



**We Commit. We Do.**  
 Golden Bay Cement  
 Portland Works  
 P. O. Box 1143  
 Whangarei 0140  
**NEW ZEALAND**  
 PH (09) 432 2656  
 FAX (09) 432 2822

# CERTIFICATE OF QUALITY

## TYPE GP Premium Portland Cement (Bulk Despatch)



Tests indicated as not accredited are outside the scope of the laboratory's accreditation.

Issued to: **Technical Manager - GBC Portland**

Test Report No: **10#193**

Code	Week Ending / Voyage	Specific Surface Area	Normal Consistency	Initial Set	Final Set	Soundness	Compressive Strength						Free Lime	Sodium Equivale (NaEq)	Sulphur Trioxide (SO3)	
							ISO-CEN			Concrete						
							3 days	7 days	28 days	Slump	3 days	7 days				28 days
Mean		337	27.5	137	03:44	2	31.4	42.7	61.5	98.3	22.3	27.7	35.4	1.3	0.54	2.1
Standard Deviation		10	0.2	23	00:21	1	1.5	2.3	1.5	3.3	1.9	2.3	3.1	0.2	0.03	0.1
Min		325	27.1	105	03:00	1	28.3	38.5	59.3	90.0	19.1	24.1	29.7	0.9	0.50	2.0
Max		355	27.9	195	04:15	2	34.4	46.4	63.8	100.0	25.8	31.2	38.7	1.6	0.60	2.2
NZS 3122:2009 Requirements				45 min	06:00 max	5 max		35.0 min	45.0 min							3.5 max
Units		m2/kg	%	minutes	hrs:mins	mm	MPa	MPa	MPa	mm	MPa	MPa	MPa	%	%	%
100825-449-GP	25/08/10	350	27.2	135	03:30	#	30.7			100	23.1			#	0.54	2.0
100820-325-GP	20/08/10	325	27.4	120	03:45	2	32.2	45.7						#	0.55	2.0
100816-264-GP	16/08/10	335	27.5	105	03:45	2	33.5	45.6		100	24.4	27.6		#	0.52	2.0
100812-088-GP	12/08/10	345	27.3	105	03:30	1	34.4	46.4						1.2	0.52	2.1
100807-932-GP	07/08/10	335	27.3	105	03:30	1	32.9	45.4		90	21.4	29.7		1.5	0.56	2.0
100805-593-GP	05/08/10	350	27.4	105	03:15	2	31.7	46.1						1.4	0.50	2.0
100802-599-GP	02/08/10	350	27.4	120	03:00	1	32.5	44.9		95	25.8	31.2		0.9	0.51	2.0
100730-592-GP	30/07/10	355	27.4	120	03:15	1	31.5	44.9						1.2	0.51	2.0
100728-147-GP	28/07/10	345	27.4	135	04:00	1	30.2	43.4	61.7	95	22.0	29.5	37.7	1.4	0.52	2.0
100723-891-GP	23/07/10	325	27.1	150	03:45	2	30.6	41.4	62.4	100	20.0	27.6	36.6	1.3	0.51	2.1
100715-583-GP	15/07/10	345	27.3	165	04:00	2	29.4	41.6	62.9	100	23.1	27.8	38.7	1.3	0.51	2.1
100711-318-GP	11/07/10	335	27.6	195	04:00	2	28.3	40.8	59.3					1.3	0.51	2.1
100708-314-GP	08/07/10	330	27.8	165	04:00	2	30.1	41.6	60.8	100	21.3	24.9	34.7	1.3	0.53	2.1
100701-973-GP	01/07/10	325	27.5	135	03:30	1	32.5	43.8	61.3					1.0	0.56	2.1
100628-751-GP	28/06/10	330	27.7	165	03:30	1	33.2	43.3	60.6	100	23.9	29.1	37.9	1.1	0.53	2.1
100626-498-GP	26/06/10	325	27.5	150	03:15	1	32.7	40.2	60.1					1.2	0.53	2.2
100623-505-GP	23/06/10	325	27.8	165	03:30	2	29.7	39.1	59.6					1.4	0.51	2.0
100620-166-GP	20/06/10	345	27.8	135	04:00	2	31.0	43.1	63.4					1.4	0.54	2.2
100618-101-GP	18/06/10	340	27.7	150	04:15	1	30.7	40.1	61.7	100	19.1	24.1	32.2	1.2	0.55	2.0
100613-753-GP	13/06/10	325	27.7	120	03:45	2	29.2	41.9	63.6					1.5	0.57	2.1
100610-756-GP	10/06/10	350	27.7	120	03:45	2	32.8	42.4	62.1	100	21.2	25.6	29.7	1.6	0.57	2.2
100604-581-GP	04/06/10	350	27.7	150	04:00	2	31.3	43.0	63.8					1.4	0.60	2.1
100602-345-GP	02/06/10	330	27.9	135	04:15	1	31.6	39.8	60.35					1.3	0.58	2.2
100529-342-GP	29/05/10	330	27.8	150	04:15	2	30.8	38.5	59.4	100	22.5		36.1	1.1	0.58	2.1
100525-028-GP	25/05/10	330	27.8	135	04:15	1	31.4	41.1	61.8					1.1	0.53	2.1

