



CERTIFICATE OF QUALITY  
ULTRACEM S.A.S

F.V: 01-03-2017

GRAY CEMENT GU TYPE OF GENERAL USE

VERSIÓN 3.

Code 005R

PLANT	ULTRACEM S.A.S
ADDRESS	Km 2.5 VIA CORDIALIDAD,GALAPA
PRODUCTION DATE:	6/01/2020 — 4/04/2020
FORMAT:	BULK/BAGS
CLIENT:	

PHYSICAL TEST	TEST METHOD	RESULTS	NTC 121	ASTM C 1157	ULTRACEM
Air content of mortar volume, %	ASTM C185	6,73	Max. 12,0	Max. 12,0	Max. 12,0
Fineness, air permeability, cm <sup>2</sup> /g	ASTM C204	4200	—	—	—
No. 325 sieve, % passing	ASTM C430	93,85	—	—	—
Autoclave length change, %	ASTM C151	0,00	Max. 0,80	Max. 0,80	Max. 0,80
Mortar bar expansion, 14 days, %	ASMT C1038	0,016	Max. 0,020	Max. 0,020	Max. 0,020
<b>Strength, compression</b>					
1 Day, MPa (psi)	ASTM C109	12,25 (1777)	—	—	—
3 Days, MPa (psi)	ASTM C109	22,2 (3220)	Min. 8,0 (1160)	Min. 13,0 (1890)	Min. 13,0 (1890)
7 Days, MPa (psi)	ASTM C109	26,72 (3875)	Min. 15,0 (2176)	Min. 20,0 (2900)	Min. 20,0 (2900)
28 Days, MPa (psi)	ASTM C109	33,32 (4832)	Min. 24,0 (3481)	Min. 28,0 (4060)	Min. 28,0 (4060)
<b>Time of Setting, Vicat Test</b>					
Initial set, minutes	ASTM C191	221	Min. 45; Max. 420	Min. 45; Max. 420	Min. 45; Max. 420
Final set, minutes	ASTM C191	281	—	—	—

It is certified that the ULTRACEM CEMENT GU TYPE OF GENERAL USE complies with the ASTM C 1157 Standard for CEMENT TYPE GU (GENERAL USE).

The results expressed have been obtained by applying the sampling and testing methods in accordance with the frequencies and instructions established in the MONITORING AND MEASUREMENT PLAN FOR THE CEMENT PRODUCTION MANAGEMENT of Ultracem S.A.S. Applies to the productions made during the period included in "Production Date".

Signature:

Position: Cement Quality Manager