

**Composition of Ground Granulated Blastfurnace Slag**

**Tudela EN 15167-1 GGBS  
(0086-CPR-780512)**

Based on the **September 2024** monthly composite sample: 3467

Property			Value	BS EN 15167-1 Limit
Magnesia	MgO	%	7.18	≤ 18.0%
Sulfate	SO <sub>3</sub>	%	0.19	≤ 2.5%
Sulfide	S <sup>2-</sup>	%	0.80	≤ 2.0%
Chloride	Cl <sup>-</sup>	%	0.02	≤ 0.1%
Alkalis	Na <sub>2</sub> O <sub>eq</sub>	%	0.54	-
Alumina	Al <sub>2</sub> O <sub>3</sub>	%	11.45	≤ 14%*
Fineness	SSA	m <sup>2</sup> /kg	537	≥ 275 m <sup>2</sup> /kg
7 Day Activity Index – August Sample		%	67	>40%
28 Day Activity Index – August Sample		%	94	>65%
Declared Mean Alkali Content	Na <sub>2</sub> O <sub>eq</sub>	%	0.70	-
Declared Maximum Chloride Content	Cl <sup>-</sup>	%	0.05	-

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

For and on behalf of Tarmac Cement:



**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  
 Tudela EN 15167-1 GGBS  
 (0086-CPR-780512)**

Based on the composite samples for the month of: September 2024

Constituent	Source
EN 15167-1 GGBS	Tudela
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)	34.7
28 Day Strength (MPa)	54.3

Based on equivalent results obtained for the last **6** 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	47	80
42,5L	6	61
52,5L	6	29

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

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 Tudela EN 15167-1 GGBS  
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Based on the composite samples for the month of: September 2024

Constituent	Source
EN 15167-1 GGBS	Tudela
EN 197-1 CEM I	Lagerdorf

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)	37.6
28 Day Strength (MPa)	61.1

Based on equivalent results obtained for the last **12** 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	60	80
42,5L	28	69
52,5L	6	48

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

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 Tudela EN 15167-1 GGBS  
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Based on the composite samples for the month of: September 2024

Constituent	Source
EN 15167-1 GGBS	Tudela
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)	32.6
28 Day Strength (MPa)	57.0

Based on equivalent results obtained for the last 8 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	54	80
42,5L	21	66
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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 Tudela EN 15167-1 GGBS  
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Based on the composite samples for the month of: September 2024

Constituent	Source
EN 15167-1 GGBS	Tudela
EN 197-1 CEM II/A-L	Platin

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

7 Day Strength (MPa)	34.7
28 Day Strength (MPa)	54.9

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	56	80
42,5L	6	70
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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