The above samples were tested as received in accordance with the current terms of accreditation and methods stated in NZS 3122:2009 with the exception of:

- Chemical Analysis to ASTM C114:2007
- Concrete Compressive Strength test results outside the scope of accreditation

Sample Test result repeated

Sample Tested Outside of the Standard Test Requirement

# No result available at time of certificate issue

**This Report must not be reproduced except in full**

Jim White  
 Quality System, Co-ordinator

Date issued: 03/09/10

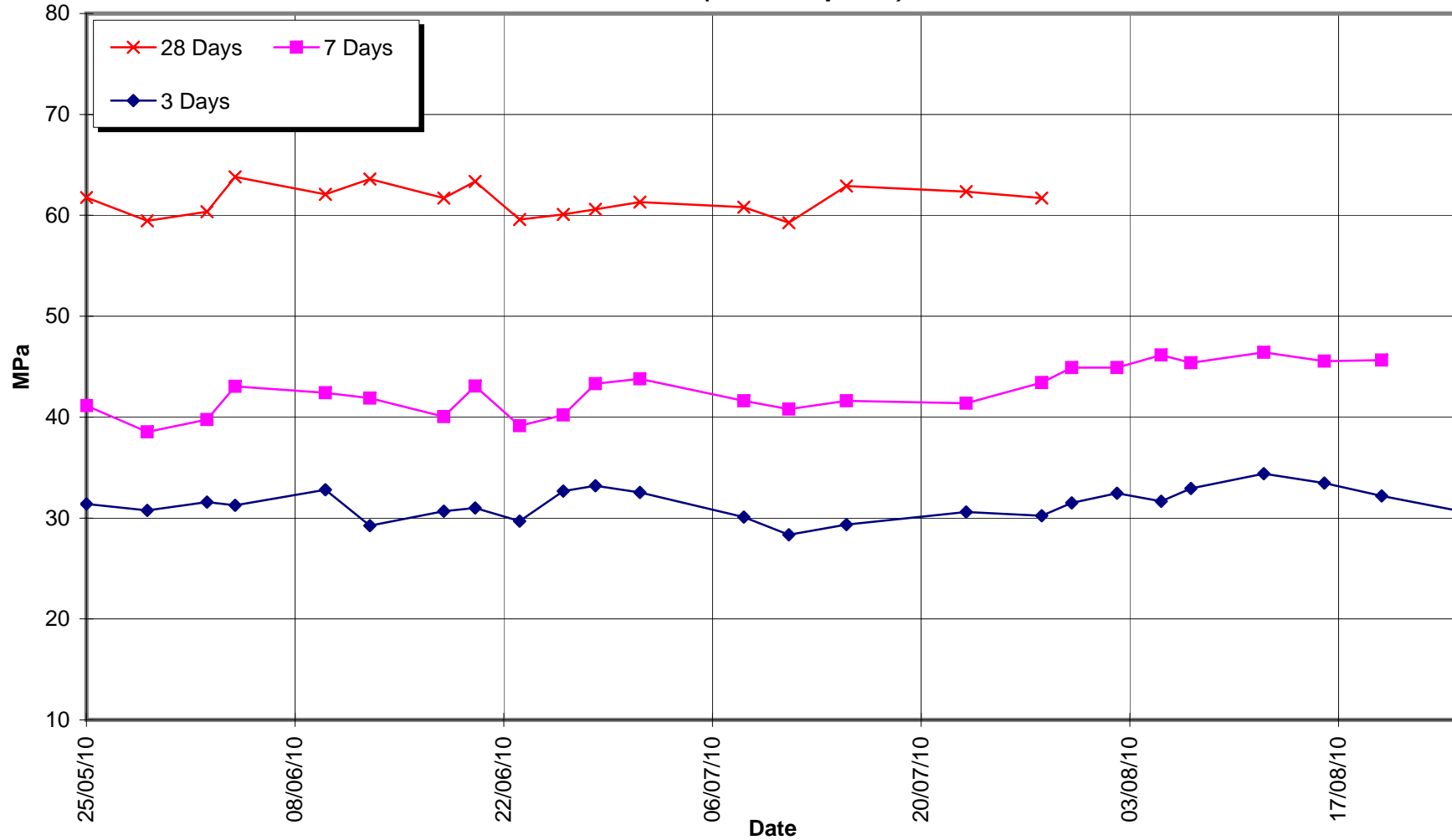


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## Premium Portland Cement Type GP



### Compressive Strength ISO-CEN Mortar (Bulk Despatch)





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## Compressive Strength Concrete (Bulk Despatch)

