



CONFORMITY CERTIFICATE																																											
Ground Granulated Blastfurnace Slag Produced at			Aboño																																								
Sample Period			December 2019																																								
Works																																											
Certificate of Conformity of GGBS to EN 15167-1:2006			Certificate of Conformity of Combinations of GGBS and CEM I Portland Cement to Annex A of BS 8500-2:2015																																								
Spot samples of GGBS were taken and tested to determine conformity to the autocontrol requirements of EN 15167-1:2006 "Ground granulated blastfurnace slag for use in concrete, mortar and grout" following the methods given in that standard. The values reported are mean values for the monthly production period.			Portland Cement Source:																																								
Aboño GGBS Only			Limerick																																								
For combinations of GGBS supplied from the above works with the above CEM I Portland cement the permitted proportions conforming to the requirements given in annex A of BS 8500-2:2015 are:																																											
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Alkalis as Na ₂ O equ. (acid soluble)			N/A																																								
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<i>The stock CEM I Portland cement used in these tests was supplied by CEMENTOS TUDELA VEGUIN, S.A and the following results were obtained from that sample</i>			<i>Results of tests in accordance with BS EN 196-1 for 50% GGBS in combination with 50% CEM I Portland cement shown above</i>																																								
<table border="1"> <tbody> <tr> <td>Initial Setting Time min</td> <td>180</td> </tr> <tr> <td rowspan="2">Compressive Strength N/mm²</td> <td>7 days</td> <td>49.4</td> </tr> <tr> <td>28 days</td> <td>57.9</td> </tr> </tbody> </table>			Initial Setting Time min	180	Compressive Strength N/mm ²	7 days	49.4	28 days	57.9	<table border="1"> <thead> <tr> <th>Age</th> <th>7 Days</th> <th>28 Days</th> </tr> </thead> <tbody> <tr> <td>Compressive Strength N/mm²</td> <td>28.4</td> <td>49.1</td> </tr> </tbody> </table>		Age	7 Days	28 Days	Compressive Strength N/mm ²	28.4	49.1																										
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The GGBS contained no additional materials other than those permitted. The above results and other tests demonstrate the conformity of the material sold during the month to the requirements of EN 15167-1:2006.			<i>The samples of LKAB Minerals GGBS and the CEM I Portland cement were bulk average monthly samples for the works specified</i>																																								
LKAB Minerals Ltd are acting as a dispatching centre in the distribution of the above GGBS and further details and certification are available on request																																											
			0099/CPR/B34/0001																																								

Signed: