

Cement Circular

Issue No. : 5/2025

Date : 10-Nov-2025

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Test results for the following cementitious materials

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* 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
(Portland Cement, Strength Class 52.5N)

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Laboratory Reference	2400117, 2400118	2400149, 2400150	25B0001, 25B0002	2500003, 2500004	2500034, 2500035	2500067, 2500068	2500103, 2500104	BS EN 197-1:2011 Strength Class 52.5N
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	6/5/2025	9/7/2025	5/9/2025	
Country of Origin Stated By Client	Japan	Japan	Japan	Japan	Japan	Japan	Japan	
Physical Properties								
Density (kg/m³)	3150	3110	3130	3150	3110	3140	3120	Not specified
Fineness : Specific surface (cm²/g)	3500	3330	3370	3370	3360	3760	3740	Not specified
Consistence : Standard consistence (%)	27.0	27.5	27.5	28.0	28.0	28.5	29.0	Not specified
Setting Time : Initial setting time (min)	185	185	170	185	165	165	185	Min.45 min
Final setting time (min)	240	240	225	255	225	225	240	Not specified
Soundness (Le Chatelier) : Expansion (mm)	0.0	0.0	0.0	1.0	0.5	1.0	1.0	Max.10 mm
Compressive Strength (broken mortar prism) :								
Average 2 days strength (MPa)	24.2	27.0	26.1	22.2	24.3	22.3	31.9	Min. 20 MPa
Average 28 days strength (MPa)	66.7	67.4	64.6	63.5	69.3	57.1	56.3	Min. 52.5 MPa
Flexural Strength (mortar prism) :								
Average 2 days strength (MPa)	4.9	4.9	4.7	5.1	4.6	5.7	6.7	Not specified
Average 28 days strength (MPa)	9.6	9.4	8.8	11.3	9.0	10.0	9.3	Not specified
Chemical Composition								
Observed Mass Loss-on-ignition (%)	2.3	1.9	2.0	2.1	2.1	2.4	2.7	Max. 5.0%
Insoluble Residue (%)	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	Max. 5.0%
Sulphate Content, expressed as SO ₃ (%)	1.9	2.0	2.1	2.0	2.1	2.0	1.9	Max. 4.0%
Chloride Content (%)	0.03	0.01	0.02	<0.01	<0.01	0.02	0.02	Max. 0.10%
K ₂ O (%)	0.36	0.34	0.35	0.34	0.42	0.38	0.36	---
Na ₂ O (%)	0.36	0.22	0.31	0.25	0.21	0.23	0.21	---
Total Alkali (Na ₂ O Eq.) (%)	0.60	0.44	0.53	0.47	0.49	0.48	0.45	---

2 Champion (一品牌水泥) / 台泥(英德)水泥有限公司
(Portland Cement, Strength Class 52.5N)

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Laboratory Reference	2400119, 2400120	2400151, 2400152	25B0003, 25B0004	2500005, 2500006	2500036, 2500037	2500069, 2500070	2500105, 2500106	BS EN 197-1:2011 Strength Class 52.5N
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	6/5/2025	9/7/2025	5/9/2025	
Country of Origin Stated By Client	China	China	China	China	China	China	China	
Physical Properties								
Density (kg/m³)	3130	3110	3120	3100	3120	3100	3090	Not specified
Fineness : Specific surface (cm²/g)	3570	3430	3410	3700	3690	4060	4110	Not specified
Consistence : Standard consistence (%)	27.0	27.0	27.0	27.5	27.5	28.5	29.0	Not specified
Setting Time : Initial setting time (min)	185	190	170	190	150	165	185	Min.45 min
Final setting time (min)	225	240	225	225	210	225	255	Not specified
Soundness (Le Chatelier) : Expansion (mm)	0.0	1.0	0.0	0.0	0.5	2.0	2.0	Max.10 mm
Compressive Strength (broken mortar prism) :								
Average 2 days strength (MPa)	26.6	28.1	27.3	33.1	31.0	30.5	33.2	Min. 20 MPa
Average 28 days strength (MPa)	63.8	65.2	63.3	63.6	63.0	57.4	53.8	Min. 52.5 MPa
Flexural Strength (mortar prism) :								
Average 2 days strength (MPa)	4.9	5.2	4.8	5.9	5.6	7.0	6.9	Not specified
Average 28 days strength (MPa)	8.9	8.6	8.2	8.4	9.2	9.6	9.8	Not specified
Chemical Composition								
Observed Mass Loss-on-ignition (%)	2.8	2.6	2.7	3.1	2.8	3.0	3.1	Max. 5.0%
Insoluble Residue (%)	0.9	0.6	0.9	0.6	0.8	0.7	0.9	Max. 5.0%
Sulphate Content, expressed as SO₃ (%)	2.7	2.8	2.6	2.8	2.7	3.0	2.5	Max. 4.0%
Chloride Content (%)	0.04	0.04	0.03	0.05	0.03	0.04	0.04	Max. 0.10%
K₂O (%)	0.45	0.81	0.54	0.80	0.74	0.78	0.70	---
Na₂O (%)	0.17	0.11	0.11	0.12	0.14	0.12	0.14	---
Total Alkali (Na₂O Eq.) (%)	0.46	0.64	0.46	0.65	0.63	0.63	0.60	---

