

**MANUFACTURERS TEST REPORT FOR BS12:1996 & BS EN197-1:2000 PORTLAND CEMENT  
CEMENT IS TESTED IN ACCORDANCE WITH EN196**

Report No.: A2/1145

Lab. No.: 68391

BS12:1996 and  
BS EN197-1:2000 CEM I  
Strength Class 52.5N  
Requirements

**EMERALD BRAND**  
Typical result of  
cement dispatched on  
**06 November 2011**

A. Compressive Strength

Strength at 2 days	Not less than 20.0 MPa	<b>24.8</b>	MPa
Strength at 7 days	-	<b>44.5</b>	MPa
Strength at 28 days	Not less than 52.5 MPa and not more than 72.5 MPa (BS12)	<b>61.0</b>	MPa

B. Fineness - **3580** cm<sup>2</sup>/g

C. Setting times, Initial Not less than 45 minutes **150** mins.  
Final Not required **180** mins.

D. Soundness Not more than 10 mm **1.0** mm

E. Additives Not more than 1.0 % **None**

F. Minor constituents Not more than 5 % **4.5** %

G. Loss on ignition Not more than 3.0 % **2.49** %  
and not more than 5.0 % (BS EN197)

H. Residue insoluble Not more than 5.0 % **0.10** %

I. Sulfate of cement as SO<sub>3</sub> Not more than 3.5 % **2.37** %  
and not more than 4.0 % (BS EN197)

J. Chloride content Not more than 0.10 % **0.01** %


K. Chemical composition of clinker used

Silicon dioxide	-	<b>22.0</b>	%
Iron (III) oxide	-	<b>3.4</b>	%
Aluminium oxide	-	<b>5.4</b>	%
Calcium oxide	-	<b>66.5</b>	%
Magnesium oxide	Not more than 5.0%	<b>1.7</b>	%
Calcium silicates	Not less than 67%	<b>78</b>	%
Ratio, CaO/Silica	Not less than 2.0	<b>3.0</b>	%

L. Alkali content as sodium oxide equivalent Mean: **0.47** %  
on last 25 composite sample S.D.: **0.11** %

The cement delivered is processed by Green Island Cement Co. Ltd., Tap Shek Kok Cement Plant and meets all requirements of BS12:1996 and BS EN197-1:2000 CEM I for Portland Cement of strength class 52.5N.

Form 2A(06/92)

Certified by:   
Approved Signatory: Ng Lap Man Franco  
Laboratory Superintendent

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