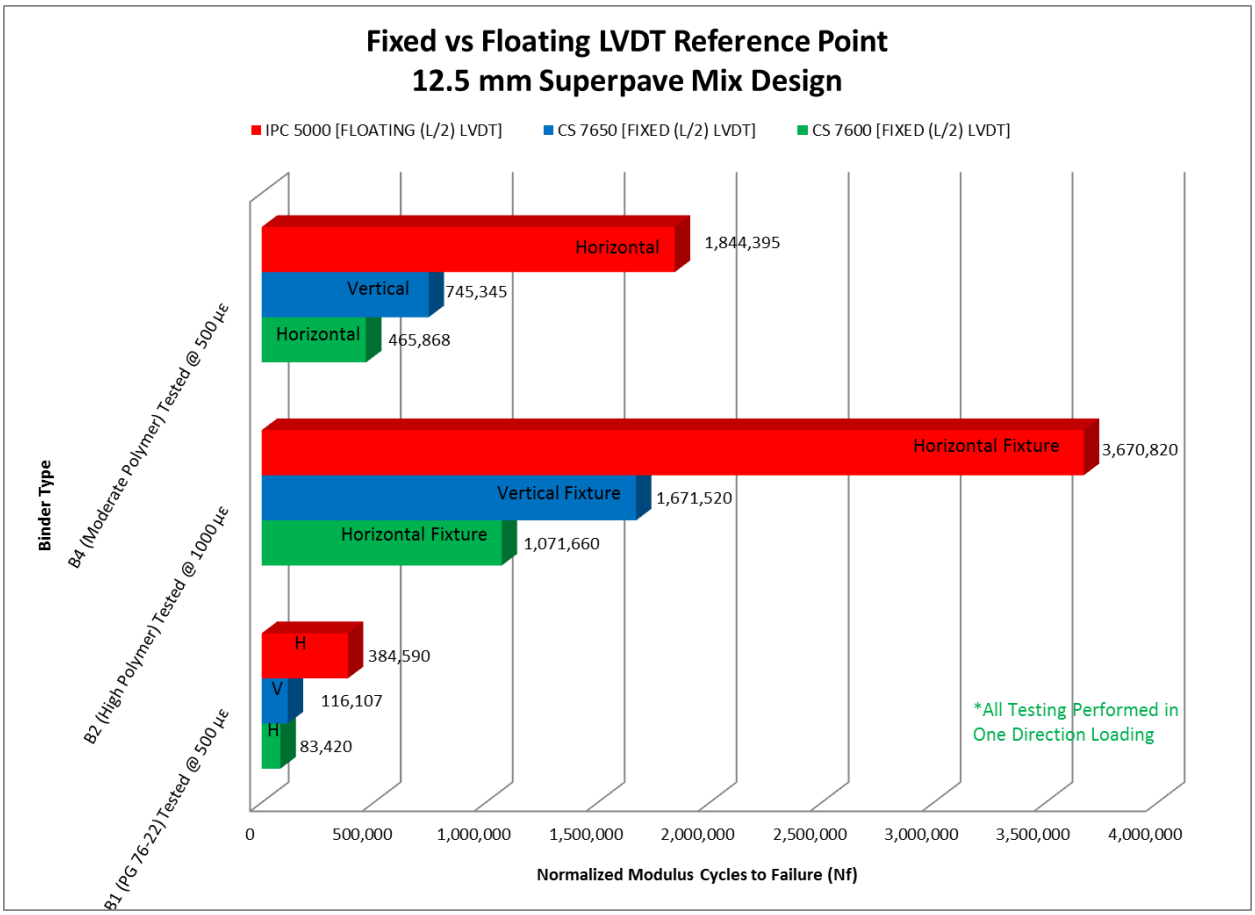
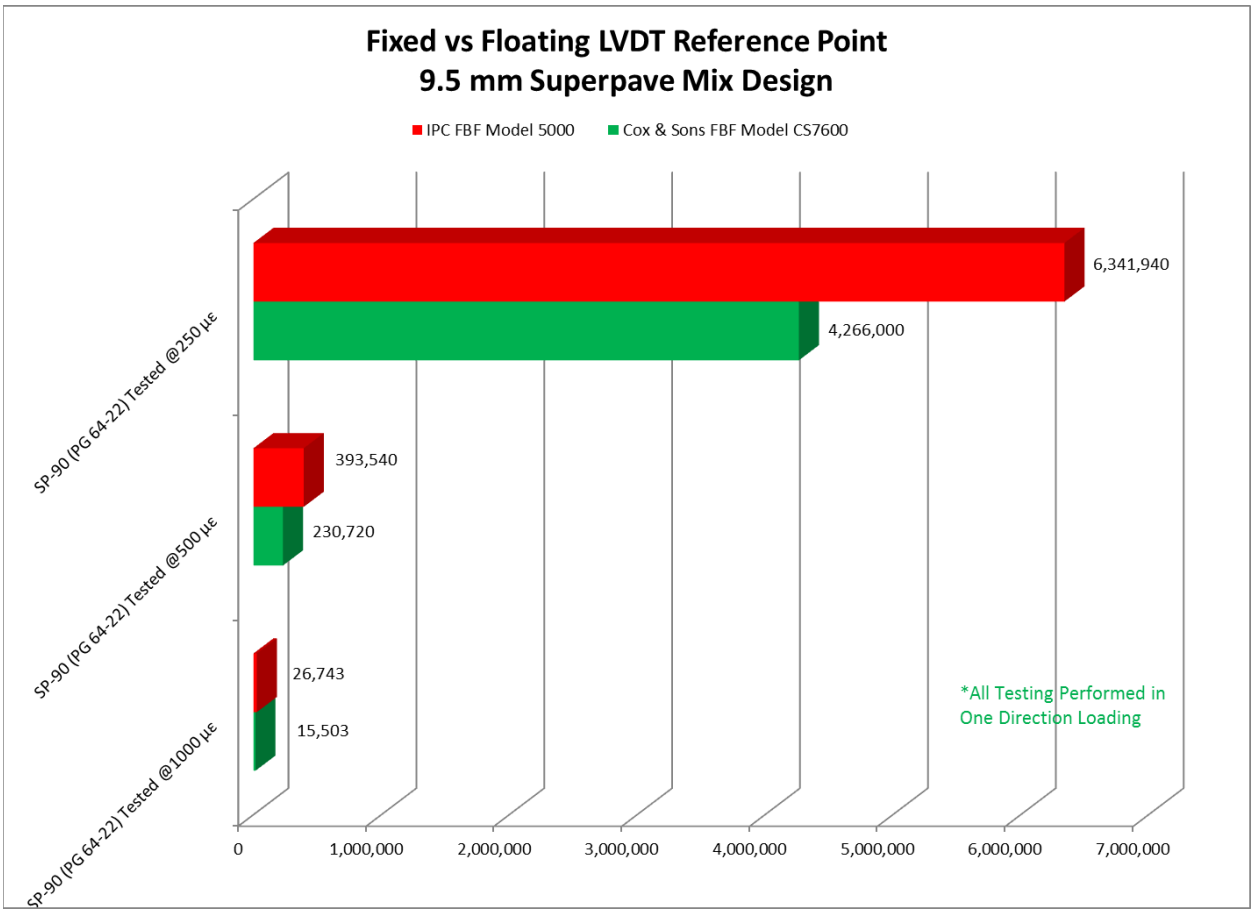
