



2011 STUDY TOUR



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

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

Sprayed seals in high stress locations

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

















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)

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

Proposed new Seal Selection Guide

	Design Traffic v/l/d	< 200				201 - 750				751 - 2000				2001 - 5000				>5000			
		Equivalent Heavy Vehicles %				<15	15/26	26/45	>45	<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	S/S		D/D								HSS2		XSS							
				HSS1																	
	Temperate	S/S				D/D								HSS2		XSS					
						HSS1															
	Cold	S/S						D/D				HSS2				XSS					
								HSS1													
High stress locations	Small radius curves, roundabouts, driveways, turning lanes	D/D		HSS2	D/D		HSS2				XSS	HSS2	XSS	ASPHALT							
	Intersections	D/D		HSS2	D/D		HSS2				XSS	HSS2	XSS								
	Grades >5%	S/S		D/D								HSS2		XSS							
				HSS1																	
	Cracked pavements	<ul style="list-style-type: none"> • SAM – preferred SAM is a S/S (14 or 10mm) but a D/D may be required where there are also high stress conditions • Minimum binder rate for SAM application is 1.5 l/m² • GRS – C170 with D/D is preferred type of GRS (14/7mm) 																			

Double/Double design - Basic Voids Factor









