Cement Circular

Issue No. : 1/2025

Date : 07-Mar-2025

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Test results for the following cementitious materials

* The names of brands/ manufacturers are based on the information provided by the suppliers.

Also named as "China Resources Cement 華潤水泥" in Cement Circular Issue No. 4/2015 and before.

For cementitious materials not included in the Cement Circular, ER may request PWCL to carry out test.

The above test results were uploaded to CEDD's web-site of **https://www.cedd.gov.hk/eng/public-services-forms/geotechnical/laboratory-testing/public-works-laboratories/index.html**

Should you have any questions regarding this Circular, please contact PTO/Lab2, Mr. H.L.Li, at telephone number 2305 1275, or submit your questions in writing to the Public Works Central Laboratory Building, 2B Cheung Yip Street, Kowloon Bay, Kowloon, Hong Kong (Attn: PTO/Lab2).

1 Asano / Taiheiyo Cement Corporation **Issue No. : 1/2025**

(Portland Cement, Strength Class 52.5N)

Laboratory Reference		2400001, 2400002	2400029, 2400030	2400061, 2400062	2400089, 2400090	2400117, 2400118	2400149, 2400150	25B0001, 25B0002	BS EN 197-1:2011
Date of Sample Received		3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	Strength Class 52.5N
Country of Origin Stated By Client		Japan	Japan	Japan	Japan	Japan	Japan	Japan	Specification
Physical Properties									
Density	(kg/m^3)	3140	3140	3150	3140	3150	3110	3130	Not specified
Fineness : Specific surface	(cm^2/g)	3450	3580	3420	3440	3500	3330	3370	Not specified
Consistence : Standard consistence	(%)	27.5	27.5	27.5	27.5	27.0	27.5	27.5	Not specified
Setting Time : Initial setting time	(min)	170	185	170	180	185	185	170	Min.45 min
Final setting time	(min)	225	240	225	240	240	240	225	Not specified
Soundness (Le Chatelier) : Expansion	(mm)	0.5	0.5	0.5	0.0	0.0	0.0	0.0	Max.10 mm
Compressive Strength (broken mortar prism) :									
Average 2 days strength	(MPa)	26.2	26.3	23.2	23.4	24.2	27.0	26.1	Min. 20 MPa
Average 28 days strength	(MPa)	66.8	67.1	64.4	63.0	66.7	67.4	64.6	Min. 52.5 MPa
Flexural Strength (mortar prism) :									
Average 2 days strength	(MPa)	5.6	5.1	5.0	4.8	4.9	4.9	4.7	Not specified
Average 28 days strength	(MPa)	8.4	9.2	8.5	8.9	9.6	9.4	8.8	Not specified
Chemical Composition									
Observed Mass Loss-on-ignition	(%)	2.8	2.2	2.9	2.3	2.3	1.9	2.0	Max. 5.0%
Insoluble Residue	(%)	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	Max. 5.0%
Sulphate Content, expressed as SO_3	(%)	1.9	1.7	2.0	2.1	1.9	2.0	2.1	Max. 4.0%
Chloride Content	(%)	0.03	0.02	0.03	0.01	0.03	0.01	0.02	Max. 0.10%
K_2O	(%)	0.39	0.41	0.39	0.77	0.36	0.34	0.35	---
Na_2O	(%)	0.27	0.26	0.24	0.12	0.36	0.22	0.31	---
Total Alkali (Na_2O Eq.)	(%)	0.53	0.53	0.49	0.62	0.60	0.44	0.53	---

