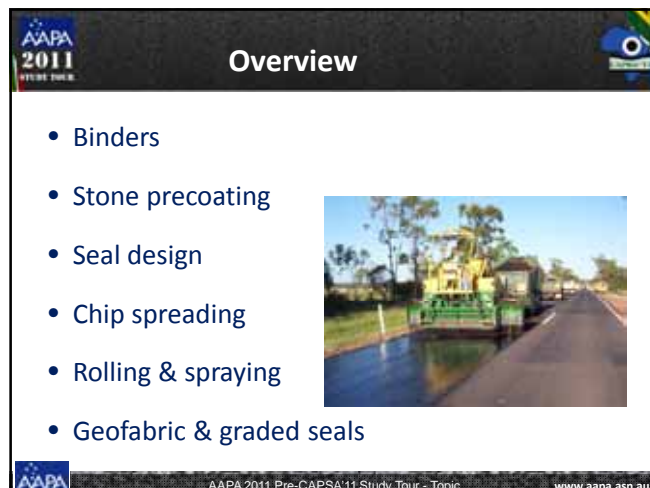




2011 STUDY TOUR


**Spray sealing
Contractors experience**

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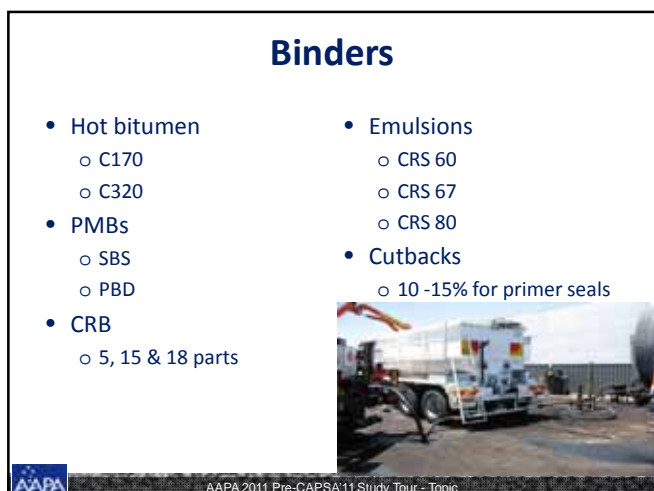


Overview

- Binders
- Stone precoating
- Seal design
- Chip spreading
- Rolling & spraying
- Geofabric & graded seals




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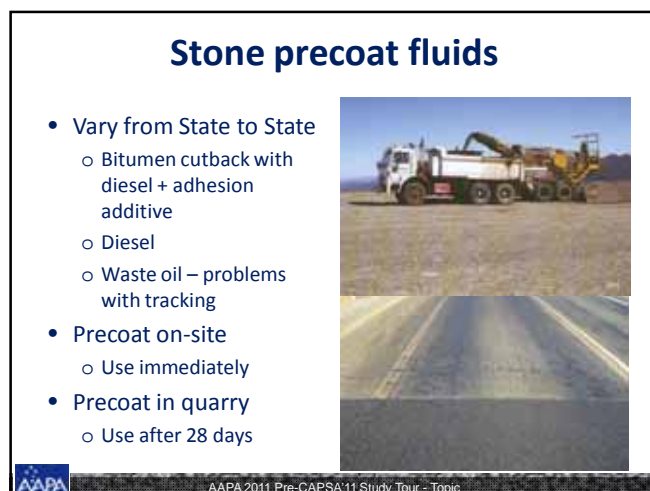


Binders

- Hot bitumen
 - C170
 - C320
- PMBs
 - SBS
 - PBD
- CRB
 - 5, 15 & 18 parts
- Emulsions
 - CRS 60
 - CRS 67
 - CRS 80
- Cutbacks
 - 10 -15% for primer seals




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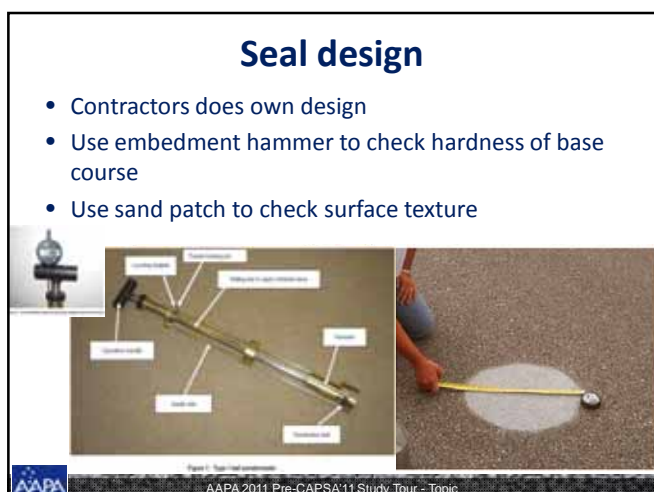


