



CEMENTOS ALFA, S.A.

PLANT: MATAPORQUERA

ER Certificate: ER-0572/1998



TECHNICAL CHARACTERISTICS CERTIFICATE

Cement

Period

CEM I 52.5 R MA

October, 2016

CE: 0099/CPR/A33/0831

TESTS	Results Average Value	Standard Spec. EN/UNE
Chemical Characteristics		
Loss on Ignition %	2,8	< 5,0
Insoluble Residue %	0,4	< 5,0
Sulphates (SO ₃) %	3,3	< 4,0
Chlorides %	0,01	< 0,10
Physical and Mechanical Characteristics		
Normal Consistency Water %	30,4	
Initial Setting Time min	163	> 45
Final Setting Time min	218	< 720
Soundness Le Chatelier mm	0,5	< 10
Specific Surface (Blaine) cm ² /g	4966	
Compressive Strength at 2 days MPa		
• Monthly average	39,7	> 30,0
• Cumulative average (11/2015 - 10/2016)	40,4	> 30,0
• Cumulative Std. Dev. (11/2015 - 10/2016)	1,8	
Compressive Strength at 28 days MPa		
• Monthly average	65,3	> 52,5
• Cumulative average (11/2015 - 10/2016)	65,6	> 52,5
• Cumulative Std. Dev. (11/2015 - 10/2016)	2,5	
Additional Characteristics		
C3A * (%)	3,9	
Alkali Equivalent (%)	0,68	< 0,75

* Corresponding to clinker composition
This document doesn't imply that any amount of cement has been supplied by the Company

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Chief of Quality Control _____

