

COMBINED CONFORMITY CERTIFICATE

Regen Ground Granulated Blastfurnace Slag Produced at
Sample Period

PORT TALBOT SF
November 2016

Works

Certificate of Conformity of Regen GGBS to EN 15167-1:2006

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 ² /kg	429	min. 275
Magnesia MgO %	9	max. 18
Sulfate SO ₃ %	0.35	max 2.5
Sulfide S ²⁻ %	1.09	max 2.0
Chloride Content Cl ⁻ %	0.02	max 0.10
Moisture Content %	0.10	max 1.0
Alumina Al ₂ O ₃ %	12.8	to 1 dec
Note: If the value is ≥ 14.5% the '+SR' restriction will be exceeded if the C ₃ A of the CEM I is >10%.		
Alkalis as Na₂O equ. (acid soluble)		
Guaranteed Alkali limit %	≤ 1.0	
Certified Average Alkali (Last 25) %	0.71	
Declared Mean : Mean last 25 + (SD last 25 x 1.64) %	0.77	

COMBINATION OF 50% LABORATORY STOCK CEM I PORTLAND CEMENT AND 50% Regen GGBS

Initial Setting Time min.	190	not > than 2 x PC
Activity Index %	7 days	65
	28 days	91

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	140	
Compressive Strength N/mm ²	7 days	47.7
	28 days	59.9

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

Certificate of Conformity of Combinations of Regen GGBS and CEM I Portland Cement to Annex A of BS 8500-2:2015

Portland Cement Source:

CEMEX : RUGBY

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	n/a	n/a
42.5L	6	63
32.5L	52	77
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
CIIBB	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

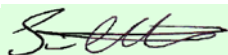
Age	7 Days	28 Days
Compressive Strength N/mm ²	29.4	54.8

The samples of the Regen GGBS and the CEM I Portland cement were bulk average monthly samples for the works specified



1333 – CPD – 00134

Signed:



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