3 Feng Jiang (峰江牌水泥) / 佛山市高明高力發水泥有限公司
(Portland Cement, Strength Class 52.5N)

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Laboratory Reference	2400121, 2400122	2400153, 2400154	25B0005, 25B0006	2500007, 2500008	2500038, 2500039	2500071, 2500072	2500107, 2500108	BS EN 197-1:2011 Strength Class 52.5N
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	6/5/2025	9/7/2025	5/9/2025	
Country of Origin Stated By Client	China	China	China	China	China	China	China	
Physical Properties								
Density (kg/m³)	3130	3110	3150	3160	3150	3130	3120	Not specified
Fineness : Specific surface (cm²/g)	3590	3470	3580	3480	3930	3920	3860	Not specified
Consistence : Standard consistence (%)	27.0	27.0	27.0	28.0	28.0	28.5	29.0	Not specified
Setting Time : Initial setting time (min)	170	170	150	125	125	205	200	Min.45 min
Final setting time (min)	225	225	180	165	180	270	270	Not specified
Soundness (Le Chatelier) : Expansion (mm)	0.0	0.5	1.0	2.0	1.0	1.0	2.0	Max.10 mm
Compressive Strength (broken mortar prism) :								
Average 2 days strength (MPa)	23.3	24.4	25.2	22.6	22.2	21.7	29.2	Min. 20 MPa
Average 28 days strength (MPa)	62.2	64.2	61.6	58.9	58.3	54.2	61.8	Min. 52.5 MPa
Flexural Strength (mortar prism) :								
Average 2 days strength (MPa)	4.5	4.6	4.7	5.4	5.4	5.7	5.6	Not specified
Average 28 days strength (MPa)	7.9	7.1	7.3	9.9	8.4	8.8	9.1	Not specified
Chemical Composition								
Observed Mass Loss-on-ignition (%)	2.0	2.4	1.1	1.5	1.0	1.4	1.2	Max. 5.0%
Insoluble Residue (%)	1.5	<0.5	<0.5	<0.5	<0.5	0.6	0.9	Max. 5.0%
Sulphate Content, expressed as SO₃ (%)	1.6	1.5	1.8	1.7	1.8	2.0	1.6	Max. 4.0%
Chloride Content (%)	0.04	0.04	0.04	0.03	0.02	0.04	0.03	Max. 0.10%
K₂O (%)	0.46	0.41	0.55	0.50	0.56	0.63	0.63	---
Na₂O (%)	0.17	0.13	0.13	0.13	0.15	0.12	0.13	---
Total Alkali (Na₂O Eq.) (%)	0.47	0.40	0.49	0.46	0.51	0.54	0.54	---

4 Golden Eagle (金鷹牌水泥), Special Green Island (青洲牌水泥), Emerald / Green Island Cement Co., Ltd.
(Portland Cement, Strength Class 52.5N)

