



Cementos Portland Valderrivas, S.A.

PLANT: **MONJOS**

ER Certificate: ER-0675/1999



TECHNICAL CHARACTERISTICS CERTIFICATE

Cement

CEM I 52,5 R

Period

August, 2015

N: 015/001400
CE: 0099/CPR/A33/0115

TESTS	Results Average Value	Standard Spec. EN/UNE
Chemical Characteristics		
Loss on Ignition %	2,5	< 5,0
Insoluble Residue %	0,8	< 5,0
Sulphates (SO ₃) %	3,5	< 4,0
Chlorides %	0,05	< 0,10
Physical and Mechanical Characteristics		
Normal Consistency Water %	29,9	
Initial Setting Time min	136	> 45
Final Setting Time min	194	
Soundness Le Chatelier mm	0,3	< 10
Specific Surface (Blaine) cm ² /g	4815	
Compressive Strength at 2 days MPa		
• Monthly average	40,4	> 30,0
• Cumulative average (09/2014 - 08/2015)	38,1	> 30,0
• Cumulative Std. Dev. (09/2014 - 08/2015)	2,3	
Compressive Strength at 28 days MPa		
• Monthly average	65,5	> 52,5
• Cumulative average (09/2014 - 08/2015)	61,3	> 52,5
• Cumulative Std. Dev. (09/2014 - 08/2015)	2,8	
Alkali Equivalent (Na ₂ O eq) %	0,71	< 0,75 (*)
C3A %	6,1	

(*): Specification for UK market, not included in EN 197-1

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

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