


<b>COMBINED CONFORMITY CERTIFICATE</b>			
Regen Ground Granulated Blastfurnace Slag Produced at		<b>IJMUIDEN</b>	Works
Despatched From		<b>GLASGOW</b>	Depot
Sample Period		<b>February 2017</b>	
<b>Certificate of Conformity of Regen GGBS to EN 15167-1:2006</b>		<b>Certificate of Conformity of Combinations of Regen GGBS and CEM I Portland Cement to Annex A of BS 8500-2:2015</b>	
Spot samples of Regen 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.			
Results		Product	EN Limit
Regen GGBS ONLY			
Fineness m <sup>2</sup> /kg	396	min. 275	
Magnesia MgO %	9	max. 18	
Sulfate SO <sub>3</sub> %	0.38	max 2.5	
Sulfide S <sup>2-</sup> %	0.90	max 2.0	
Chloride Content Cl <sup>-</sup> %	0.04	max 0.10	
Moisture Content %	0.03	max 1.0	
Alumina Al <sub>2</sub> O <sub>3</sub> %	13.7	to 1 dec	
Note: If the value is ≥ 14.5% the '+SR' restriction will be exceeded if the C <sub>3</sub> A of the CEM I is >10%.			
<i>Alkalis as Na<sub>2</sub>O equ. (acid soluble)</i>			
Guaranteed Alkali limit %	≤ 1.0		
Certified Average Alkali ( Last 25 ) %	0.79		
Declared Mean : Mean last 25 + ( SD last 25 x 1.64 ) %	0.89		
COMBINATION OF 50% LABORATORY STOCK CEM I PORTLAND CEMENT AND 50% Regen GGBS			
Initial Setting Time min.	180	not > than 2 x PC	
Activity Index %	7 days	72	min. 45
	28 days	96	min. 70
LABORATORY STOCK CEM I PORTLAND CEMENT ONLY			
The stock CEM I Portland cement used in these tests was supplied by Hanson Ribblesdale works and the following results were obtained from that sample			
Initial Setting Time min	135		
Compressive Strength N/mm <sup>2</sup>	7 days	51.5	
	28 days	64.5	
The Regen 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			
Portland Cement Source: <b>TARMAC : DUNBAR</b>			
For combinations of Regen 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:			
Strength Class	Not Less Than**	Not More Than**	
52.5L	6	49	
42.5L	46	78	
32.5L	73	80	
Conformity Evaluation Period (if less than 6 months)	n/a	month(s)	
Combination Designation (Table 1 BS 8500-2:2015)			
CIIS	6	35	
CIIIA	36	65	
CIIB	66	80	
** % GGBS			
Results of tests in accordance with BS EN 196-1 for 50% Regen GGBS in combination with 50% CEM I Portland cement shown above			
Age	7 Days	28 Days	
Compressive Strength N/mm <sup>2</sup>	28.7	63.5	
The samples of the Regen GGBS and the CEM I Portland cement were bulk average monthly samples for the works specified			
			
<b>0956 - CPR - 1102.90004</b>			

Signed: 