


**2011  
STUDY TOUR**


*Can we use Sprayed Seals  
in very High Stress  
Locations?*



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**Sprayed seals in high stress locations**


- Sprayed bituminous seals have served us very well and over a long period of time
- Times have changed – traffic volumes have increased dramatically



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**Sprayed seals in high stress locations**

- Commercial vehicles are now:
  - Larger
  - Heavier
  - Faster
  - Travelling over longer distances



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**How do we design seals for these situations?**

- Current method described in -The Design of Sprayed Seal Surfacing (Austroads 2006)
- Being updated to allow for these larger vehicles and high stressed locations

### Current seal types used

- Single/single with unmodified binder
- Double/double with unmodified binder
- High Strength Seal – HSS (single/single with light to highly modified binder depending on site severity)



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### Proposed new seal types

- Single/single with unmodified binder
- Double/double with unmodified binder
- HSS1 – a single/single seal with light to highly modified binder depending on site severity
- HSS2 – a double/ double seal with light to moderately modified binder in one or both applications – modification level depends on site severity
- XSS (Extreme Stress Seal) – a double/double seal with highly modified binder in both applications



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### Proposed new Seal Selection Guide

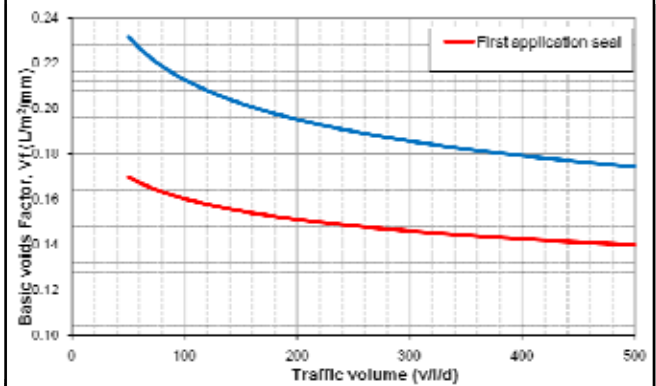
	Design Traffic v/d		<200		201 - 750		751 - 2000		2001 - 5000		>5000	
	<15	15/26	26/45	>45	<15	15/26	26/45	>45	<15	15/26	26/45	>45
Rural: roads, highways and freeways - no high stress areas	Climate - Hot		SS		DD		HSS1		HSS2		XSS	
	Temperate		SS		DD		HSS1		HSS2		XSS	
	Cold		SS		DD		HSS1		HSS2		XSS	
High stress locations	Small radius curves, roundabouts, driveways, turning lanes		DD	HSS2	DD	HSS2	XSS	HSS2	XSS	ASPHALT		
	Intersections		DD	HSS2	DD	HSS2	XSS	HSS2	XSS	ASPHALT		
	Grades >9%		SS	DD		HSS1		HSS2		XSS		
	Cracked pavements		SS		DD		HSS1		HSS2		XSS	

• SAM - preferred SAM is a SS (14 or 10mm) but a DD may be required where there are also high stress conditions  
 • Minimum binder rate for SAM application is 1.5 Wf  
 • GRS-C170 with DD is preferred type of GRS (14/7mm)



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### Double/Double design - Basic Voids Factor



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