Laboratory Reference		2400003, 2400004	2400031, 2400032	2400063, 2400064	2400091, 2400092	2400119, 2400120	2400151, 2400152	25B0003, 25B0004	BS EN 197-1:2011
Date of Sample Received		3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	Strength Class 52.5N
Country of Origin Stated By Client		Taiwan, China	Taiwan, China	Taiwan, China	Taiwan, China	China	China	China	Specification
Physical Properties									
Density	(kg/m^3)	3100	3090	3120	3140	3130	3110	3120	Not specified
Fineness : Specific surface	(cm^2/g)	3550	3900	3580	3510	3570	3430	3410	Not specified
Consistence : Standard consistence	(%)	27.5	28.0	27.5	27.5	27.0	27.0	27.0	Not specified
Setting Time : Initial setting time	(min)	180	150	175	160	185	190	170	Min.45 min
Final setting time	(min)	225	225	225	210	225	240	225	Not specified
Soundness (Le Chatelier) : Expansion	(mm)	0.5	0.5	0.0	0.0	0.0	1.0	0.0	Max.10 mm
Compressive Strength (broken mortar prism) :									
Average 2 days strength	(MPa)	29.6	32.2	28.5	26.9	26.6	28.1	27.3	Min. 20 MPa
Average 28 days strength	(MPa)	58.8	62.0	60.7	55.7	63.8	65.2	63.3	Min. 52.5 MPa
Flexural Strength (mortar prism) :									
Average 2 days strength	(MPa)	5.2	5.3	5.0	4.8	4.9	5.2	4.8	Not specified
Average 28 days strength	(MPa)	8.5	8.8	9.0	8.4	8.9	8.6	8.2	Not specified
Chemical Composition									
Observed Mass Loss-on-ignition	(%)	3.2	2.9	3.0	2.8	2.8	2.6	2.7	Max. 5.0%
Insoluble Residue	(%)	0.7	0.7	0.6	1.2	0.9	0.6	0.9	Max. 5.0%
Sulphate Content, expressed as SO_3	(%)	2.7	2.5	2.6	3.1	2.7	2.8	2.6	Max. 4.0%
Chloride Content	(%)	0.03	0.05	0.04	0.04	0.04	0.04	0.03	Max. 0.10%
K_2O	(%)	0.78	0.83	0.74	0.76	0.45	0.81	0.54	---
Na_2O	(%)	0.16	0.11	0.13	0.12	0.17	0.11	0.11	---
Total Alkali (Na_2O Eq.)	(%)	0.68	0.66	0.62	0.62	0.46	0.64	0.46	---

Laboratory Reference			2400005, 2400006	2400033, 2400034	2400065, 2400066	2400093, 2400094	2400121, 2400122	2400153, 2400154	25B0005, 25B0006	BS EN 197-1:2011
Date of Sample Received			3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	Strength Class 52.5N
Country of Origin Stated By Client			China	China	China	China	China	China	China	Specification
Physical Properties										
Density		(kg/m^3)	3120	3130	3130	3100	3130	3110	3150	Not specified
Fineness :	Specific surface	(cm^2/g)	3700	3790	3790	3760	3590	3470	3580	Not specified
Consistence :	Standard consistence	(%)	27.5	27.0	27.0	27.0	27.0	27.0	27.0	Not specified
Setting Time :	Initial setting time	(min)	170	160	195	155	170	170	150	Min.45 min
	Final setting time	(min)	225	210	225	195	225	225	180	Not specified
Soundness (Le Chatelier) : Expansion		(mm)	0.0	0.0	0.0	0.0	0.0	0.5	1.0	Max.10 mm
Compressive Strength (broken mortar prism) :										
	Average 2 days strength	(MPa)	29.1	26.0	24.7	23.9	23.3	24.4	25.2	Min. 20 MPa
	Average 28 days strength	(MPa)	58.8	61.5	64.5	61.8	62.2	64.2	61.6	Min. 52.5 MPa
Flexural Strength (mortar prism) :										
	Average 2 days strength	(MPa)	5.9	4.4	5.1	4.7	4.5	4.6	4.7	Not specified
	Average 28 days strength	(MPa)	7.8	9.1	7.8	8.0	7.9	7.1	7.3	Not specified
Chemical Composition										
Observed Mass Loss-on-ignition		(%)	1.8	1.5	2.1	2.0	2.0	2.4	1.1	Max. 5.0%
Insoluble Residue		(%)	0.7	<0.5	<0.5	0.8	1.5	<0.5	<0.5	Max. 5.0%
Sulphate Content, expressed as SO_3		(%)	1.7	1.3	1.6	1.8	1.6	1.5	1.8	Max. 4.0%
Chloride Content		(%)	0.05	0.04	0.04	0.03	0.04	0.04	0.04	Max. 0.10%
K_2O		(%)	0.55	0.44	0.43	0.42	0.46	0.41	0.55	---
Na_2O		(%)	0.13	0.12	0.15	0.15	0.17	0.13	0.13	---
Total Alkali (Na_2O Eq.)		(%)	0.49	0.41	0.43	0.43	0.47	0.40	0.49	---

