

**Composition of Ground Granulated Blastfurnace Slag**

**Dunkirk EN 15167-1 GGBS  
(0099/CPR/B34/0001)**

Based on the **May 2024** monthly composite sample: 1872

Property			Value	BS EN 15167-1 Limit
Magnesia	MgO	%	7.61	≤ 18.0%
Sulfate	SO <sub>3</sub>	%	0.22	≤ 2.5%
Sulfide	S <sup>2-</sup>	%	0.79	≤ 2.0%
Chloride	Cl <sup>-</sup>	%	0.01	≤ 0.1%
Alkalis	Na <sub>2</sub> O <sub>eq</sub>	%	0.43	-
Alumina	Al <sub>2</sub> O <sub>3</sub>	%	11.4	≤ 14%*
Fineness	SSA	m <sup>2</sup> /kg	505	≥ 275 m <sup>2</sup> /kg
7 Day Activity Index – April Sample		%	53	>40%
28 Day Activity Index – April Sample		%	84	>65%
Declared Mean Alkali Content	Na <sub>2</sub> O <sub>eq</sub>	%		-
Declared Maximum Chloride Content	Cl <sup>-</sup>	%		-

**\*Upper limit in BS 8500 for use in '+SR' combinations**

For and on behalf of Tarmac Cement:

*S. Chudley*

**Simon Chudley**

**National Commercial Technical Manager  
Tarmac Cement**

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**Conformity of Ground Granulated Blast Furnace Slag to BS 8500-2: Annex B  
 Dunkirk EN 15167-1 GGBS  
 (1164-CPR-LGM002)**

Based on the composite samples for the Month of: May 2024

Constituent	Source
EN 15167-1 GGBS	Dunkirk
EN 197-1 CEM I	Aberthaw

The results of compressive strength testing (in accordance with BS EN 196-1) on a 50:50 blend of CEM I with GGBS were:

7 Day Strength (MPa)	27.5
28 Day Strength (MPa)	49.8

Based on equivalent results obtained for the last 3 Months, the permitted proportions of combinations conforming to the requirements of Annex B of BS 8500-2 are:

Strength Class of Combination	GGBS Content (%)	
	Min	Max
32,5L	43	75
42,5L	6	56
52,5L	6	22

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIS	6	35
CIIIA	36	65
CIIB	66	80

For and on behalf of Tarmac Cement:  
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 Dunkirk EN 15167-1 GGBS  
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Based on the composite samples for the Month of: May 2024

Constituent	Source
EN 15167-1 GGBS	Dunkirk
EN 197-1 CEM II/A-LL	Aberthaw

The results of compressive strength testing (in accordance with BS EN 196-1) on a 50:50 blend of CEM II/A-LL with GGBS were:

7 Day Strength (MPa)	30.4
28 Day Strength (MPa)	48.7

Based on equivalent results obtained for the last 3 Months, the permitted proportions of combinations conforming to the requirements of Annex B of BS 8500-2 are:

Strength Class of Combination	GGBS Content (%)	
	Min	Max
32,5L	42	73
42,5L	6	55
52,5L	--	--

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIS	6	35
CIIIA	36	65
CIIB	66	80

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Based on the composite samples for the Month of: May 2024

Constituent	Source
EN 15167-1 GGBS	Dunkirk
EN 197-1 CEM I	Cauldon

The results of compressive strength testing (in accordance with BS EN 196-1) on a 50:50 blend of CEM I with GGBS were:

7 Day Strength (MPa)	27.3
28 Day Strength (MPa)	48.7

Based on equivalent results obtained for the last 2 Months, the permitted proportions of combinations conforming to the requirements of Annex B of BS 8500-2 are:

Strength Class of Combination	GGBS Content (%)	
	Min	Max
32,5L	45	76
42,5L	6	57
52,5L	6	33

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIS	6	35
CIIIA	36	65
CIIB	66	80

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Based on the composite samples for the Month of: May 2024

Constituent	Source
EN 15167-1 GGBS	Dunkirk
EN 197-1 CEM I	Hope

The results of compressive strength testing (in accordance with BS EN 196-1) on a 50:50 blend of CEM I with GGBS were:

7 Day Strength (MPa)	28.8
28 Day Strength (MPa)	52.5

Based on equivalent results obtained for the last 3 Months, the permitted proportions of combinations conforming to the requirements of Annex B of BS 8500-2 are:

Strength Class of Combination	GGBS Content (%)	
	Min	Max
32,5L	50	76
42,5L	8	61
52,5L	6	34

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIS	6	35
CIIIA	36	65
CIIB	66	80

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Based on the composite samples for the Month of: May 2024

Constituent	Source
EN 15167-1 GGBS	Dunkirk
EN 197-1 CEM I	Lemona

The results of compressive strength testing (in accordance with BS EN 196-1) on a 50:50 blend of CEM I with GGBS were:

7 Day Strength (MPa)	28.3
28 Day Strength (MPa)	51.9

Based on equivalent results obtained for the last 4 Months, the permitted proportions of combinations conforming to the requirements of Annex B of BS 8500-2 are:

Strength Class of Combination	GGBS Content (%)	
	Min	Max
32,5L	48	80
42,5L	26	63
52,5L	6	39

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIS	6	35
CIIIA	36	65
CIIB	66	80

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Based on the composite samples for the Month of: May 2024

Constituent	Source
EN 15167-1 GGBS	Dunkirk
EN 197-1 CEM I	Limerick

The results of compressive strength testing (in accordance with BS EN 196-1) on a 50:50 blend of CEM I with GGBS were:

7 Day Strength (MPa)	27.8
28 Day Strength (MPa)	50.5

Based on equivalent results obtained for the last 4 Months, the permitted proportions of combinations conforming to the requirements of Annex B of BS 8500-2 are:

Strength Class of Combination	GGBS Content (%)	
	Min	Max
32,5L	50	76
42,5L	6	60
52,5L	6	36

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIS	6	35
CIIIA	36	65
CIIB	66	80

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Constituent	Source
EN 15167-1 GGBS	Dunkirk
EN 197-1 CEM I	Platin

The results of compressive strength testing (in accordance with BS EN 196-1) on a 50:50 blend of CEM I with GGBS were:

7 Day Strength (MPa)	27.7
28 Day Strength (MPa)	51.7

Based on equivalent results obtained for the last 4 Months, the permitted proportions of combinations conforming to the requirements of Annex B of BS 8500-2 are:

Strength Class of Combination	GGBS Content (%)	
	Min	Max
32,5L	48	77
42,5L	6	62
52,5L	6	33

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIS	6	35
CIIIA	36	65
CIIB	66	80

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Constituent	Source
EN 15167-1 GGBS	Dunkirk
EN 197-1 CEM I	Tunstead

The results of compressive strength testing (in accordance with BS EN 196-1) on a 50:50 blend of CEM I with GGBS were:

7 Day Strength (MPa)	26.8
28 Day Strength (MPa)	53.4

Based on equivalent results obtained for the last 4 Months, the permitted proportions of combinations conforming to the requirements of Annex B of BS 8500-2 are:

Strength Class of Combination	GGBS Content (%)	
	Min	Max
32,5L	52	77
42,5L	22	58
52,5L	6	41

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIS	6	35
CIIIA	36	65
CIIB	66	80

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