



**CEMENT TEST REPORT**  
**WHITE CEMENT TYPE I ASTM C-150**

|                     |                                         |           |
|---------------------|-----------------------------------------|-----------|
| Plant               | Valles                                  |           |
| Product Type        | WHITE CEMENT TYPE I ASTM C-150          |           |
| Initial date Period | May 22, 2017                            |           |
| Final date Period   | May 28, 2017                            |           |
| Date of report      | 5                                       | June 2017 |
| Document number     | VII-WHITE CEMENT TYPE I ASTM C-150-May- | 21        |

| STANDARD CHEMICAL PROPERTIES   | Testing Procedure | Specification        | TEST RESULTS |
|--------------------------------|-------------------|----------------------|--------------|
|                                | ASTM C-150        | ASTM C-150<br>Type I |              |
| Magnesium Oxide (MgO), máx %   | C-114             | 6.0                  | 0.9          |
| *Sulfur Trioxide (SO3), máx %  | C-114             | 3.0                  | -----        |
|                                |                   | 3.5                  | 4.0          |
| Loss on Ignition (LOI), máx %  | C-114             | 3.5                  | 3.0          |
| Insoluble Residue (IR), máx %  | C-114             | 1.5                  | 0.21         |
| PHYSICAL PROPERTIES            | Testing Procedure | Specification        | TEST RESULTS |
|                                | ASTM C-150        | ASTM C-150<br>Type I |              |
| Blaine Fineness, m2/kg, min,   | C-204             | 260                  | 415          |
| Time of Setting (Vicat), min   |                   |                      |              |
|                                | Initial Set, min  | C-191                | 45           |
|                                | Initial Set, máx  | C-191                | 375          |
|                                | Final Set, máx    | C-191                | -----        |
| Autoclave Expansion %          | C-151             | 0.80                 | 0.018        |
| *Expansion at 14 days, máx     | C-1038            | 0.020                | 0.010        |
| Compressive Strength, Mpa, min | C-109             |                      |              |
|                                | 1 Day             | -----                | 22.8         |
|                                | 3 Days            | 12                   | 35.6         |
|                                | 7 Days            | 19                   | 42.8         |
|                                | 28 Days**         | -----                | 50.8         |
| <b>WHITENESS</b>               |                   | 92.6                 | -a: 1.0      |
|                                |                   |                      | b: 4.9       |

\*Sulfur Trioxide content (SO3) % is added according to Optimum SO3, see note D in ASTM-C-150 allows for additional sulfate, provided expansion as measured by ASTM C-1038 and NMX-C-185-ONNCE does not exceed 0.020%

The information presented in this report meets or exceeds the chemical and physical Specifications for Portland Cement as in ASTM-C-150 /C150M -17

This report cannot be reproduced without the written approval of the Plant Quality Assurance Manager.

\*\* The 28 days compressive strength corresponds to the production from April 24th to April 30th.

Leopoldo Rubio Leal  
Quality Assurance

Víctor Manuel Serrano Robles  
Director of Plant

CEMEX Internacional certifies that the current certificate date corresponds to the production date of the following shipment:

Customer: Clanap Importacao e Exportacao Ltda.  
Shipment Date: 05.06.2017

Port of Destination: Santos, Brasil  
Product: White Cement

Booking Number: 190MR0005381  
Quantity: 192.150 mt

Adriana Castruita Torres