Laboratory Reference			2400007, 2400008	2400035, 2400036	2400067, 2400068	2400095, 2400096	2400123, 2400124	2400155, 2400156	25B0007, 25B0008	BS EN 197-1:2011 Strength Class 52.5N
Date of Sample Received			3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	
Country of Origin Stated By Client			Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Specification
Physical Properties										
Density		(kg/m^3)	3100	3110	3110	3100	3120	3070	3070	Not specified
Fineness :	Specific surface	(cm^2/g)	3780	3660	3800	3800	3570	3550	3580	Not specified
Consistence :	Standard consistence	(%)	27.0	28.0	27.5	27.0	27.0	27.5	27.5	Not specified
Setting Time :	Initial setting time	(min)	130	140	115	110	130	130	115	Min.45 min
	Final setting time	(min)	165	165	165	150	165	195	165	Not specified
Soundness (Le Chatelier) : Expansion		(mm)	0.5	1.0	0.0	0.0	0.5	0.5	0.5	Max.10 mm
Compressive Strength (broken mortar prism) :										
	Average 2 days strength	(MPa)	22.8	24.7	22.4	21.3	21.7	24.0	23.6	Min. 20 MPa
	Average 28 days strength	(MPa)	62.5	60.7	59.9	55.9	59.6	63.3	63.9	Min. 52.5 MPa
Flexural Strength (mortar prism) :										
	Average 2 days strength	(MPa)	4.8	4.4	4.5	4.2	4.6	4.7	4.7	Not specified
	Average 28 days strength	(MPa)	8.2	7.8	8.3	8.3	7.3	8.2	8.4	Not specified
Chemical Composition										
Observed Mass Loss-on-ignition		(%)	2.8	2.9	2.7	2.8	2.9	3.1	2.8	Max. 5.0%
Insoluble Residue		(%)	1.2	0.7	1.3	1.3	1.3	1.0	0.9	Max. 5.0%
Sulphate Content, expressed as SO_3		(%)	2.3	2.3	2.4	3.2	2.2	2.4	2.3	Max. 4.0%
Chloride Content		(%)	<0.01	0.01	0.01	<0.01	0.01	0.01	0.01	Max. 0.10%
K_2O		(%)	0.65	0.72	0.56	0.56	0.66	0.67	0.63	---
Na_2O		(%)	0.11	0.1	0.14	<0.1	0.15	0.11	0.12	---
Total Alkali (Na_2O Eq.)		(%)	0.54	0.58	0.51	0.45	0.58	0.55	0.53	---