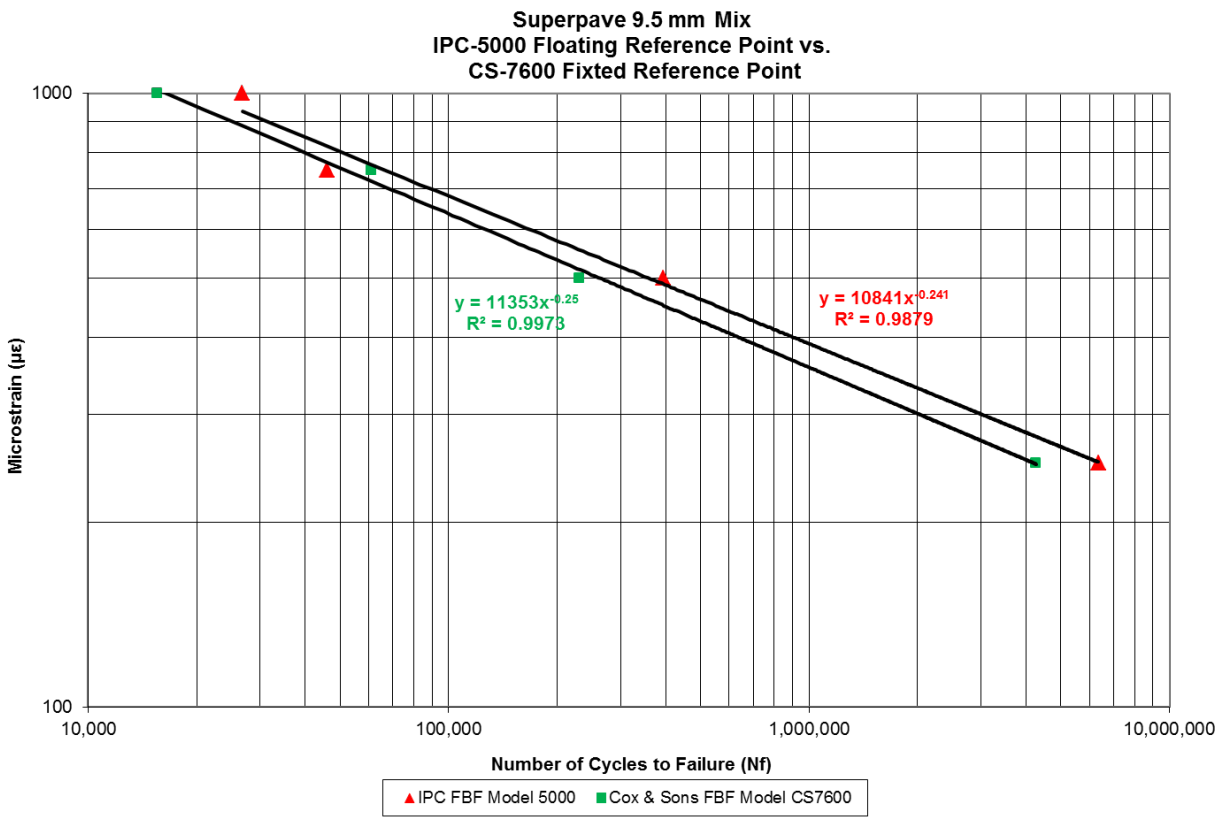


