



CEMENTOS ALFA, S.A.

PLANT: MATAPORQUERA

ER Certificate: ER-0572/1998



TECHNICAL CHARACTERISTICS CERTIFICATE

Cement

CEM I 42,5 R BS-EN 197-1

**N: 015/001358
CE: 0099/CPR/A33/0154**

Period

September, 2017

TESTS	Results Average Value	Standard Spec. EN/UNE
Chemical Characteristics		
Loss on Ignition %	2,9	< 5,0
Insoluble Residue %	0,6	< 5,0
Sulphates (SO ₃) %	3,3	< 4,0
Chlorides %	0,01	< 0,10
Physical and Mechanical Characteristics		
Normal Consistency Water %	29,4	
Initial Setting Time min	164	> 60
Final Setting Time min	211	< 720
Soundness Le Chatelier mm	0,5	< 10
Specific Surface (Blaine) cm ² /g	3686	
Compressive Strength at 2 days MPa		
• Monthly average	31,9	> 20,0
• Cumulative average (10/2016 - 09/2017)	33,2	> 20,0
• Cumulative Std. Dev. (10/2016 - 09/2017)	1,8	
Compressive Strength at 28 days MPa		
• Monthly average	55,4	42,5 - 62,5
• Cumulative average (10/2016 - 09/2017)	56,9	42,5 - 62,5
• Cumulative Std. Dev. (10/2016 - 09/2017)	1,9	
Additional Characteristics		
Alkali Equivalent (%)	0,97	

This document doesn't imply that any amount of cement has been supplied by the Company

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Chief of Quality Control

