Tarmac Cement National Laboratory

Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

13/03/2026

Composition of Ground Granulated Blastfurnace Slag

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

Based on the **December 2025** monthly composite sample: 5748

Property			Value	BS EN 15167-1 Limit
Magnesia	MgO	%	7.44	≤ 18.0%
Sulfate	SO_3	%	0.24	≤ 2.5%
Sulfide	$S2^-$	%	0.82	≤ 2.0%
Chloride	Cl^-	%	0.02	≤ 0.1%
Alkalis	Na_2Oeq	%	0.43	-
Alumina	Al_2O_3	%	11.77	≤ 14%*
Fineness	SSA	m^2/kg	537	≥ 275 m^2/kg
7 Day Activity Index – Nov Sample		%	60	>40%
28 Day Activity Index – Nov Sample		%	90	>65%
Declared Mean Alkali Content	Na_2Oeq	%	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:

Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement

T3 Trinity Park, Bickenhill Lane,
Birmingham, B37 7ES
0345 812 6232 info-cement@tarmac.com

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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)	31.1
28 Day Strength (MPa)	53.0

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	51	80
42,5L	6	65
52,5L	6	36

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

For and on behalf of Tarmac Cement:
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Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

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Staffordshire
ST10 3AZ

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: December 2025

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

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

7 Day Strength (MPa)	30.4
28 Day Strength (MPa)	54.1

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	54	80
42,5L	12	69
52,5L	6	38

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

For and on behalf of Tarmac Cement:
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Senior Manager - Technical Commercial - Tarmac Cement
TARMAC.COM

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Staffordshire
ST10 3AZ

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: December 2025

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

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)	32.7
28 Day Strength (MPa)	55.8

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	62	80
42,5L	7	71
52,5L	6	48

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

For and on behalf of Tarmac Cement:
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Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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

7 Day Strength (MPa)	27.6
28 Day Strength (MPa)	56.2

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	54	80
42,5L	6	63
52,5L	6	25

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager - Technical Commercial - Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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)	30.0
28 Day Strength (MPa)	53.6

Based on equivalent results obtained for the last **7** 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	68
52,5L	6	37

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement Limited Registered in England and Wales. Company No. 66558
Registered address: T3 Trinity Park, Bickenhill Lane, Birmingham, B37 7ES

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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

7 Day Strength (MPa)	24.5
28 Day Strength (MPa)	53.2

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	56	80
42,5L	6	54
52,5L	6	43

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager - Technical Commercial - Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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)	35.4
28 Day Strength (MPa)	55.4

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	58	79
42,5L	6	66
52,5L	6	40

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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

7 Day Strength (MPa)	31.8
28 Day Strength (MPa)	55.5

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	58	80
42,5L	38	68
52,5L	6	47

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager - Technical Commercial - Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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)	32.3
28 Day Strength (MPa)	55.1

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	59	80
42,5L	26	69
52,5L	6	47

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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)	30.0
28 Day Strength (MPa)	54.1

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	58	80
42,5L	29	69
52,5L	6	45

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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)	31.0
28 Day Strength (MPa)	52.6

Based on equivalent results obtained for the last **7** 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	79
42,5L	6	64
52,5L	6	14

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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

7 Day Strength (MPa)	28.1
28 Day Strength (MPa)	54.1

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	55	80
42,5L	6	65
52,5L	6	36

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager - Technical Commercial - Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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

7 Day Strength (MPa)	34.1
28 Day Strength (MPa)	56.3

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	64	80
42,5L	6	72
52,5L	6	50

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager - Technical Commercial - Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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)	30.6
28 Day Strength (MPa)	53.1

Based on equivalent results obtained for the last **7** 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	72
52,5L	6	20

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement Limited Registered in England and Wales. Company No. 66558
Registered address: T3 Trinity Park, Bickenhill Lane, Birmingham, B37 7ES

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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)	31.4
28 Day Strength (MPa)	51.1

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	51	77
42,5L	6	62
52,5L	-	-

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
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Staffordshire
ST10 3AZ

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: December 2025

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

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

7 Day Strength (MPa)	30.1
28 Day Strength (MPa)	54.3

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	57	80
42,5L	6	68
52,5L	6	43

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager - Technical Commercial - Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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

Based on the composite samples for the month of: December 2025

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

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)	33.9
28 Day Strength (MPa)	55.5

Based on equivalent results obtained for the last **7** 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	59	80
42,5L	6	69
52,5L	6	44

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
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Staffordshire
ST10 3AZ

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

Based on the composite samples for the month of: December 2025

Constituent	Source
EN 15167-1 GGBS	Tudela
EN 197-1 CEM II/A-LL	Tunstead (limestone content 11-15%)

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)	32.9
28 Day Strength (MPa)	55.3

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	59	80
42,5L	6	68
52,5L	6	12

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager – Technical Commercial – Tarmac Cement
TARMAC.COM

Tarmac Cement National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

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: December 2025

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

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

7 Day Strength (MPa)	28.1
28 Day Strength (MPa)	54.5

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	32	68
52,5L	6	47

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

For and on behalf of Tarmac Cement:
Cristiana Morariu

Senior Manager - Technical Commercial - Tarmac Cement
TARMAC.COM