	Reference Point Comparison	
	Fixed vs Floating	Fixed vs Fixed
	Horizontal (Fixed)	Horizontal (Fixed)
12.5 mm Superpave Mix Design	Horizontal (Floating)	Vertical (Fixed)
	CS 7600 vs	CS 7600 vs
	IPC 5000	CS 7650
	Normalized	Normalized
	% Increase	% Increase
B1 (PG 76-22) Tested @ 500 με	361%	39%
B2 (High Polymer Binder) Tested @ 1000 με	243%	56%
B4 (Moderate Polymer Binder) Tested @ 500 με	296%	60%
*Data Supplied Courtesy of Road Science		

Mixtures that have polymer modification increase the separation between fixed and floating reference points.



	Fixed vs Floating
	Horizontal (Fixed)
9.5 mm Superpave Mix Design	**Horizontal (Floating)**
	CS 7600 vs
	IPC 5000
	Normalized
	% Increase
SP-90 (PG 64-22)	
Tested @ 1000με	73%
SP-90 (PG 64-22)	
Tested @ 500με	71%
SP-90 (PG 64-22)	
Tested @ 250με	49%
*Data Supplied Courtesy of Road Science	


Superpave 9.5 mm Mix
IPC-5000 Floating Reference Point vs.
CS-7600 Fixted Reference Point
1000
100
Microstrain (με)
10,000
100,000
1,000,000
10,000,000
Number of Cycles to Failure (Nf)
y = 11353x-0.25
R² = 0.9973
y = 10841x-0.241
R² = 0.9879
IPC FBF Model 5000
Cox & Sons FBF Model CS7600

FRM-006

Beam Fatigue Testing Summary

10 Hz, 15 C

Beam	Air Voids (%)	Level of Micro Strain	Initial Beam Stiffness (MPa)	Target Amplitude Calculated (mm)	Actual Amplitude at 50th Cycle (mm)	Report Amplitude at 50th Cycle (mm)	Test Termination (cycles)	Normalized Modulus Failure Point (cycles)
(FRM-006D) UTM (Down)Fixed Ref-Point				L (357)	L (357)	L (357)		
1	5.1	2000	1928	1.0721	1.0721	N/A	980,000	646,160
2	4.6	2000	1928	1.0949	1.0949	N/A	1,300,000	848,920
3	4.7	2000	1804	1.0888	1.0888	N/A	1,900,000	421,720
4	3.6	2000	1851	1.0766	1.0766	N/A	560,000	348,320
5	3.2	2000	1866	1.0784	1.0784	N/A	1,100,000	757,640
6	3.5	2000	1295	1.0776	1.0776	N/A	640,000	456,680
Average	4.1		1779	1.0814	1.0814			
(FRM-006E) UTM (Up)-Fixed Ref-Point				L (357)	L (357)	L (357)		
1	2.9	2000	2004	1.0607	1.0607	N/A	920,000	646,880
2	3.1	2000	1942	1.075	1.075	N/A	1,600,000	882,560
3	3.1	2000	1940	1.0748	1.0748	N/A	920,000	738,120
4	3.6	2000	1933	1.0883	1.0883	N/A	560,000	347,240
5	3.5	2000	1886	1.0896	1.0896	N/A	1,500,000	926,640
6	3.3	2000	1915	1.0706	1.0706	N/A	800,000	429,880
Average	3.3		1937	1.0765	1.0765			
				δx►Target	**δx=½δc**	**δc**		
(FRM-006G) Floating Ref-Point (UP)				L/6 (237)	L/6 (237)	L (Calc)		
1	3.9	2000	1606	0.5357	0.5372	1.0743	2,521,550	1,634,300
2	3.2	2000	1220	0.5377	0.5356	1.0712	2,304,000	1,278,390
3	3.1	2000	1682	0.5344	0.5335	1.067	1,426,130	901,570
4	3.6	2000	1875	0.5357	0.5366	1.0731	2,134,080	633,380
5	3.4	2000	1916	0.5356	0.534	1.0681	1,749,220	1,220,860
6	3.4	2000	1841	0.538	0.5385	1.0769	1,849,460	1,107,750
Average	3.4		1690	0.5362	0.5359	1.0718		