Laboratory Reference			2400009, 2400010	2400037, 2400038	2400069, 2400070	2400097, 2400098	2400125, 2400126	2400157, 2400158	25B0009, 25B0010	BS EN 197-1:2011
Date of Sample Received			3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	Strength Class 52.5N
Country of Origin Stated By Client			Japan	Japan	Japan	Japan	Japan	Japan	Japan	Specification
Physical Properties										
Density		(kg/m^3)	3150	3150	3140	3120	3140	3130	3110	Not specified
Fineness :	Specific surface	(cm^2/g)	3550	3350	3570	3560	3660	3390	3350	Not specified
Consistence :	Standard consistence	(%)	26.5	26.0	27.0	26.5	27.0	27.0	27.0	Not specified
Setting Time :	Initial setting time	(min)	160	155	150	160	180	160	150	Min.45 min
	Final setting time	(min)	210	210	210	210	225	225	210	Not specified
Soundness (Le Chatelier) : Expansion		(mm)	0.0	0.5	0.5	0.0	0.0	0.5	0.0	Max.10 mm
Compressive Strength (broken mortar prism) :										
	Average 2 days strength	(MPa)	25.6	22.7	29.7	25.7	25.2	24.3	25.4	Min. 20 MPa
	Average 28 days strength	(MPa)	60.8	60.9	66.7	62.5	62.7	66.0	64.7	Min. 52.5 MPa
Flexural Strength (mortar prism) :										
	Average 2 days strength	(MPa)	4.8	4.3	5.5	4.8	4.9	4.7	5.0	Not specified
	Average 28 days strength	(MPa)	8.7	8.9	8.4	8.8	9.1	9.1	8.7	Not specified
Chemical Composition										
Observed Mass Loss-on-ignition		(%)	3.0	2.9	2.9	2.6	2.8	2.7	2.7	Max. 5.0%
Insoluble Residue		(%)	<0.5	<0.5	<0.5	0.7	1.3	<0.5	<0.5	Max. 5.0%
Sulphate Content, expressed as SO_3		(%)	2.0	1.9	2.2	2.3	2.1	2.3	2.2	Max. 4.0%
Chloride Content		(%)	0.03	0.02	0.04	0.02	0.03	0.03	0.03	Max. 0.10%
K_2O		(%)	0.41	0.41	0.52	0.44	0.46	0.44	0.42	---
Na_2O		(%)	0.29	0.24	0.10	0.26	0.28	0.24	0.25	---
Total Alkali (Na_2O Eq.)		(%)	0.56	0.51	0.44	0.55	0.58	0.54	0.53	---

Laboratory Reference			2400011, 2400012	2400039, 2400040	2400071, 2400072	2400099, 2400100	2400127, 2400128	2400159, 2400160	25B0011, 25B0012	BS EN 197-1:2011
Date of Sample Received			3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	Strength Class 52.5N
Country of Origin Stated By Client			China	China	China	China	China	China	China	Specification
Physical Properties										
Density		(kg/m^3)	3160	3160	3170	3130	3150	3150	3120	Not specified
Fineness :	Specific surface	(cm^2/g)	3870	3990	3920	3940	3950	3790	3850	Not specified
Consistence :	Standard consistence	(%)	26.5	26.0	27.0	26.5	27.0	28.0	26.0	Not specified
Setting Time :	Initial setting time	(min)	140	170	150	140	145	185	130	Min.45 min
	Final setting time	(min)	180	210	195	195	180	225	195	Not specified
Soundness (Le Chatelier) : Expansion		(mm)	0.5	1.0	0.5	0.5	0.0	0.0	0.0	Max.10 mm
Compressive Strength (broken mortar prism) :										
	Average 2 days strength	(MPa)	35.2	30.7	31.6	26.8	27.1	34.3	31.4	Min. 20 MPa
	Average 28 days strength	(MPa)	61.3	58.2	58.8	60.2	60.6	59.7	62.8	Min. 52.5 MPa
Flexural Strength (mortar prism) :										
	Average 2 days strength	(MPa)	6.1	5.1	5.5	5.3	5.0	5.6	5.5	Not specified
	Average 28 days strength	(MPa)	8.4	8.2	8.2	8.4	8.3	8.0	8.4	Not specified
Chemical Composition										
Observed Mass Loss-on-ignition		(%)	2.0	1.9	1.8	1.2	1.3	1.0	1.6	Max. 5.0%
Insoluble Residue		(%)	0.6	<0.5	<0.5	0.6	<0.5	<0.5	0.6	Max. 5.0%
Sulphate Content, expressed as SO_3		(%)	2.9	2.4	2.9	2.5	2.9	3.2	3.1	Max. 4.0%
Chloride Content		(%)	0.02	0.04	0.03	0.02	0.03	0.02	0.02	Max. 0.10%
K_2O		(%)	0.67	0.64	0.70	0.70	0.72	0.71	0.61	---
Na_2O		(%)	0.12	<0.1	<0.1	<0.1	0.11	<0.1	<0.1	---
Total Alkali (Na_2O Eq.)		(%)	0.56	0.48	0.50	0.51	0.58	0.54	0.47	---

