

Note: **Clear copy request - Property of NGC Land Corporation**



CEMENT TESTING CENTER

CeMAP Bldg. No. 1 Cpl. Cruz St. cor. E. Rodriguez Jr. Ave.
 Bagong Ilog, Pasig City 1600 Philippines
 Tel. (632) 671-7583 Fax: (632) 671-8402 Email: ctcenter@cemap.org.ph



DPWH-BRS
 Accredited Laboratory

TEST CERTIFICATE

Test Certificate No.:	P-092020-01305-P	Date of Issue:	1-Sep-20	No. of Pages:	1 of 2
Sample Reference No.:	C83823 - 0720	Kind and Type of Sample:	Portland Cement, T-II		
Name of Company/Individual:	NGC Land Corporation			Date Sampled:	15-Jul-20
Address:	250 Ibuna St. Brgy. Onse, San Juan City			Date Received:	15-Jul-20
Sampled by:	Edgardo C. Fermin	Submitted by:	Edgardo C. Fermin	Date of test:	12-Aug-20
Test Specification:	ASTM C150/C150M - 18	Test Methods Used:	as specified below		
Sampling Method Used:	Not Specified				
Sample identification:	Barako Cement T-II				

PHYSICAL TESTS

PARAMETERS		TEST METHODS	SPECIFICATION LIMITS	TEST RESULTS	UNCERTAINTY (U)	REMARKS
FINENESS, (%) passing 75 um sieve		ASTM C 786	A	97.6		
FINENESS, (%) passing 45 um sieve		ASTM C 430	A	D		
FINENESS: Specific Surface Blaine, (m ² /kg)		ASTM C 204	260 min.	375	± 12	
TIME OF SETTING, Vicat Needle	Initial Time, (minutes)	ASTM C 191	45 min. , 375 max.	97	± 10	
			(hours)	A	1.62	
	Final Time, (minutes)		A	280		
			(hours)	A	4.67	
AUTOCLAVE EXPANSION, (%)		ASTM C 151/	0.80 max.	0.07	± 0.0019	
AUTOCLAVE CONTRACTION, (%)		C151M	A	A		
NORMAL CONSISTENCY, (%)		ASTM C 187	A	25.0		
DENSITY, (g/cm ³)		ASTM C 188	A	D		
COMPRESSIVE STRENGTH			*psi MPa	*psi MPa	*psi MPa	
1 day		ASTM C 109/ C109M	A A	B B		
3 days			1450 min. 10.0 min.	3580 24.7	± 107 ± 0.7	
7 days			2470 min. 17.0 min.	5030 34.7	± 133 ± 0.9	
28 days			4060 min. 28.0 min.	C C		9-Sep-20
AIR CONTENT, (Volume %)		ASTM C 185	12 max.	D		

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This report gives the result of tests that relate only to the above sample submitted to CTC.

A - not applicable; B - not required by the test method D - not requested by the customer

(U) - The expanded uncertainty values are calculated at 95% confidence level. * - 1psi = 0.006895MPa

Information at the gray-colored box are customer supplied / preference.

Checked by:  Approved by:

ATTIADO GUERRERO J. DE LEON
 Physical Group - Supervisor

MA. BELLA O. BALLON, R. Ch.
 Quality Management Officer
 PRC License No. 0007393

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Sample Reference No.:	C83823-0720	Kind and Type of Sample:	Portland Cement, T- II		
Name of Company / Individual:	NGC Land Corporation			Date Sampled:	15-Jul-20
Address:	250 Ibuna St. Brgy. Onse, San Juan City			Date Received:	15-Jul-20
Sampled by:	Edgardo C. Fermin	Submitted by:	Edgardo C. Fermin	Date of Test:	28-Aug-20
Test Specification:	ASTM C150/C150M - 18	Test Methods Used:	as specified		
Sampling Method Used:	Not Specified				
Sample Identification:	Barako Cement T-II				

CHEMICAL ANALYSIS

PARAMETERS, (%)	Test Methods	SPECIFICATION LIMITS	TEST RESULTS	UNCERTAINTY (u)	REMARKS
Silicon Dioxide, (SiO ₂)	Li borate fusion/ XRF	A	21.0		
Aluminum Trioxide, (Al ₂ O ₃)		6.0 max.	5.1		
Ferric Oxide, (Fe ₂ O ₃)		6.0 max.	3.05		
Calcium Oxide, (CaO)		A	64.2		
Magnesium Oxide, (MgO)		6.0 max.	1.0		
Loss on Ignition, (LOI)	ASTM C114	3.0 max.	2.1	± 0.04	
Insoluble Residue, (IR)		1.5 max.	0.37	± 0.05	
Sulfur Trioxide, (SO ₃)		3.0 max.	2.63		
Sodium Oxide (Na ₂ O)	Li borate fusion/XRF	A	0.45		
Potassium Oxide (K ₂ O)		A	1.06		
Freelime, (F-CaO)	BS 4550	A	1.7		
COMPLEXES, (%)					
Tri-Calcium Silicate, (C ₃ S)	ASTM C150	A	56		
Di-Calcium Silicate, (C ₂ S)		A	18		
Tri-Calcium Aluminate, (C ₃ A)		8.0 max.	8		
Tetra-Calcium Alumino-Ferrite, (C ₄ AF)		A	9		
Sum of C ₃ S + 4.75(C ₂ A)		100 max.	94		
RATIOS, (%)					
Silica Modulus, (S.M.)	ASTM C150	A	2.6		
Hydraulic Modulus, (H.M.)		A	2.2		
Alumina-Iron, (A/F)		A	1.7		
Lime Saturation Factor, (L.S.F.)		A	93.2		

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A - not applicable

Information at the gray-colored box are customer supplied / preference.

Checked by:

Approved by:

Yasmin Malaya C. Gomez
YASMIN MALAYA C. GOMEZ, R.Ch.

MA. BELLA O. BALLON
MA. BELLA O. BALLON, R.Ch.

Chemical - Supervisor

Quality Management Officer

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