(FRM-006D) UTM (Down)Fixed Ref-Point

Mean	Stand Dev	COV
570,550	158,993	28

Removed the high and low values

(FRM-006E) UTM (Up)-Fixed Ref-Point

Mean	Stand Dev	COV
674,360	189,682	28

Removed the high and low values

(FRM-006G) Floating Ref-Point (UP)

Mean	Stand Dev	COV
1,127,143	166,251	15

Removed the high and low values

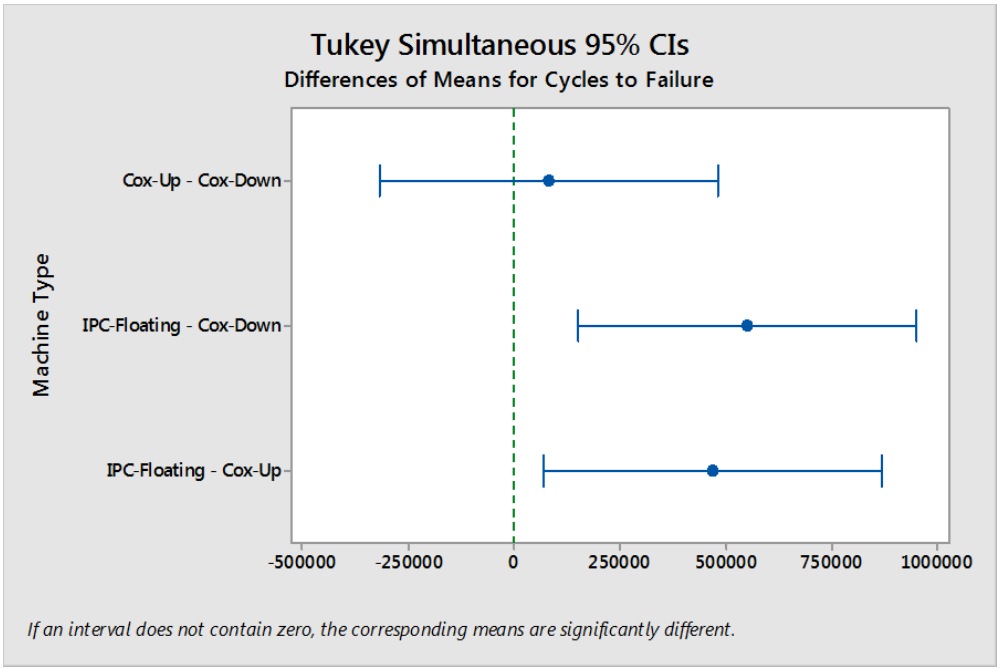
Comparisons for Cycles to Failure

Tukey Pairwise Comparisons: Response = Cycles to Failure, Term = Machine Type

```
Grouping Information Using the Tukey Method and 95% Confidence

Machine Type  N     Mean  Grouping
IPC-Floating  6  1129375  A
Cox-Up        6   661887         B
Cox-Down      6   579907         B

Means that do not share a letter are significantly different.
```


Tukey Simultaneous 95% CIs
Differences of Means for Cycles to Failure
Machine Type
Cox-Up - Cox-Down
IPC-Floating - Cox-Down
IPC-Floating - Cox-Up
-500000
-250000
0
250000
500000
750000
1000000
If an interval does not contain zero, the corresponding means are significantly different.