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Laboratory Reference	2400123, 2400124	2400155, 2400156	25B0007, 25B0008	2500001, 2500002	2500040, 2500041	2500073, 2500074	2500109, 2500110	BS EN 197-1:2011 Strength Class 52.5N
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
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)	3120	3070	3070	3100	3100	3100	3050	Not specified
Fineness : Specific surface (cm ² /g)	3570	3550	3580	3500	3710	3740	3940	Not specified
Consistence : Standard consistence (%)	27.0	27.5	27.5	27.5	28.0	28.0	29.0	Not specified
Setting Time : Initial setting time (min)	130	130	115	115	110	150	140	Min.45 min
Final setting time (min)	165	195	165	150	165	210	195	Not specified
Soundness (Le Chatelier) : Expansion (mm)	0.5	0.5	0.5	0.0	0.0	1.0	1.0	Max.10 mm
Compressive Strength (broken mortar prism) :								
Average 2 days strength (MPa)	21.7	24.0	23.6	24.4	24.2	20.7	23.9	Min. 20 MPa
Average 28 days strength (MPa)	59.6	63.3	63.9	63.8	68.9	56.1	60.4	Min. 52.5 MPa
Flexural Strength (mortar prism) :								
Average 2 days strength (MPa)	4.6	4.7	4.7	4.6	4.7	5.3	5.6	Not specified
Average 28 days strength (MPa)	7.3	8.2	8.4	8.1	9.0	10.1	9.3	Not specified
Chemical Composition								
Observed Mass Loss-on-ignition (%)	2.9	3.1	2.8	1.6	2.8	3.0	2.0	Max. 5.0%
Insoluble Residue (%)	1.3	1.0	0.9	3.2	1.3	0.8	3.5	Max. 5.0%
Sulphate Content, expressed as SO ₃ (%)	2.2	2.4	2.3	2.4	2.4	2.4	2.2	Max. 4.0%
Chloride Content (%)	0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	Max. 0.10%
K ₂ O (%)	0.66	0.67	0.63	0.59	0.59	0.64	0.77	---
Na ₂ O (%)	0.15	0.11	0.12	0.15	0.17	0.14	0.12	---
Total Alkali (Na ₂ O Eq.) (%)	0.58	0.55	0.53	0.54	0.55	0.56	0.62	---

5 Onoda / Chichibu Onoda Cement Corporation
(Portland Cement, Strength Class 52.5N)

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Laboratory Reference	2400125, 2400126	2400157, 2400158	25B0009, 25B0010	2500009, 2500010	2500042, 2500043	2500075, 2500076	2500111, 2500112	BS EN 197-1:2011 Strength Class 52.5N
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
Country of Origin Stated By Client	Japan	Japan	Japan	Japan	Japan	Japan	Japan	
Physical Properties								
Density (kg/m³)	3140	3130	3110	3120	3120	3150	3110	Not specified
Fineness : Specific surface (cm²/g)	3660	3390	3350	3490	3380	3740	3750	Not specified
Consistence : Standard consistence (%)	27.0	27.0	27.0	27.0	26.5	28.0	29.0	Not specified
Setting Time : Initial setting time (min)	180	160	150	155	175	185	185	Min.45 min
Final setting time (min)	225	225	210	210	225	255	255	Not specified
Soundness (Le Chatelier) : Expansion (mm)	0.0	0.5	0.0	0.0	0.0	1.0	1.0	Max.10 mm
Compressive Strength (broken mortar prism) :								
Average 2 days strength (MPa)	25.2	24.3	25.4	26.8	26.7	27.0	30.8	Min. 20 MPa
Average 28 days strength (MPa)	62.7	66.0	64.7	63.7	67.0	56.9	60.3	Min. 52.5 MPa
Flexural Strength (mortar prism) :								
Average 2 days strength (MPa)	4.9	4.7	5.0	5.2	5.1	6.3	6.7	Not specified
Average 28 days strength (MPa)	9.1	9.1	8.7	8.8	9.9	8.9	10.4	Not specified
Chemical Composition								
Observed Mass Loss-on-ignition (%)	2.8	2.7	2.7	2.7	2.7	2.6	2.4	Max. 5.0%
Insoluble Residue (%)	1.3	<0.5	<0.5	<0.5	<0.5	0.9	1.0	Max. 5.0%
Sulphate Content, expressed as SO ₃ (%)	2.1	2.3	2.2	2.0	1.9	2.2	2.0	Max. 4.0%
Chloride Content (%)	0.03	0.03	0.03	0.03	0.02	0.04	0.04	Max. 0.10%
K ₂ O (%)	0.46	0.44	0.42	0.41	0.46	0.59	0.55	---
Na ₂ O (%)	0.28	0.24	0.25	0.27	0.21	<0.1	0.15	---
Total Alkali (Na ₂ O Eq.) (%)	0.58	0.54	0.53	0.54	0.51	0.48	0.51	---