Laboratory Reference			2400013, 2400014	2400041, 2400042	2400073, 2400074	2400101, 2400102	2400129, 2400130	2400161, 2400162	25B0013, 25B0014	BS EN 197-1:2011
Date of Sample Received			3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	Strength Class 52.5N
Country of Origin Stated By Client			China	China	China	China	China	China	China	Specification
Physical Properties										
Density		(kg/m^3)	3130	3140	3150	3130	3160	3140	3120	Not specified
Fineness :	Specific surface	(cm^2/g)	4220	4230	4160	4190	4040	3900	4010	Not specified
Consistence :	Standard consistence	(%)	26.0	27.0	27.0	27.0	27.0	27.0	27.5	Not specified
Setting Time :	Initial setting time	(min)	150	150	135	155	150	160	155	Min.45 min
	Final setting time	(min)	195	225	180	210	195	195	180	Not specified
Soundness (Le Chatelier) : Expansion		(mm)	1.0	1.0	0.0	0.5	0.0	0.5	0.0	Max.10 mm
Compressive Strength (broken mortar prism) :										
	Average 2 days strength	(MPa)	25.9	26.6	28.2	24.5	25.8	26.8	27.4	Min. 20 MPa
	Average 28 days strength	(MPa)	64.7	65.4	66.1	63.6	63.7	68.6	66.4	Min. 52.5 MPa
Flexural Strength (mortar prism) :										
	Average 2 days strength	(MPa)	4.4	4.9	5.0	5.0	5.3	5.0	5.0	Not specified
	Average 28 days strength	(MPa)	8.5	8.8	8.4	8.2	8.5	8.0	7.8	Not specified
Chemical Composition										
Observed Mass Loss-on-ignition		(%)	2.8	1.9	2.0	1.9	2.0	2.3	2.1	Max. 5.0%
Insoluble Residue		(%)	0.9	<0.5	<0.5	0.9	0.8	0.7	<0.5	Max. 5.0%
Sulphate Content, expressed as SO_3		(%)	2.3	2.3	2.2	2.5	2.3	2.4	2.4	Max. 4.0%
Chloride Content		(%)	0.03	0.04	0.05	0.04	0.05	0.03	0.05	Max. 0.10%
K_2O		(%)	0.36	0.31	0.41	0.36	0.41	0.43	0.40	---
Na_2O		(%)	0.15	<0.1	0.12	0.12	0.17	<0.1	0.1	---
Total Alkali (Na_2O Eq.)		(%)	0.38	0.29	0.39	0.36	0.44	0.34	0.37	---

