



CEMENTOS ALFA, S.A,

Plant: MATAPORQUERA

ER Certificate: ER-0572/1998



QUALITY ANALYSIS CERTIFICATE - CEMENT

TYPICAL RESULTS

Cement Type: CEM I 42,5 R (EN 197-1)

PERIOD: JULY 2014

CE: 0099/CPR/A33/0154

N: 015/001358

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
Chemical Characteristics		
Loss on Ignition %	2,71	≤ 5,0
SiO ₂ %	19,63	
Al ₂ O ₃ %	5,42	
Fe ₂ O ₃ %	2,12	
CaO %	62,90	
MgO %	1,65	
Na ₂ O %	0,22	
K ₂ O %	1,15	
Insoluble Residue %	0,58	≤ 5,0
Sulphates (SO ₃) %	3,33	≤ 4,0
Chlorides %	0,00	≤ 0,10
Physical and Mechanical Characteristics		
Normal Consistency Water %	29,5	
Initial Setting Time min	185	≥ 60
Final Setting Time min	235	
Soundness (Le Chatelier) mm	0,5	≤ 10
Specific Surface (Blaine) cm ² /g	3730	
Compressive Strength at 2 days MPa	34,2	≥ 20,0
Compressive Strength at 28 days MPa	58,4	42,5-62,5
Other Characteristics		
Na ₂ O equiv. %	0,98	
Bogue Composition (mineral phases) *		
C ₃ S %	53,6	
C ₂ S %	20,5	
C ₃ A %	12,6	
C ₄ AF %	6,8	

* Corresponding to clinker composition

R-25-4-52/5-Z

Quality Manager

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GRUPO CEMENTOS PORTLAND VALDERRIVAS