6 Yue Xiu (粤秀牌水泥) / Guanzhou Zhujiang Cement Co., Ltd.
(Portland Cement, Strength Class 52.5N)

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Laboratory Reference	2400127, 2400128	2400159, 2400160	25B0011, 25B0012	2500011, 2500012	2500044, 2500045	2500077, 2500078	2500113, 2500114	BS EN 197-1:2011 Strength Class 52.5N
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
Country of Origin Stated By Client	China	China	China	China	China	China	China	
Physical Properties								
Density (kg/m³)	3150	3150	3120	3140	3130	3130	3090	Not specified
Fineness : Specific surface (cm²/g)	3950	3790	3850	3790	4110	4310	4310	Not specified
Consistence : Standard consistence (%)	27.0	28.0	26.0	26.5	28.0	28.0	29.0	Not specified
Setting Time : Initial setting time (min)	145	185	130	150	175	165	180	Min.45 min
Final setting time (min)	180	225	195	195	225	225	255	Not specified
Soundness (Le Chatelier) : Expansion (mm)	0.0	0.0	0.0	0.0	1.0	1.0	1.0	Max.10 mm
Compressive Strength (broken mortar prism) :								
Average 2 days strength (MPa)	27.1	34.3	31.4	32.8	24.6	38.1	30.1	Min. 20 MPa
Average 28 days strength (MPa)	60.6	59.7	62.8	62.2	63.8	55.3	65.3	Min. 52.5 MPa
Flexural Strength (mortar prism) :								
Average 2 days strength (MPa)	5.0	5.6	5.5	6.1	5.5	7.4	6.7	Not specified
Average 28 days strength (MPa)	8.3	8.0	8.4	8.7	9.4	9.0	10.5	Not specified
Chemical Composition								
Observed Mass Loss-on-ignition (%)	1.3	1.0	1.6	1.8	2.8	2.0	2.8	Max. 5.0%
Insoluble Residue (%)	<0.5	<0.5	0.6	0.5	<0.5	<0.5	1.5	Max. 5.0%
Sulphate Content, expressed as SO₃ (%)	2.9	3.2	3.1	2.9	2.8	2.9	2.7	Max. 4.0%
Chloride Content (%)	0.03	0.02	0.02	0.02	0.01	0.02	0.02	Max. 0.10%
K₂O (%)	0.72	0.71	0.61	0.64	0.58	0.63	0.61	---
Na₂O (%)	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	---
Total Alkali (Na₂O Eq.) (%)	0.58	0.54	0.47	0.50	0.45	0.48	0.47	---

7 Runfeng (潤豐牌水泥)# / Dongguan China Resources Cement Manufactory Co., Ltd.
(Portland Cement, Strength Class 52.5N)

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Laboratory Reference	2400129, 2400130	2400161, 2400162	25B0013, 25B0014	2500013, 2500014	2500046, 2500047	2500079, 2500080	2500115, 2500116	BS EN 197-1:2011 Strength Class 52.5N Specification
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
Country of Origin Stated By Client	China	China	China	China	China	China	China	
Physical Properties								
Density (kg/m³)	3160	3140	3120	3110	3140	3130	3120	Not specified
Fineness : Specific surface (cm²/g)	4040	3900	4010	3990	4060	4260	4460	Not specified
Consistence : Standard consistence (%)	27.0	27.0	27.5	27.0	28.5	28.0	29.0	Not specified
Setting Time : Initial setting time (min)	150	160	155	160	200	195	165	Min.45 min
Final setting time (min)	195	195	180	225	240	270	225	Not specified
Soundness (Le Chatelier) : Expansion (mm)	0.0	0.5	0.0	0.0	1.0	1.0	1.0	Max.10 mm
Compressive Strength (broken mortar prism) :								
Average 2 days strength (MPa)	25.8	26.8	27.4	27.1	22.4	31.5	28.6	Min. 20 MPa
Average 28 days strength (MPa)	63.7	68.6	66.4	68.4	55.4	58.3	60.9	Min. 52.5 MPa
Flexural Strength (mortar prism) :								
Average 2 days strength (MPa)	5.3	5.0	5.0	4.6	5.0	6.3	5.8	Not specified
Average 28 days strength (MPa)	8.5	8.0	7.8	8.5	9.3	9.0	9.6	Not specified
Chemical Composition								
Observed Mass Loss-on-ignition (%)	2.0	2.3	2.1	2.0	2.4	2.2	2.4	Max. 5.0%
Insoluble Residue (%)	0.8	0.7	<0.5	<0.5	<0.5	0.7	1.3	Max. 5.0%
Sulphate Content, expressed as SO₃ (%)	2.3	2.4	2.4	2.3	2.6	2.6	1.9	Max. 4.0%
Chloride Content (%)	0.05	0.03	0.05	0.03	0.03	0.04	0.03	Max. 0.10%
K₂O (%)	0.41	0.43	0.40	0.45	0.42	0.42	0.47	---
Na₂O (%)	0.17	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	---
Total Alkali (Na₂O Eq.) (%)	0.44	0.34	0.37	0.39	0.34	0.37	0.39	---