Laboratory Reference		2400015, 2400016	2400043, 2400044	2400075, 2400076	2400103, 2400104	2400131, 2400132	2400163, 2400164	25B0015, 25B0029	BS3892:Part 1: 1997
Date of Sample Received		3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	
Country of Origin Stated By Client		Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Specification
Physical Properties									
Fineness	(%)	9.5	9.4	7.1	8.8	7.7	8.1	6.9	Not more than 12%
Particle Density	(kg/m^3)	2650	2590	2610	2500	2620	2620	2550	Not less than 2000 kg/m^3
Water Requirement	(%)	90	90	90	90	90	88	89	^Note (1)
Strength Factor	---	0.92	0.90	0.90	0.91	1.06	1.08	0.90	^Note (1)
Standard Consistence	(%)	24.0	24.5	24.5	25.0	24.5	25.0	25.0	---
Initial Setting Time	(min)	250	225	225	215	220	190	245	Not less than the initial setting time of the Portland cement used
Soundness	(mm)	0.5	0.0	0.0	0.5	0.0	0.0	0.0	Not more than 10 mm
Portland Cement used									
Brand		Champion	Champion	Champion	Champion	Champion	Champion	Champion	---
Lab. Reference No.		2300119	2300119	2400031, 2400032	2400031, 2400032	2400091, 2400092	2400091, 2400092	2400151, 2400152	---
Initial Setting Time	(min)	170	170	150	150	160	160	190	---
Chemical Composition									
Moisture Content	(%)	0.2	0.1	0.3	0.1	<0.1	<0.1	<0.1	Not more than 0.5%
Loss-on-ignition	(%)	0.6	0.6	0.8	1.1	0.7	0.6	0.7	Not more than 7%
Sulphate Content, expressed as SO_3	(%)	1.2	1.3	1.3	1.5	1.6	1.4	1.2	Not more than 2.0%
Chloride Content	(%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	Not more than 0.1%
Calcium Oxide Content	(%)	14.0	14.0	10.8	13.1	12.1	12.7	9.6	Not more than 10.0%
K_2O	(%)	1.2	1.2	1.4	1.2	1.5	1.4	1.7	---
Na_2O	(%)	2.0	1.7	2.0	2.1	1.8	1.5	1.6	---
Total Alkali (Na_2O Eq.)	(%)	2.8	2.5	3.0	2.8	2.7	2.4	2.7	---

^Note: (1) In accordance with GS16.07(b), the criteria for water requirement and strength factor at 28 days shall not apply, but the values of water requirement and strength factor at 28 days shall be reported.

Laboratory Reference		2400017, 2400018	2400045, 2400046	2400077, 2400078	2400105, 2400106	2400133, 2400134	2400165, 2400166	25B0017, 25B0018	BS3892:Part 1: 1997
Date of Sample Received		3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	
Country of Origin Stated By Client		China	China	China	China	China	China	China	Specification
Physical Properties									
Fineness	(%)	10.1	4.9	5.3	16.6	2.1	3.6	10.8	Not more than 12%
Particle Density	(kg/m^3)	2400	2490	2500	2390	2430	2450	2450	Not less than 2000 kg/m^3
Water Requirement	(%)	93	89	89	91	90	91	99	^Note (1)
Strength Factor	---	0.86	0.88	0.83	0.85	0.92	0.93	0.87	^Note (1)
Standard Consistence	(%)	26.0	26.0	25.5	26.0	27.0	27.0	29.0	---
Initial Setting Time	(min)	260	260	285	240	280	230	215	Not less than the initial setting time of the Portland cement used
Soundness	(mm)	0.5	0.5	0.5	0.0	0.0	0.5	0.0	Not more than 10 mm
Portland Cement used									
Brand		Champion	Champion	Champion	Champion	Champion	Champion	Champion	---
Lab. Reference No.		2300119	2300119	2400031, 2400032	2400031, 2400032	2400091, 2400092	2400091, 2400092	2400151, 2400152	---
Initial Setting Time	(min)	170	170	150	150	160	160	190	---
Chemical Composition									
Moisture Content	(%)	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	Not more than 0.5%
Loss-on-ignition	(%)	<0.5	0.7	1.1	1.4	2.2	1.1	<0.5	Not more than 7%
Sulphate Content, expressed as SO_3	(%)	<0.5	0.8	0.5	0.8	0.6	<0.5	0.5	Not more than 2.0%
Chloride Content	(%)	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	Not more than 0.1%
Calcium Oxide Content	(%)	13.0	9.1	7.1	7.3	7.9	6.6	14.6	Not more than 10.0%
K_2O	(%)	1.4	1.5	1.7	1.5	1.5	1.9	0.8	---
Na_2O	(%)	1.6	1.0	1.1	1.2	1.1	1.0	0.5	---
Total Alkali (Na_2O Eq.)	(%)	2.5	2.0	2.2	2.2	2.1	2.3	1.0	---

^Note: (1) In accordance with GS16.07(b), the criteria for water requirement and strength factor at 28 days shall not apply, but the values of water requirement and strength factor at 28 days shall be reported.

