



CEMENTOS ALFA, S.A.

PLANT: MATAPORQUERA

ER Certificate: ER-0572/1998



TECHNICAL CHARACTERISTICS CERTIFICATE

Cement

CEM I 42,5 R

Period

November, 2014

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

TESTS	Results Average Value	Standard Spec. EN/UNE
Chemical Characteristics		
Loss on Ignition %	2,7	< 5,0
Insoluble Residue %	0,5	< 5,0
Sulphates (SO ₃) %	3,2	< 4,0
Chlorides %	0,01	< 0,10
Physical and Mechanical Characteristics		
Normal Consistency Water %	28,9	
Initial Setting Time min	181	> 60
Final Setting Time min	232	< 720
Soundness Le Chatelier mm	0,4	< 10
Specific Surface (Blaine) cm ² /g	3736	
Compressive Strength at 2 days MPa		
• Monthly average	32,9	> 20,0
• Cumulative average (12/2013 - 11/2014)	33,6	> 20,0
• Cumulative Std. Dev. (12/2013 - 11/2014)	1,9	
Compressive Strength at 28 days MPa		
• Monthly average	58,0	42,5 - 62,5
• Cumulative average (12/2013 - 11/2014)	57,4	42,5 - 62,5
• Cumulative Std. Dev. (12/2013 - 11/2014)	1,7	

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

Barrio la Estación, s/n.
39410 Mataporquera (Cantabria)
Tel. 942 770 058
Fax 942 770 243
info@alfainforma.com

Chief of Quality Control



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CEMENTOS
PORTLAND
VALDERRIVAS