion.

Communal roads are taken care of by small local Chip Seal Contractors which operate two machines, able to take care of all Chip Seal surfacing needs in their local area. A typical small Chip Seal contractor would put 500 000 L through their machine a year of which approximately half will be surface dressing patching maintenance in their home village, resurfacing, tack coating and spraying of case coarse for binding purposes.



29 Bald Hills Road  
Pambula NSW 2549

P 02 6495 7232 F 02 6495 7580

M 0409 787 177, 0407 957 232

E [ashpave@optusnet.com.au](mailto:ashpave@optusnet.com.au)

[www.ashpave.com.au](http://www.ashpave.com.au)

# Chip Sealing road maintenance in France revealing facts



A typical French village road with surfacing maintenance applied when and where needed.



Local Chip Seal contractors take care of all Chip Seal surfacing needs in their area. In most cases they have a small outfit of one or two machines.



Example of a road surface in Australia that would benefit from surface dressing patches.

## Why the French maintain their road surfaces with the One Pass Chip Sealer.

### Some numbers

\$ cost = pothole patch

Pothole 300mmx300mmx30mm depth = 9L of uncompacted repair material to fill, compaction factor 25% = 11.25L of material to fill + 1.5L bitumen binder.

\$ cost = surface dressing patch

Dressing 300mmx300mm=aggregate material 1.42L, bitumen binder 1.4L

### Let's compare

To repair a pothole requires 11.25L of repair material to fill.

To surface dress patch the same area before breakdown occurs requires 1.42L of material.

The ratio of granular material usage for pothole repair to surface dressing patch material usage is approximately = 7.87:1.

The ratio of Binder material usage = 1:1

### What does this mean?

It takes approximately 8 times more material to repair an advanced surface breakdown than it would if the problem is identified and addressed in the early stages.

The time factor to do a repair of an advanced surface breakdown this size with current techniques, compared to a surface dressing patch applied with fully automated method is approximately 150:1

### Compounding effect

This equation would appear to be of a compounding nature if it were possible to prevent 50 surface breakdown repairs from happening it would approximately = 500 surface dressing patches.

Out of these 500 surface dressings it would be safe to say 50% would have progressed into surface breakdown.