Laboratory Reference		2400019, 2400020	2400047, 2400048	2400079, 2400080	2400107, 2400108	2400135, 2400136	2400167, 2400168	25B0019, 25B0030	BS3892:Part 1: 1997
Date of Sample Received		3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	
Country of Origin Stated By Client		Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Specification
Physical Properties									
Fineness	(%)	9.8	10.6	10.1	8.3	8.7	12.3	10.3	Not more than 12%
Particle Density	(kg/m^3)	2390	2410	2440	2360	2360	2340	2420	Not less than 2000 kg/m^3
Water Requirement	(%)	95	93	96	96	96	96	96	^Note (1)
Strength Factor	---	0.75	0.77	0.75	0.80	0.90	0.90	0.83	^Note (1)
Standard Consistence	(%)	28.5	28.5	29.0	29.0	29.0	28.0	28.0	---
Initial Setting Time	(min)	250	225	230	190	195	225	250	Not less than the initial setting time of the Portland cement used
Soundness	(mm)	1.0	0.0	0.5	0.0	0.0	0.0	0.5	Not more than 10 mm
Portland Cement used									
Brand		Champion	Champion	Champion	Champion	Champion	Champion	Champion	---
Lab. Reference No.		2300119	2300119	2400031, 2400032	2400031, 2400032	2400091, 2400092	2400091, 2400092	2400151, 2400152	---
Initial Setting Time	(min)	170	170	150	150	160	160	190	---
Chemical Composition									
Moisture Content	(%)	0.1	0.2	0.3	0.2	0.1	<0.1	<0.1	Not more than 0.5%
Loss-on-ignition	(%)	2.0	2.1	2.3	1.8	1.5	1.3	1.4	Not more than 7%
Sulphate Content, expressed as SO_3	(%)	0.6	0.6	0.6	<0.5	0.60	0.50	0.60	Not more than 2.0%
Chloride Content	(%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	Not more than 0.1%
Calcium Oxide Content	(%)	5.6	6.6	7.0	5.1	5.2	7.1	7.0	Not more than 10.0%
K_2O	(%)	1.2	1.2	0.9	0.9	0.9	1.0	1.0	---
Na_2O	(%)	1.2	1.1	0.8	0.6	0.6	1.0	1.5	---
Total Alkali (Na_2O Eq.)	(%)	2.1	1.9	1.4	1.2	1.2	1.6	2.2	---

^Note: (1) In accordance with GS16.07(b), the criteria for water requirement and strength factor at 28 days shall not apply, but the values of water requirement and strength factor at 28 days shall be reported.

