

# Introduction to Road Materials Engineering

Part 7: Introduction to Rehabilitation

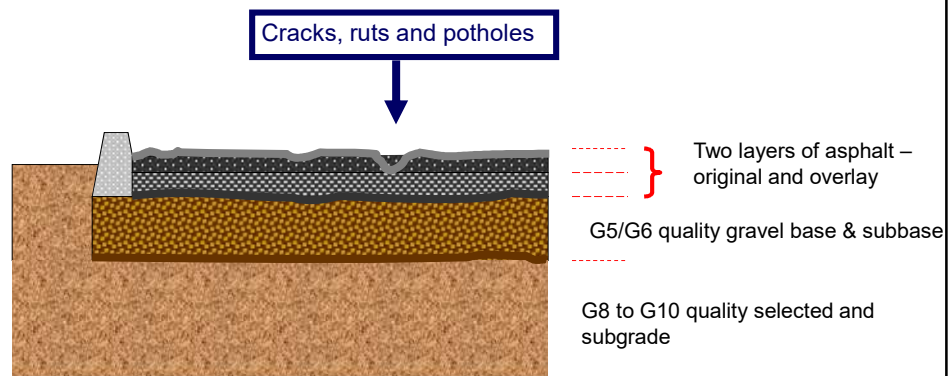
Presented by SARF

Presenter:  
Ron Berkers



Overview of pavement rehabilitation methods

## TYPICAL SEVERELY DISTRESSED PAVEMENT



*A variety of rehabilitation methods is available, the trick is to choose the most effective !*

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## Full pavement reconstruction



*Remove existing  
asphalt and base layers  
to spoil*

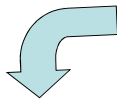
*Compact and re-profile the  
selected/subgrade. Check for  
“heave”, undercut and replace  
problem areas*



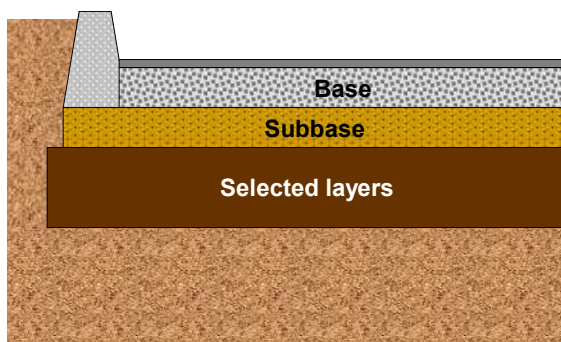
*Hope it  
doesn't  
rain !*

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## Full pavement reconstruction



*Import new layerworks – tip, spread,  
profile, compact*

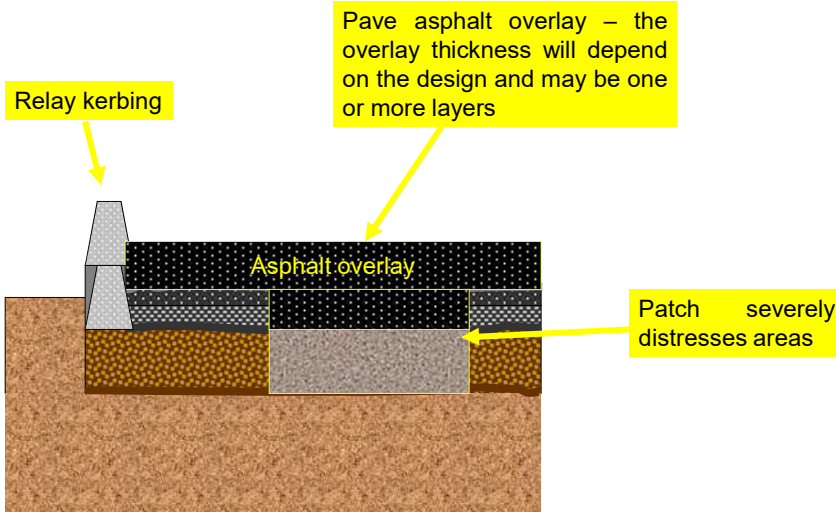


*Hope it  
doesn't  
rain !*

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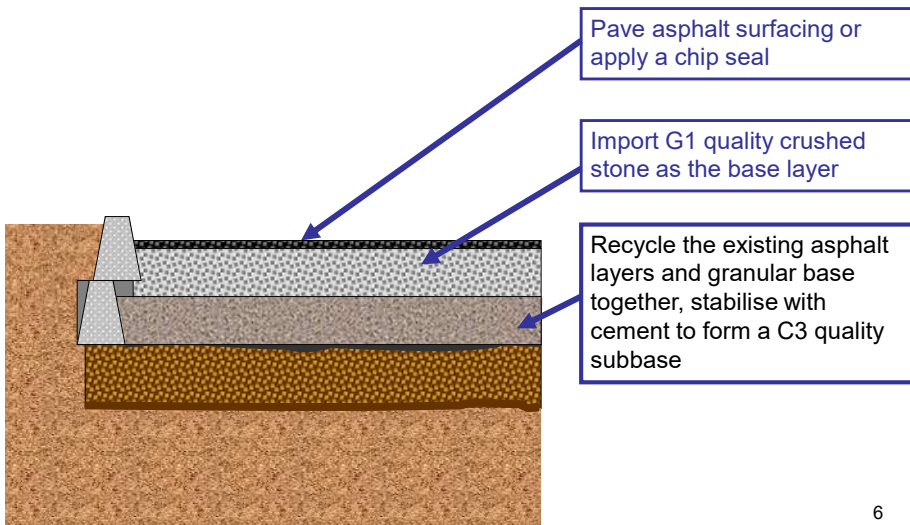
## Mill-patch-overlay

