



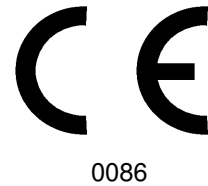
Fly ash Test Report

United Kingdom

Technical Department

Portland House
Bickenhill Lane, Solihull
Birmingham. B37 7BQ

Telephone: 0845 812 6400
Facsimile: 0845 812 6200



Date: 13 January 2012

West Burton Fly ash BS EN 450-1

Fineness category:S, Loss on ignition category:B

Monthly average data for **October 2011**

A) Physical and chemical properties of the fly ash sample

Test Property	Test result	BS EN 450-1
Fineness (%)	8.0	max 12.0
Sulfuric anhydride (%)	0.9	max 3.0
Loss on ignition (%)	4.1	2.0 to 7.0
Chloride (%)	0.00	max 0.1
Calcium oxide (%)	2.4	max 10.0
SiO ₂ +Al ₂ O ₃ +Fe ₂ O ₃ (%)	84.2	min 70.0
Free Lime (%)	0.0	max 1.0
Acid soluble alkali (%)	3.06	max 5.0

Additional information:

Colour index	4
Declared particle density (kg/m ³)	2320

B) Physical properties of a 25:75 blend of the fly ash with a reference Portland cement

PC Source: **Ribblesdale**

PC Initial setting time (min): **160**

PC 28 day strength (MPa) **58.9**

Test Property	Test result	BS EN 450-1
Water requirement (%)	93	max 95
Activity index @ 28 days	81	min 75
Initial Setting Time (min)	230	max 120min more than PC

Note: This report has been produced from data supplied by the manufacturer, Processing Ash LLP

For and on behalf of Lafarge Cement UK :

National Commercial Technical Manager

Lafarge Cement UK Ltd

Registered in England and Wales. Registered number 66558. Registered Office: Granite House, Granite Way, Syston, Leicester. LE1 1PL



United Kingdom

Certificate of Conformity to BS 8500-2 Annex A

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Solihull
Birmingham
B37 7BQ

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Aberthaw PC-RM, BS EN 197-1 CEM I 52,5N

prepared by Lafarge Cement UK

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	19.6 MPa
28 day strength	45.1 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	20	47
42,5 N	6	31

For and on behalf of Lafarge Cement UK :

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Cauldon PC-RM, BS EN 197-1 CEM I 52.5N

prepared by Lafarge Cement UK

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	19.1 MPa
28 day strength	41.7 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	16	42
42,5 N	6	26

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Dragon Alfa 42.5R

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	20.8 MPa
28 day strength	45.0 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	13	47
42,5 N	6	27

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Dunbar PC-RM, BS EN 197-1 CEM I 52,5N

prepared by Lafarge Cement UK

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	15.6 MPa
28 day strength	43.0 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	18	38
42,5 N	7	26

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Hope PC-RM, BS EN 197-1 CEM I 52,5N

prepared by Lafarge Cement UK

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	22.2 MPa
28 day strength	46.8 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	18	43
42,5 N	6	28

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Castle Ketton BS EN 197-1 CEM I 52.5N

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	20.6 MPa
28 day strength	48.5 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	16	45
42,5 N	6	28

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Castle Padeswood BS EN 197-1 CEM I 52.5N

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	20.0 MPa
28 day strength	42.9 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	15	41
42,5 N	6	25

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Paragon (Chatham) EN 197-1 CEM I 52.5N

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	15.1 MPa
28 day strength	46.0 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	22	45
42,5 N	9	32

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Castle Ribblesdale BS EN 197-1 CEM I 52.5N

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	22.6 MPa
28 day strength	49.9 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	17	43
42,5 N	6	28

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Cemex Rugby BS EN 197-1 CEM I 52.5N

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	20.8 MPa
28 day strength	44.3 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	16	40
42,5 N	6	25

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Cemex South Ferriby BS EN 197-1 CEM I 52.5N

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	17.6 MPa
28 day strength	40.6 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	12	36
42,5 N	6	21

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Date: **13 January 2012**

For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

Titan EN 197-1 CEM I 52.5N

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	19.6 MPa
28 day strength	41.0 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	14	37
42,5 N	6	24

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For a composite sample of

West Burton fly ash to BS EN 450-1

Fineness category:S, Loss on ignition category:B

prepared by Processing Ash LLP

and a composite sample of

BLI Tunstead BS EN 197-1 CEM I 52,5N

prepared by the manufacturer

each relating to product supplied during

October 2011

the results of test carried out in accordance with
BS 196-1 on a 70:30 blend of the CEM I with the
fly ash were

2 day strength	19.7 MPa
28 day strength	44.8 MPa

Based on equivalent results obtained for the last **12** months
the permitted proportion of combinations conforming with the requirements
of Annex A of BS 8500-2 are

Strength class of combination	fly ash content (as a percentage)	
	min	max
32,5 R	15	40
42,5 N	6	25

For and on behalf of Lafarge Cement UK :

National Commercial Technical Manager