

Tarmac Cement
 National Laboratory
 Yelsway Lane
 Waterhouses
 Staffordshire
 ST10 3AZ

03/09/2025

Composition of Fly ash

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

Based on the **June 2025** monthly composite sample: 2748

Property			Value	BS EN 450-1 Limit
Fineness (Residue)	45µm	%	9.1	Declared Value 15% ± 10% (Tested in accordance with BS EN 450-1 cl. 5.3.1)
APD		g/cm ³	2.53	< 200kg/m3 from declared value
28 Day Activity Index – May sample		%	80	>75%
90 Day Activity Index – Apr sample		%	95	>85%
Sulfate	SO ₃	%	**	≤ 3.0%
Loss on Ignition	LOI	%	3.99	≤ 7.0%
Chloride	Cl ⁻	%	0.01	≤ 0.1%
Calcium Oxide	CaO	%	7.38	≤ 10.0%
SiO ₂ + Al ₂ O ₃ + Fe ₂ O ₃	-	%	81.26	≥ 70.0%
Free Lime	-	%	0.38	≤ 1.5%
Alkalis	Na ₂ Oeq	%	0.95	≤ 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

** Not Available Currently.

For and on behalf of Tarmac Cement:



Cristiana Morariu

Senior Manager – Technical Commercial – 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: June 2025

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)	17.2
28 Day Strength (MPa)	43.4

Based on equivalent results obtained for the last **9** 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	43
42,5N	6	24

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: June 2025

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 II A-LL with fly ash were:

2 Day Strength (MPa)	22.5
28 Day Strength (MPa)	50.0

Based on equivalent results obtained for the last 1 month, 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	25	47
42,5N	6	34

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: June 2025

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)	18.9
28 Day Strength (MPa)	40.5

Based on equivalent results obtained for the last **9** 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	39
42,5N	6	21

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: June 2025

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)	21.2
28 Day Strength (MPa)	48.5

Based on equivalent results obtained for the last **9** 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	14	45
42,5N	6	25

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

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