



CEMENTOS ALFA, S.A.

PLANT: MATAPORQUERA

ER Certificate: ER-0572/1998



TECHNICAL CHARACTERISTICS CERTIFICATE

Cement

CEM I 52.5 R MA

Period

August, 2017

CE: 0099/CPR/A33/0831

TESTS	Results Average Value	Standard Spec. EN/UNE
<b>Chemical Characteristics</b>		
Loss on Ignition %	2,9	< 5,0
Insoluble Residue %	0,5	< 5,0
Sulphates (SO <sub>3</sub> ) %	3,3	< 4,0
Chlorides %	0,01	< 0,10
<b>Physical and Mechanical Characteristics</b>		
Normal Consistency Water %	30,1	
Initial Setting Time min	159	> 45
Final Setting Time min	213	< 720
Soundness Le Chatelier mm	0,6	< 10
Specific Surface (Blaine) cm <sup>2</sup> /g	4956	
Compressive Strength at 2 days MPa		
• Monthly average	39,1	> 30,0
• Cumulative average (09/2016 - 08/2017)	39,4	> 30,0
• Cumulative Std. Dev. (09/2016 - 08/2017)	2,7	
Compressive Strength at 28 days MPa		
• Monthly average	65,2	> 52,5
• Cumulative average (09/2016 - 08/2017)	66,1	> 52,5
• Cumulative Std. Dev. (09/2016 - 08/2017)	2,9	
<b>Additional Characteristics</b>		
C3A * (%)	3,9	
Alkali Equivalent (%)	0,69	< 0,75

\* Corresponding to clinker composition

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  
www.valderrivas.es

Chief of Quality Control



GRUPO  
CEMENTOS  
PORTLAND  
VALDERRIVAS