*Often it is necessary to mill out and patch badly cracked and rutted areas before paving the asphalt overlay*



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## Crushed stone base overlay

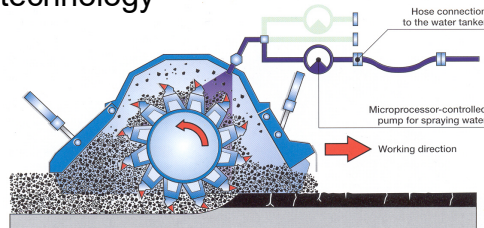


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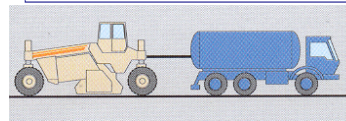
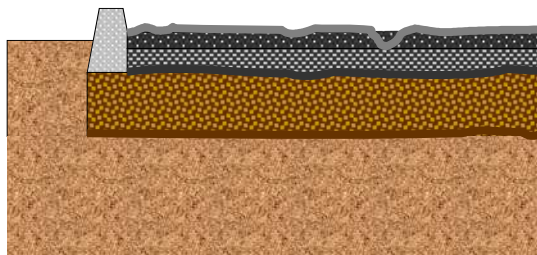
## Cold in-place recycling technology

To recap:

Cold in-place recycling is carried out by specialised equipment that is capable of milling into strong road pavements



Water and liquid stabilising agents from the tanker pushed ahead of the recycler are injected into the recycler's mixing chamber and are mixed together with the recycled material



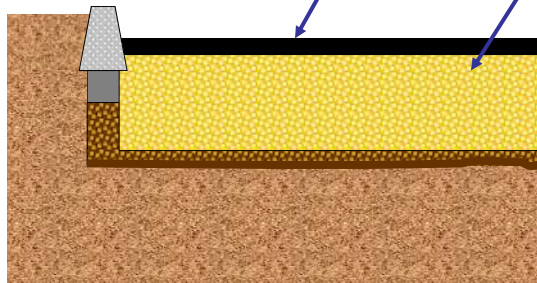
Stabilising agents include cement, bitumen emulsion or foamed bitumen

## Cold in-place recycling technology

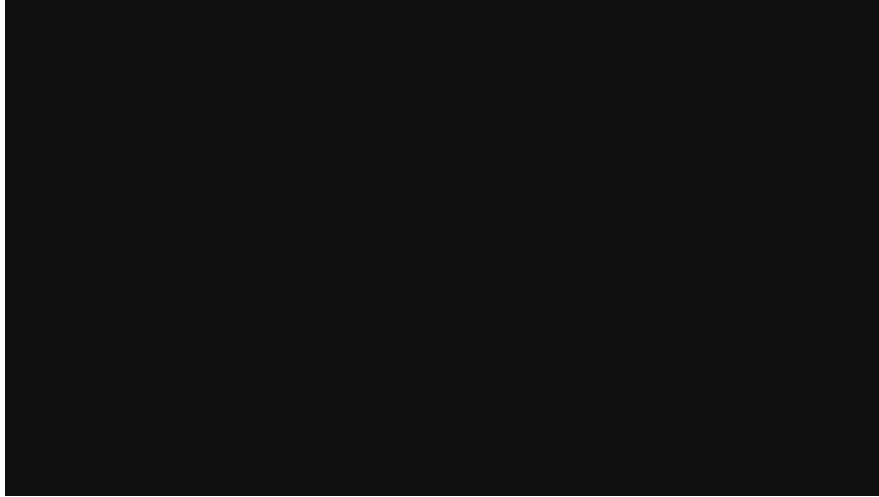
Apply chip seal for lightly trafficked roads and one or two layers of asphalt on more heavily trafficked roads.

Recycle the existing pavement using foamed bitumen or bitumen emulsion together with small percentage of cement (1% to 1.5%)

The maximum practical recycling depth is usually around 250 mm – difficult to achieve good compaction if recycled deeper



## Cold in-place recycling technology



Click Picture

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## Choice of rehabilitation method

*The cold in place recycling method is often the most effective in terms of price, speed of construction, and reducing traffic disruption.*

*However it is **not always the most suitable** means of rehabilitation and the various other methods should also be carefully considered.*

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