

Certificate N°: 1301280276



SGS

Page N°: 1/ 3

Hochiminh city, Date: 24 January, 2013

**CERTIFICATE OF QUALITY, QUANTITY  
AND CHEMICAL ANALYSIS**

**REF. NO.: M13/0224.3**

**A shipment designated as:**

BY SHIPPER: PEAKWARD VIETNAM COMPANY LIMITED  
PEAKWARD VIETNAM COMPANY LIMITED  
GROUP 55, MAI DICH WARD, CAU GIAY DIST., HANOI, VIETNAM  
COMMODITY DECLARED: ORDINARY PORTLAND CLINKER IN BULK SUITABLE FOR PRODUCING  
ORDINARY GREY PORTLAND CEMENT AS PER ASTM C150 (TYPE 1)  
WEIGHT AS B/L: 4,328 M.TONS  
VESSEL: M/V GOLDEN TULIP  
PORT OF LOADING: CAM PHA SEAPORT IN VIETNAM  
PORT OF DISCHARGE: CHITTAGONG SEAPORT, BANGLADESH  
B/L NO.: GT 3 DATED: 24TH JANUARY 2013  
L/C NUMBER 147813020021

In compliance with the instructions received from our principal, PEAKWARD VIETNAM COMPANY LIMITED, we attended at Cam Pha Seaport in Vietnam with the purpose of carrying out survey of quantity and quality of the above mentioned commodity. At time of our intervention, the cargo in bulk was being loaded onto the vessel at Cam Pha Seaport in Vietnam. We hereby report our findings as follows:

**WEIGHT BY VESSEL'S DRAFT SURVEY:** Before and upon completion of loading, jointly with the Master and/or Chief Officer appointed by him we read the vessel's draft marks and sounded the tanks containing the variable liquids; then used calibration tables supplied by the ship's staff to calculate the quantity loaded on board the vessel as follows:

**47,888 M.TONS**

**(Forty seven thousand eight hundred and eighty eight metric tons only)**

This certificate was issued to cover a lot consisting of **4,328 M.TONS** declared by the shipper under B/L No. GT 3 dated 24TH JANUARY 2013 – being a part of total quantity of **47,888 M.TONS** loaded on the vessel "M/V GOLDEN TULIP"

**SGS Vietnam Ltd.**

119-121 Vo Van Tan, Ward 6 - District 3  
Hochiminh City - Vietnam  
Tel.: +84(0)8 3935 1920  
Fax: +84(0)8 3935 1929

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**SAMPLING AND ANALYSIS:** Increment samples were drawn randomly during loading onto the vessel from barges. The full composite sample was then prepared and divided into 04 sub samples of 10 kg each and distributed as follows:

- 01 sub-sample with SGS seal No. P3879547 was sent to our Lab for testing.
- 01 sub-sample with SGS seal No. P3879549 was sent to the shipper.
- 01 sub-sample with SGS seal No. P3879550 was handed over to the vessel's representative.
- 01 sub-sample with SGS seal No. P3879548 was retained at SGS office and will be disposed after 03 months.

The following analysis result was found:

| Items                          | Testing result (%)                   | Testing method |
|--------------------------------|--------------------------------------|----------------|
| SiO <sub>2</sub>               | 20.93 (Two zero decimal nine three)  | TCVN 141       |
| Al <sub>2</sub> O <sub>3</sub> | 5.27 (Five decimal two seven)        |                |
| Fe <sub>2</sub> O <sub>3</sub> | 3.26 (Three decimal two six)         |                |
| CaO                            | 65.67 (Six five decimal six seven)   |                |
| MgO                            | 1.79 (One decimal seven nine)        |                |
| SO <sub>3</sub>                | 0.26 (Zero decimal two six)          |                |
| Free CaO (CaO <sub>td</sub> )  | 1.03 (One decimal zero three)        |                |
| Loss on Ignition (LOI)         | 0.18 (Zero decimal one eight)        |                |
| Insoluble Residue              | 0.27 (Zero decimal two seven)        |                |
| C <sub>3</sub> S               | 67.47 (Six seven decimal four seven) | By Calculated  |
| C <sub>2</sub> S               | 9.11 (Nine decimal one one)          |                |
| C <sub>3</sub> A               | 8.45 (Eight decimal four five)       |                |
| C <sub>4</sub> AF              | 9.92 (Nine decimal nine two)         |                |
| LSF                            | 98.10 (Nine eight decimal one zero)  |                |
| Gain size 0-1mm                | 12.94 (One two decimal nine four)    | By sieve       |
| Gain size 5-25mm               | 65.32 (Six five decimal three two)   |                |
| Moisture                       | 0.24 (Zero decimal two four)         | TCVN 7024      |

The formula was applied to calculate for C<sub>3</sub>A, C<sub>3</sub>S, C<sub>2</sub>S, C<sub>4</sub>AF and LSF as follows:

$$C_3S = 4.071 \times \% - 7.600 \times \% \text{SiO}_2 - 6.718 \times \% \text{Al}_2\text{O}_3 - 1.430 \times \% \text{Fe}_2\text{O}_3 - 2.852 \times \% \text{SO}_3$$

$$C_2S = (2.867 \times \% \text{SiO}_2) - (0.7544 \times \% C_3S)$$

$$C_3A = (2.650 \times \% \text{Al}_2\text{O}_3) - (1.692 \times \% \text{Fe}_2\text{O}_3)$$

$$C_4AF = 3.043 \times \% \text{Fe}_2\text{O}_3$$

$$\text{LSF} (\%) = (100 \times \% \text{CaO}) / (2.8 \times \% \text{SiO}_2 + 1.18 \times \% \text{Al}_2\text{O}_3 + 0.65 \times \% \text{Fe}_2\text{O}_3)$$

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Page N°: 3/ 3

Survey was carried out from 12 to 24 January, 2013

**This certificate reflects the findings determined at time and place of our intervention only.**

**ISSUED BY SGS VIETNAM LTD.  
Tran Thi Thu Trang**



**SGS**

**SGS Vietnam Ltd.**

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