

# RESULTS - HI-POZZ®

		HIGH PERFORMANCE MIX DESIGNS AND RESULTS		SHOTCRETE MIX DESIGNS AND RESULTS		
MIX NO.		1 HP 66311	2 HP Silica Fume - Typical	3 Shotcrete	4 Shotcrete	5 Shotcrete
Type of Mix						
Description		HI-POZZ		HI-POZZ	HI-POZZ	FA & HI- POZZ
GP Cement	(kg/m <sup>3</sup> )	380	370	362	356	368
Fly ash fine	(kg/m <sup>3</sup> )	50	43	0	0	10
Amorphous Silica	(kg/m <sup>3</sup> )	0	0	0	0	10
Other Pozzolan	(kg/m <sup>3</sup> )	30 HI-POZZ	39 CSF	40 HI-POZZ	30 HI-POZZ	20 HI-POZZ
Coarse agg	(kg/m <sup>3</sup> )	760	770	0	0	0
Fine agg	(kg/m <sup>3</sup> )	290	289	745	745	750
Coarse sand	(kg/m <sup>3</sup> )	580	587	667	687	667
Fine sand	(kg/m <sup>3</sup> )	90	96	380	395	385
HRWR	(ml/m <sup>3</sup> )	1143	1900	1900	1900	1900
WR	(ml/100kg)	300	300	1250	1250	1250
AEA	(ml/100kg)	0	0	0	0	0
Water Demand	(L/m <sup>3</sup> )	177	182	205	205	205
W/C ratio		0.38	0.40	0.51	0.52	0.50
<b>Fresh Properties</b>						
Slump	(mm)	75	80	70	65	65
Air content	(%)	1.5	1.1			
Density	(kg/m <sup>3</sup> )	2391	2381			
<b>Determination of Bleeding of Concrete</b>						
Bleeding	(%)	0.4	0.3			
<b>Setting Time of Fresh Concrete, Mortar and Grout</b>						
Initial set	hrs:mins	4:48	4:56			
Final set	hrs:mins	5:49	6:00			
<b>Compressive Strength</b>						
1	(MPa)	21.1	20.0			
3	(MPa)	40.0	40.0	34.5	32.5	32.0
7	(MPa)	46.7	45.5	42.5	46.0	41.0
28	(MPa)	61.9	68.5	57.0	59.0	60.5
56	(MPa)	71.1	72.5			
<b>Flexural strength</b>						
7	(MPa)	5.4	5.3			
28	(MPa)	7.0	6.2			
<b>Drying Shrinkage</b>						
7 Days	(microstrain)	340	320			
14 Days	(microstrain)	450	470			
21 Days	(microstrain)	530	570			
28 Days	(microstrain)	570	630			
56 Days	(microstrain)	670	720			
90 Days	(microstrain)	720	800			
<b>Chloride Permeability</b>						
28 Days	(Co)	2906	3744			

**HP** = High Performance. All results from accredited NATA laboratories.

All “typical” Silica Fume results are historical results from Tasmanian Silica Pty Ltd