Laboratory Reference	2400131, 2400132	2400163, 2400164	25B0015, 25B0029	2500015, 2500016	2500048, 2500049	2500081, 2500082	2500117, 2500118	BS3892:Part 1: 1997
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
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 (%)	7.7	8.1	6.9	7.8	9.1	8.1	5.9	Not more than 12%
Particle Density (kg/m ³)	2620	2620	2550	2570	2450	2620	2620	Not less than 2000 kg/m ³
Water Requirement (%)	90	88	89	89	90	90	91	^Note (1)
Strength Factor ---	1.06	1.08	0.90	0.90	0.94	0.99	0.99	^Note (1)
Standard Consistence (%)	24.5	25.0	25.0	24.5	25.5	26.0	27.0	---
Initial Setting Time (min)	220	190	245	250	190	225	230	Not less than the initial setting time of the Portland cement used
Soundness (mm)	0.0	0.0	0.0	0.0	0.5	1.0	2.0	Not more than 10 mm
Portland Cement used								
Brand	Champion	Champion	Champion	Champion	Champion	Champion	Champion	---
Lab. Reference No.	2400091, 2400092	2400091, 2400092	2400151, 2400152	2400151, 2400152	2500005, 2500006	243218CE253762, 243218CE253762(1)	243218CE254051, 243218CE254051(1)	---
Initial Setting Time (min)	160	160	190	190	190	170	155	---
Chemical Composition								
Moisture Content (%)	<0.1	<0.1	<0.1	0.1	0.3	0.2	<0.1	Not more than 0.5%
Loss-on-ignition (%)	0.7	0.6	0.7	0.6	0.7	0.8	0.7	Not more than 7%
Sulphate Content, expressed as SO ₃ (%)	1.6	1.4	1.2	1.3	1.8	1.7	1.5	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 (%)	12.1	12.7	9.6	12.1	7.5	15.2	15.0	Not more than 10.0%
K ₂ O (%)	1.5	1.4	1.7	1.5	0.9	1.3	1.4	---
Na ₂ O (%)	1.8	1.5	1.6	1.5	2.2	1.5	1.7	---
Total Alkali (Na ₂ O Eq.) (%)	2.7	2.4	2.7	2.5	2.8	2.4	2.6	---

^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.