Laboratory Reference		2400021, 2400022	2400049, 2400050	2400081, 2400082	2400109, 2400110	2400137, 2400138	2400169, 2400170	25B0021, 25B0031	BS3892:Part 1: 1997
Date of Sample Received		3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	
Country of Origin Stated By Client		China	China	China	China	China	China	China	Specification
Physical Properties									
Fineness	(%)	11.2	8.0	8.5	4.6	4.6	5.0	9.1	Not more than 12%
Particle Density	(kg/m^3)	2270	2470	2360	2470	2570	2450	2380	Not less than 2000 kg/m^3
Water Requirement	(%)	93	91	91	91	90	96	96	^Note (1)
Strength Factor	---	0.82	0.86	0.80	0.84	0.97	0.95	0.80	^Note (1)
Standard Consistence	(%)	27.0	26.0	26.0	25.5	25.5	28.0	28.0	---
Initial Setting Time	(min)	240	255	220	180	210	210	245	Not less than the initial setting time of the Portland cement used
Soundness	(mm)	0.5	0.5	0.5	0.0	0.0	0.0	0.5	Not more than 10 mm
Portland Cement used									
Brand		Champion	Champion	Champion	Champion	Champion	Champion	Champion	---
Lab. Reference No.		2300119	2300119	2400031, 2400032	2400031, 2400032	2400091, 2400092	2400091, 2400092	2400151, 2400152	---
Initial Setting Time	(min)	170	170	150	150	160	160	190	---
Chemical Composition									
Moisture Content	(%)	<0.1	<0.1	0.2	0.1	<0.1	0.1	<0.1	Not more than 0.5%
Loss-on-ignition	(%)	<0.5	<0.5	0.6	1.0	1.2	1.2	1.2	Not more than 7%
Sulphate Content, expressed as SO_3	(%)	<0.5	1.1	0.8	1.0	1.2	0.8	0.7	Not more than 2.0%
Chloride Content	(%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	Not more than 0.1%
Calcium Oxide Content	(%)	5.7	10.0	9.9	7.8	10.7	8.6	4.0	Not more than 10.0%
K_2O	(%)	1.5	1.3	1.1	1.5	1.4	1.0	2.2	---
Na_2O	(%)	1.3	0.9	1.6	1.4	0.9	1.5	1.2	---
Total Alkali (Na_2O Eq.)	(%)	2.3	1.7	2.3	2.4	1.8	2.2	2.7	---

^Note: (1) In accordance with GS16.07(b), the criteria for water requirement and strength factor at 28 days shall not apply, but the values of water requirement and strength factor at 28 days shall be reported.

Laboratory Reference		2400001, 2400002	2400003, 2400004	2400007, 2400008	2400009, 2400010	2400011, 2400012	2400013, 2400014	25B0001, 25B0002	BS EN 15167-1:2006
Date of Sample Received		3/1/2024	1/3/2024	7/5/2024	28/6/2024	4/9/2024	4/11/2024	2/1/2025	
Country of Origin Stated By Client		Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Hong Kong SAR, China	Specification
Physical Properties									
Standard Consistence	(%)	30.0	30.0	30.0	30.0	30.0	30.0	30.5	Not specified
Initial Setting Time	(min)	180	165	175	170	180	200	150	≦ twice of initial setting time for Portland cement used
Density	(kg/m^3)	2880	2870	2880	2860	2860	2870	2870	Not specified
Fineness : Specific surface	(m^2/kg)	472	487	491	486	479	491	504	≧ 275 m^2/kg
Activity Index :									
7 days	(%)	60	63	55	54	60	64	59	≧ 45 %
28 days	(%)	83	91	90	87	89	104	94	≧ 70 %
Portland Cement used									
Brand		Special Green Island	Special Green Island	Special Green Island	Special Green Island	Champion	Champion	Special Green Island	---
Lab. Reference No.		2300121	2300121	2400035, 2400036	2400035, 2400036	2400091, 2400092	2400091, 2400092	2400155, 2400156	---
Initial Setting Time	(min)	130	130	140	140	160	160	130	---
Chemical Composition									
Loss-on-ignition	(%)	1.2	1.3	1.5	<0.5	1.4	0.6	1.0	≦ 3.0%
Sulphate Content, expressed as SO_3	(%)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	≦ 2.5%
Chloride Content	(%)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	≦ 0.10%
Magnesium Oxide Content	(%)	5.8	5.6	5.9	5.2	5.4	5.0	5.7	≦ 18%
Moisture Content	(%)	<0.2	0.2	0.3	<0.2	0.3	<0.2	<0.2	≦ 1.0%
Sulphide Content	(%)	0.8	0.9	0.7	0.9	0.9	1.1	1.0	≦ 2.0%