



CEMENTOS ALFA, S.A,

Plant: MATAPORQUERA

ER Certificate: ER-0572/1998



QUALITY ANALYSIS CERTIFICATE - CEMENT

TYPICAL RESULTS

Cement Type: CEM I 52,5 R ma (EN 197-1)

PERIOD: JULY 2014

CE: 0099/CPR/A33/0831

The Quality Management System adopted in our company for the production and commercialization of cements and clinker, complies with UNE-EN-ISO 9001:2008, and it is certified by AENOR. It is also certified under IQNet network.

TESTS	Results	Specification EN 197-1
<b>Chemical Characteristics</b>		
Loss on Ignition %	1,87	≤ 5,0
SiO <sub>2</sub> %	20,04	
Al <sub>2</sub> O <sub>3</sub> %	4,42	
Fe <sub>2</sub> O <sub>3</sub> %	3,26	
CaO %	63,86	
MgO %	1,42	
Na <sub>2</sub> O %	0,17	
K <sub>2</sub> O %	0,78	
Insoluble Residue %	0,48	≤ 5,0
Sulphates (SO <sub>3</sub> ) %	3,36	≤ 4,0
Chlorides %	0,00	≤ 0,10
<b>Physical and Mechanical Characteristics</b>		
Normal Consistency Water %	31,0	
Initial Setting Time min	155	≥ 45
Final Setting Time min	195	
Soundness (Le Chatelier) mm	0,5	≤ 10
Specific Surface (Blaine) cm <sup>2</sup> /g	4970	
Compressive Strength at 2 days MPa	40,6	≥ 30,0
Compressive Strength at 28 days MPa	68,2	≥ 52,5
<b>Other Characteristics</b>		
Na <sub>2</sub> O equiv. %	0,69	≤ 0,75
<b>Bogue Composition (mineral phases)</b>		
C <sub>3</sub> S %	62,9	
C <sub>2</sub> S %	15,3	
C <sub>3</sub> A %	6,3	
C <sub>4</sub> AF %	10,0	

R-25-4-52/5-Z

Quality Manager

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