9 Hung Lee (鴻利牌煤灰) / Dongguan Hung Lee PFA Ltd.
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Laboratory Reference	2400133, 2400134	2400165, 2400166	25B0017, 25B0018	2500017, 2500018	2500050, 2500051	2500083, 2500084	2500119, 2500120	BS3892:Part 1: 1997
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
Country of Origin Stated By Client	China	China	China	China	China	China	China	Specification
Physical Properties								
Fineness (%)	2.1	3.6	10.8	11.1	7.4	9.4	11.0	Not more than 12%
Particle Density (kg/m ³)	2430	2450	2450	2500	2460	2370	2330	Not less than 2000 kg/m ³
Water Requirement (%)	90	91	99	90	95	94	95	^Note (1)
Strength Factor ---	0.92	0.93	0.87	1.00	0.87	0.88	0.90	^Note (1)
Standard Consistence (%)	27.0	27.0	29.0	26.5	27.0	28.5	31.0	---
Initial Setting Time (min)	280	230	215	195	200	245	215	Not less than the initial setting time of the Portland cement used
Soundness (mm)	0.0	0.5	0.0	2.0	0.5	1.5	1.5	Not more than 10 mm
Portland Cement used								
Brand	Champion	Champion	Champion	Special Green Island	Champion	Champion	Champion	---
Lab. Reference No.	2400091, 2400092	2400091, 2400092	2400151, 2400152	931327CE243641A	2500005, 2500006	243218CE253762, 243218CE253762(1)	243218CE254051, 243218CE254051(1)	---
Initial Setting Time (min)	160	160	190	135	190	170	155	---
Chemical Composition								
Moisture Content (%)	<0.1	<0.1	<0.1	<0.1	0.1	0.3	<0.1	Not more than 0.5%
Loss-on-ignition (%)	2.2	1.1	<0.5	<0.5	<0.5	0.9	0.6	Not more than 7%
Sulphate Content, expressed as SO ₃ (%)	0.6	<0.5	0.5	1.0	1.0	1.0	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 (%)	7.9	6.6	14.6	12.4	10.8	8.9	8.7	Not more than 10.0%
K ₂ O (%)	1.5	1.9	0.8	1.2	1.0	1.1	1.1	---
Na ₂ O (%)	1.1	1.0	0.5	1.0	0.7	0.9	2.0	---
Total Alkali (Na ₂ O Eq.) (%)	2.1	2.3	1.0	1.8	1.3	1.6	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	2400135, 2400136	2400167, 2400168	25B0019, 25B0030	2500019, 2500020	2500052, 2500053	2500085, 2500086	2500121, 2500122	BS3892:Part 1: 1997
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
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 (%)	8.7	12.3	10.3	11.3	9.6	8.1	11.9	Not more than 12%
Particle Density (kg/m ³)	2360	2340	2420	2310	2270	2450	2270	Not less than 2000 kg/m ³
Water Requirement (%)	96	96	96	96	96	94	95	^Note (1)
Strength Factor ---	0.90	0.90	0.83	0.79	0.83	0.85	0.85	^Note (1)
Standard Consistence (%)	29.0	28.0	28.0	28.0	29.0	29.0	30.0	---
Initial Setting Time (min)	195	225	250	220	200	260	230	Not less than the initial setting time of the Portland cement used
Soundness (mm)	0.0	0.0	0.5	0.0	0.5	1.0	1.0	Not more than 10 mm
Portland Cement used								
Brand	Champion	Champion	Champion	Champion	Champion	Champion	Champion	---
Lab. Reference No.	2400091, 2400092	2400091, 2400092	2400151, 2400152	2400151, 2400152	2500005, 2500006	243218CE253762, 243218CE253762(1)	243218CE254051, 243218CE254051(1)	---
Initial Setting Time (min)	160	160	190	190	190	170	155	---
Chemical Composition								
Moisture Content (%)	0.1	<0.1	<0.1	<0.1	0.2	0.1	0.1	Not more than 0.5%
Loss-on-ignition (%)	1.5	1.3	1.4	1.7	2.3	1.3	3.2	Not more than 7%
Sulphate Content, expressed as SO ₃ (%)	0.60	0.50	0.60	<0.5	<0.5	0.80	<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 (%)	5.2	7.1	7.0	2.8	2.3	8.8	3.1	Not more than 10.0%
K ₂ O (%)	0.9	1.0	1.0	0.9	0.9	1.1	0.8	---
Na ₂ O (%)	0.6	1.0	1.5	0.6	0.8	1.1	1.2	---
Total Alkali (Na ₂ O Eq.) (%)	1.2	1.6	2.2	1.2	1.3	1.9	1.8	---

^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.

