

Tarmac Cement National Laboratory

Yelsway Lane
 Waterhouses
 Staffordshire
 ST10 3AZ

07/02/2025

Composition of Ground Granulated Blastfurnace Slag

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

Based on the **November 2024** monthly composite sample: 4375

Property			Value	BS EN 15167-1 Limit
Magnesia	MgO	%	7.29	≤ 18.0%
Sulfate	SO ₃	%	0.19	≤ 2.5%
Sulfide	S ²⁻	%	0.94	≤ 2.0%
Chloride	Cl ⁻	%	0.02	≤ 0.1%
Alkalis	Na ₂ Oeq	%	0.52	-
Alumina	Al ₂ O ₃	%	11.89	≤ 14%*
Fineness	SSA	m ² /kg	545	≥ 275 m ² /kg
7 Day Activity Index – October Sample		%	68	>40%
28 Day Activity Index – October Sample		%	101	>65%
Declared Mean Alkali Content	Na ₂ Oeq	%	0.70	-
Declared Maximum Chloride Content	Cl ⁻	%	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: November 2024

Constituent	Source
EN 15167-1 GGBS	Tudela
EN 197-1 CEM II/A-LL	Aberthaw (limestone content 10-14%)

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)	32.2
28 Day Strength (MPa)	53.4

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	49	80
42,5L	6	63
52,5L	6	33

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIIA	36	65
CIIB	66	80
CIIA-M	6	14
CIIB-M	6	29
CIIC-M	16	44
CVI	31	59

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

Constituent	Source
EN 15167-1 GGBS	Tudela
EN 197-1 CEM II/A-L	Hope (limestone content 12.5-16.5%)

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)	57.1

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	61	80
42,5L	6	69
52,5L	6	49

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIIA	36	65
CIIBB	66	80
CIIA-M	6	14
CIIB-M	6	29
CIIC-M	16	44
CVI	31	59

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Based on the composite samples for the month of: November 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)	33.5
28 Day Strength (MPa)	58.9

Based on equivalent results obtained for the last **10** 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	57	80
42,5L	26	68
52,5L	6	44

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: November 2024

Constituent	Source
EN 15167-1 GGBS	Tudela
EN 197-1 CEM II/A-L	Platin (limestone content 12-16%)

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)	33.5
28 Day Strength (MPa)	53.9

Based on equivalent results obtained for the last **5** 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	57	80
42,5L	6	70
52,5L	6	36

BS 8500-2 Combination Designation	GGBS Content (%)	
	Min	Max
CIIIA	36	65
CIIBB	66	80
CIIA-M	6	14
CIIB-M	6	29
CIIC-M	16	44
CVI	31	59

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