

Tarmac Cement
 National Laboratory
 Yelsway Lane
 Waterhouses
 Staffordshire
 ST10 3AZ

08/04/2026

Composition of Fly ash

Tudela Fly Ash EN 450-1 LOI Cat. B, Fineness Cat.N 0086-CPR-756089

Based on the **January 2026** monthly composite sample: 0292

Property			Value	BS EN 450-1 Limit
Fineness (Residue)	45µm	%	11.0	Declared Value 15% ± 10% (Tested in accordance with BS EN 450-1 cl. 5.3.1)
APD		g/cm ³	2.49	< 200kg/m ³ from declared value
28 Day Activity Index – Dec sample		%	78	>75%
90 Day Activity Index – Nov sample		%	90	>85%
Sulfate	SO ₃	%	1.01	≤ 3.0%
Loss on Ignition	LOI	%	6.20	≤ 7.0%
Chloride	Cl ⁻	%	0.019	≤ 0.1%
Calcium Oxide	CaO	%	7.78	≤ 10.0%
SiO ₂ + Al ₂ O ₃ + Fe ₂ O ₃	-	%	78.33	≥ 70.0%
Free Lime	-	%	0.27	≤ 1.5%
Alkalis	Na ₂ Oeq	%	0.71	≤ 5.0%
Declared Mean Alkali Content	Na ₂ Oeq	%	1.50	-
Declared Maximum Chloride Content	Cl ⁻	%	0.05	-

*BS EN 933-10:2009 method replacing the 63 µm sieve with a 45 µm sieve

For and on behalf of Tarmac Cement:



Cristiana Morariu

**Senior – Technical Commercial Manager
 Tarmac Cement**

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Conformity of Fly Ash to BS 8500-2: Annex B
Tudela EN 450-1 Fly Ash
0086-CPR-756089

Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Aberthaw

The results of compressive strength testing (in accordance with BS EN 196-1)
of a 70:30 blend of CEM I with Fly Ash were:

2 Day Strength (MPa)	19.8
28 Day Strength (MPa)	45.4

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	Fly Ash Content (%)	
	Min	Max
32,5N	13	35
42,5N	6	24

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIA-V	6	20
CIIB-V	21	35

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Tudela EN 450-1 Fly Ash
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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	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 70:30 blend of CEM II A-LL with fly ash were:

2 Day Strength (MPa)	17.8
28 Day Strength (MPa)	42.0

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	Fly Ash Content (%)	
	Min	Max
32,5N	13	41
42,5N	6	23

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIB-M	6	29
CIIC-M	16	44

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Tudela EN 450-1 Fly Ash
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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Cauldon

The results of compressive strength testing (in accordance with BS EN 196-1)
of a 70:30 blend of CEM I with Fly Ash were:

2 Day Strength (MPa)	22.5
28 Day Strength (MPa)	44.4

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	Fly Ash Content (%)	
	Min	Max
32,5N	16	35
42,5N	6	24

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIA-V	6	20
CIIB-V	21	35

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Tudela EN 450-1 Fly Ash
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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM II A-L	Cauldon

The results of compressive strength testing (in accordance with BS EN 196-1)
on a 70:30 blend of CEM II A-L with fly ash were:

2 Day Strength (MPa)	22.2
28 Day Strength (MPa)	46.7

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	Fly Ash Content (%)	
	Min	Max
32,5N	22	44
42,5N	6	30

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIB-M	6	29
CIIC-M	16	44

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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Dunbar

The results of compressive strength testing (in accordance with BS EN 196-1)
of a 70:30 blend of CEM I with Fly Ash were:

2 Day Strength (MPa)	16.6
28 Day Strength (MPa)	41.0

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	Fly Ash Content (%)	
	Min	Max
32,5N	18	35
42,5N	6	25

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIA-V	6	20
CIIB-V	21	35

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Tudela EN 450-1 Fly Ash
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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Largerndorf

The results of compressive strength testing (in accordance with BS EN 196-1)
on a 70:30 blend of CEM I with fly ash were:

2 Day Strength (MPa)	19.3
28 Day Strength (MPa)	48.1

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	Fly Ash Content (%)	
	Min	Max
32,5N	23	47
42,5N	6	32

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIB-M	6	29
CIIC-M	16	44

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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Lemona

The results of compressive strength testing (in accordance with BS EN 196-1)
on a 70:30 blend of CEM I with fly ash were:

2 Day Strength (MPa)	22.9
28 Day Strength (MPa)	48.8

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	Fly Ash Content (%)	
	Min	Max
32,5N	21	45
42,5N	6	32

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIB-M	6	29
CIIC-M	16	44

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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Limerick

The results of compressive strength testing (in accordance with BS EN 196-1)
of a 70:30 blend of CEM I with Fly Ash were:

2 Day Strength (MPa)	20.2
28 Day Strength (MPa)	43.2

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	Fly Ash Content (%)	
	Min	Max
32,5N	17	35
42,5N	6	25

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIA-V	6	20
CIIB-V	21	35

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Tudela EN 450-1 Fly Ash
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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Oggaz

The results of compressive strength testing (in accordance with BS EN 196-1)
on a 70:30 blend of CEM I with fly ash were:

2 Day Strength (MPa)	21.1
28 Day Strength (MPa)	46.6

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	Fly Ash Content (%)	
	Min	Max
32,5N	22	44
42,5N	6	30

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIB-M	6	29
CIIC-M	16	44

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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Platin

The results of compressive strength testing (in accordance with BS EN 196-1)
of a 70:30 blend of CEM I with Fly Ash were:

2 Day Strength (MPa)	20.0
28 Day Strength (MPa)	44.5

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	Fly Ash Content (%)	
	Min	Max
32,5N	16	35
42,5N	6	24

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIA-V	6	20
CIIB-V	21	35

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Constituent	Source
EN 450-1 Fly Ash	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 70:30 blend of CEM II A-L with fly ash were:

2 Day Strength (MPa)	17.4
28 Day Strength (MPa)	39.9

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	Fly Ash Content (%)	
	Min	Max
32,5N	10	36
42,5N	6	19

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIB-M	6	29
CIIC-M	16	44

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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Rugby

The results of compressive strength testing (in accordance with BS EN 196-1)
of a 70:30 blend of CEM I with Fly Ash were:

2 Day Strength (MPa)	19.9
28 Day Strength (MPa)	45.8

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	Fly Ash Content (%)	
	Min	Max
32,5N	20	35
42,5N	6	29

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIA-V	6	20
CIIB-V	21	35

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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	Tudela
EN 197-1 CEM I	Tunstead

The results of compressive strength testing (in accordance with BS EN 196-1)
of a 70:30 blend of CEM I with Fly Ash were:

2 Day Strength (MPa)	19.1
28 Day Strength (MPa)	45.6

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	Fly Ash Content (%)	
	Min	Max
32,5N	21	35
42,5N	6	30

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIA-V	6	20
CIIB-V	21	35

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Based on the composite samples for the month of: January 2026

Constituent	Source
EN 450-1 Fly Ash	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 70:30 blend of CEM II A-LL with fly ash were:

2 Day Strength (MPa)	20.9
28 Day Strength (MPa)	45.0

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	Fly Ash Content (%)	
	Min	Max
32,5N	11	42
42,5N	6	22

BS 8500-2 Combination Designation	Fly Ash Content (%)	
	Min	Max
CIIB-M	6	29
CIIC-M	16	44

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