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Laboratory Reference	2400137, 2400138	2400169, 2400170	25B0021, 25B0031	2500021, 2500022	2500054, 2500055	2500087, 2500088	2500123, 2500124	BS3892:Part 1: 1997
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
Country of Origin Stated By Client	China	China	China	China	China	China	China	Specification
Physical Properties								
Fineness (%)	4.6	5.0	9.1	10.5	5.6	7.3	7.3	Not more than 12%
Particle Density (kg/m ³)	2570	2450	2380	2490	2560	2470	2440	Not less than 2000 kg/m ³
Water Requirement (%)	90	96	96	92	90	90	90	^Note (1)
Strength Factor ---	0.97	0.95	0.80	1.01	0.96	0.97	0.97	^Note (1)
Standard Consistence (%)	25.5	28.0	28.0	27.5	25.0	26.0	27.0	---
Initial Setting Time (min)	210	210	245	230	190	230	240	Not less than the initial setting time of the Portland cement used
Soundness (mm)	0.0	0.0	0.5	0.5	1.0	1.0	1.0	Not more than 10 mm
Portland Cement used								
Brand	Champion	Champion	Champion	Champion	Champion	Champion	Champion	---
Lab. Reference No.	2400091, 2400092	2400091, 2400092	2400151, 2400152	2400151, 2400152	2500005, 2500006	243218CE253762, 243218CE253762(1)	243218CE254051, 243218CE254051(1)	---
Initial Setting Time (min)	160	160	190	190	190	170	155	---
Chemical Composition								
Moisture Content (%)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	Not more than 0.5%
Loss-on-ignition (%)	1.2	1.2	1.2	<0.5	0.8	0.9	0.7	Not more than 7%
Sulphate Content, expressed as SO ₃ (%)	1.2	0.8	0.7	1.0	1.4	1.0	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 (%)	10.7	8.6	4.0	12.4	18.3	11.2	8.9	Not more than 10.0%
K ₂ O (%)	1.4	1.0	2.2	1.1	1.1	1.2	1.6	---
Na ₂ O (%)	0.9	1.5	1.2	0.9	1.5	1.6	2.5	---
Total Alkali (Na ₂ O Eq.) (%)	1.8	2.2	2.7	1.7	2.2	2.4	3.6	---

^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.

12 Green Slag (綠保牌) / Green Island Cement Co., Ltd.
(Ground granulated blast furnace slag)

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Laboratory Reference	2400009, 2400010	2400011, 2400012	2400013, 2400014	25B0001, 25B0002	2500001, 2500002	2500003, 2500004	2500019, 2500020	BS EN 15167-1:2006
Date of Sample Received	4/9/2024	4/11/2024	2/1/2025	3/3/2025	7/5/2025	9/7/2025	5/9/2025	
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	30.5	30.0	30.0	30.0	30.5	Not specified
Initial Setting Time (min)	180	200	150	185	165	185	170	≤ twice of initial setting time for Portland cement used
Density (kg/m ³)	2860	2870	2870	2860	2890	2870	2850	Not specified
Fineness : Specific surface (m ² /kg)	479	491	504	506	466	546	497	≥ 275 m ² /kg
Activity Index :								
7 days (%)	60	64	59	78	59	74	67	≥ 45 %
28 days (%)	89	104	94	94	90	90	94	≥ 70 %
Portland Cement used								
Brand	Champion	Champion	Special Green Island	Special Green Island	Special Green Island	Special Green Island	Special Green Island	---
Lab. Reference No.	2400091, 2400092	2400091, 2400092	2400155, 2400156	2400155, 2400156	2500001, 2500002	243218CE253766	243218CE254055	---
Initial Setting Time (min)	160	160	130	130	115	135	140	---
Chemical Composition								
Loss-on-ignition (%)	1.4	0.6	1.0	1.1	0.7	1.1	0.9	≤ 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 (%)	5.4	5.0	5.7	5.1	5.1	6.5	6.1	≤ 18%
Moisture Content (%)	0.3	<0.2	<0.2	0.2	<0.2	0.2	0.2	≤ 1.0%
Sulphide Content (%)	0.9	1.1	1.0	0.7	0.9	1.0	1.0	≤ 2.0%

13 Champion (一品牌) / 柳州台泥新型建材有限公司
(Ground granulated blast furnace slag)

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Laboratory Reference	2500007, 2500008	2500013, 2500014	2500027, 2500028					BS EN 15167-1:2006
Date of Sample Received	7/5/2025	9/7/2025	10/9/2025					
Country of Origin Stated By Client	China	China	China					
Physical Properties								Specification Not specified $\leq$ twice of initial setting time for Portland cement used Not specified $\geq 275 \text{ m}^2/\text{kg}$ $\geq 45 \%$ $\geq 70 \%$ --- --- ---
Standard Consistence (%)	28.5	28.5	29.0					
Initial Setting Time (min)	155	160	140					
Density (kg/m ³)	2890	2890	2990					
Fineness : Specific surface (m ² /kg)	427	413	448					
Activity Index :								
7 days (%)	64	64	64					
28 days (%)	95	97	90					
Portland Cement used								
Brand	Special Green Island	Special Green Island	Special Green Island					
Lab. Reference No.	2500001, 2500002	2500001, 2500002	CLCEM2500133, CLGGB2500032					
Initial Setting Time (min)	115	115	125					
Chemical Composition								$\leq 3.0\%$ $\leq 2.5\%$ $\leq 0.10\%$ $\leq 18\%$ $\leq 1.0\%$ $\leq 2.0\%$
Loss-on-ignition (%)	1.3	1.0	1.0					
Sulphate Content, expressed as SO ₃ (%)	<0.5	<0.5	<0.5					
Chloride Content (%)	<0.05	<0.05	<0.05					
Magnesium Oxide Content (%)	6.7	7.0	6.8					
Moisture Content (%)	0.3	<0.2	<0.2					
Sulphide Content (%)	0.8	0.8	<0.7					