Stone precoat fluids

- Vary from State to State
 - Bitumen cutback with diesel + adhesion additive
 - Diesel
 - Waste oil – problems with tracking
- Precoat on-site
 - Use immediately
- Precoat in quarry
 - Use after 28 days




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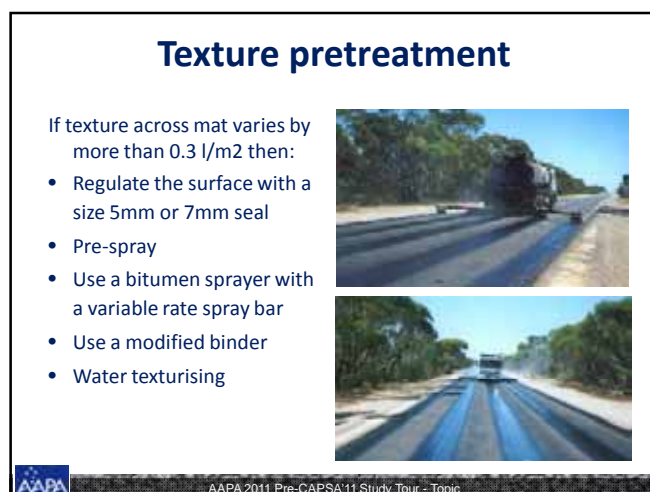


Seal design

- Contractors does own design
- Use embedment hammer to check hardness of base course
- Use sand patch to check surface texture




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Texture pretreatment

If texture across mat varies by more than 0.3 l/m² then:

- Regulate the surface with a size 5mm or 7mm seal
- Pre-spray
- Use a bitumen sprayer with a variable rate spray bar
- Use a modified binder
- Water texturing



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Chip Spreaders versus Roller Boxes




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Chip Spreaders

Advantages

- Will give a more uniform and consistent mat
- Can spread at widths from 0.3 m to 4.4m in one pass
- Once aggregate spread rate is set it is locked in and will not change unless operator changes it
- Saves around 5% of aggregate (Which generally covers float charges)
- Operator sits in cab facing direction he is travelling (Better Visibility)
- No loose aggregate (Overlaps kept to minimum)
- Less sweeping

Disadvantages

- Maximum width would be more effective if you could go out to 6.2 m
- Slower than roller boxes when road width is over 4 m (Need to do in two passes)
- Has to be transported via float to job sites

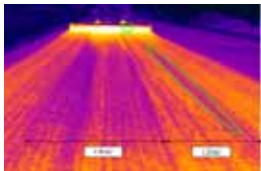
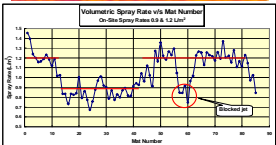
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Chip & pray?

Combo Rollers

- Steel wheel with rubber covering and 4 pneumatic tyres
- Achieve compaction with fewer passes
 - broom test
- Need flat surface be effective
- Difficult to replace rubber when damaged.

Sprayers



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Graded aggregate surfacings

Why we need graded aggregate seals?

- Almost 60% of Australia's proclaimed road network is unsealed
- Gravel roads are a problem for:
 - road users, communities, road providers & environment

	Km	%
Surfaced	332,863	41%
Unsurfaced	477,373	59%
Total	810,236	100%


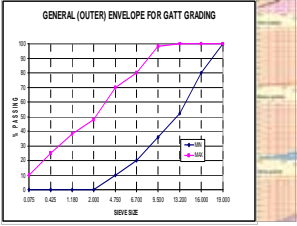
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Why we need graded aggregate seals?

- low cost surfacings include:
 - Primer seal, sand seal or single seal
- Limited performance of other surfacings because:
 - Limited amount of binder in seal
 - Sometimes gravel not primed to reduced cost
 - Require to be resealed within 2 years to avoid pot holes
 - Performance very sensitive to having a good quality base
- Has improved performance because:
 - Self-priming binder
 - High binder application rate i.e. >1.8 litres/m²
 - Incorporation of a polymer in the binder improves flexibility
 - Use of cutter ensures self healing of seal
 - Higher stone application rate i.e. > 60 m²/m³
 - Graded aggregate ensures better stone interlock

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Aggregate Grading

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600,000 m² placed since 1999



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Geo-Fabric Seals



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Typical surface for GRS would be used



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Spray 0.6 l/m² on overlapped to avoid stripping



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Example of a nailed joint



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Equipment used - WA Method



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Victorian method- multityred roller



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What not to use



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Why not to spray when temperature > 55 C



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