Tarmac Cement
National Laboratory
Yelsway Lane
Waterhouses
Staffordshire
ST10 3AZ

24/07/2025

Composition of Fly ash

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

Based on the **April 2025** monthly composite sample: 1909

Property			Value	BS EN 450-1 Limit
Fineness (Residue)	45µm	%	9.5	Declared Value 15% ± 10% *(Tested in accordance with BS EN 450-1 cl. 5.3.1)*
APD		g/cm^3	2.54	< 200kg/m3 from declared value
28 Day Activity Index – Mar sample		%	80	>75%
90 Day Activity Index – Feb sample		%	95	>85%
Sulfate	SO_3	%	1.05	≤ 3.0%
Loss on Ignition	LOI	%	3.33	≤ 7.0%
Chloride	Cl^-	%	0.01	≤ 0.1%
Calcium Oxide	CaO	%	8.12	≤ 10.0%
$SiO_2 + Al_2O_3 + Fe_2O_3$	-	%	80.31	≥ 70.0%
Free Lime	-	%	0.46	≤ 1.5%
Alkalis	Na_2Oeq	%	1.08	≤ 5.0%
Declared Mean Alkali Content	Na_2Oeq	%	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 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: April 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)	16.9
28 Day Strength (MPa)	43.5

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	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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Tudela EN 450-1 Fly Ash
0086-CPR-756089

Based on the composite samples for the month of: April 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)	18.8
28 Day Strength (MPa)	43.2

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	11	40
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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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: April 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)	17.4
28 Day Strength (MPa)	44.2

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	13	44
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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