14 Bao Tian Pai (寶田牌) / 寶武環科(湛江)資源循環利用有限公司
(Ground granulated blast furnace slag)

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Laboratory Reference	2500009, 2500010	2500015, 2500016	2500029, 2500030					BS EN 15167-1:2006
Date of Sample Received	7/5/2025	9/7/2025	11/9/2025					
Country of Origin Stated By Client	China	China	China					
Physical Properties								Specification Not specified $\leq$ twice of initial setting time for Portland cement used Not specified $\geq 275 \text{ m}^2/\text{kg}$ $\geq 45 \%$ $\geq 70 \%$ --- --- ---
Standard Consistence (%)	30.0	30.0	30.0					
Initial Setting Time (min)	150	175	140					
Density (kg/m ³)	2900	2880	3060					
Fineness : Specific surface (m ² /kg)	471	436	490					
Activity Index :								
7 days (%)	65	71	74					
28 days (%)	99	98	100					
Portland Cement used								
Brand	Special Green Island	Special Green Island	Special Green Island					
Lab. Reference No.	2500001, 2500002	2500001, 2500002	CLCEM2500133, CLGGB2500032					
Initial Setting Time (min)	115	115	125					
Chemical Composition								$\leq 3.0\%$ $\leq 2.5\%$ $\leq 0.10\%$ $\leq 18\%$ $\leq 1.0\%$ $\leq 2.0\%$
Loss-on-ignition (%)	<0.5	0.6	<0.5					
Sulphate Content, expressed as SO ₃ (%)	<0.5	<0.5	<0.5					
Chloride Content (%)	<0.05	<0.05	<0.05					
Magnesium Oxide Content (%)	7.3	7.7	8.2					
Moisture Content (%)	0.2	<0.2	0.2					
Sulphide Content (%)	1.0	1.0	0.9					

15 SGJY (韶鋼嘉羊) / 廣東韶鋼嘉羊新型材料有限公司
(Ground granulated blast furnace slag)

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Laboratory Reference	2500005, 2500006	2500017, 2500018	2500031, 2500032					BS EN 15167-1:2006
Date of Sample Received	7/5/2025	9/7/2025	11/9/2025					
Country of Origin Stated By Client	China	China	China					
Physical Properties								Not specified $\leq$ twice of initial setting time for Portland cement used Not specified $\geq 275 \text{ m}^2/\text{kg}$ $\geq 45 \%$ $\geq 70 \%$ --- --- ---
Standard Consistence (%)	29.0	29.0	29.0					
Initial Setting Time (min)	175	175	170					
Density (kg/m^3)	2910	2870	3040					
Fineness : Specific surface (m^2/kg)	410	425	448					
Activity Index :								
7 days (%)	63	67	67					
28 days (%)	97	100	100					
Portland Cement used								
Brand	Special Green Island	Special Green Island	Special Green Island					
Lab. Reference No.	2500001, 2500002	2500001, 2500002	CLCEM2500133, CLGGB2500032					
Initial Setting Time (min)	115	115	125					
Chemical Composition								$\leq 3.0\%$ $\leq 2.5\%$ $\leq 0.10\%$ $\leq 18\%$ $\leq 1.0\%$ $\leq 2.0\%$
Loss-on-ignition (%)	<0.5	0.5	<0.5					
Sulphate Content, expressed as SO_3 (%)	<0.5	<0.5	0.5					
Chloride Content (%)	<0.05	<0.05	<0.05					
Magnesium Oxide Content (%)	7.2	7.6	8.4					
Moisture Content (%)	0.2	<0.2	<0.2					
Sulphide Content (%)	1.1	0.9	1.0					