

# Dunbrik A1 Concrete Flue Liners

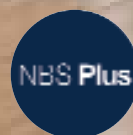
systems for domestic chimneys

## System Guide



Firebelly stove FB2  
woodburner in pewter

**dunbrik flues**  
domestic flue & chimney systems



Certificate No. FM24104

## Benefits of a Chimney

- A chimney adds appeal to a house
- A real fire turns a house into a home
- A natural draught flue promotes a healthier atmosphere

## Benefits of Dunbrik liner systems

- Full system from the specialist maker
- Detailed flue estimates prepared
- Systems designed for better flue flow
- Products designed for easier installation
- Liners meet latest, highest standards
- Expert technical backup

## Key System Features

- For domestic fires and stoves
- Can use all domestic fuel: coal, wood, oil and gas
- Round liners and full unrestricted bends for better flue flow and easier offsets
- Tested by BSRIA to European Standard
- Passed highest standard type A1 (T600 NI)
- Sootfire resistant to 1,000°C

## Liner Sizes

Sizes for firebacks, open grate fires, canopy hoods, inglenooks and stoves

- 200mm liners for fireplace openings up to 500mm by 550mm and stoves
- 300mm liners for fireplaces openings up to 685mm by 685mm
- 450mm liners for fireplaces openings up to 1,000mm by 1,000mm

## Services

- Flue estimating service
- Installation guides on the web or by post
- Products available from merchant stockists in the UK

**Dunbrik (Yorks) Ltd**  
Ferry Lane,  
Stanley,  
Wakefield,  
West Yorkshire.  
WF3 4LT

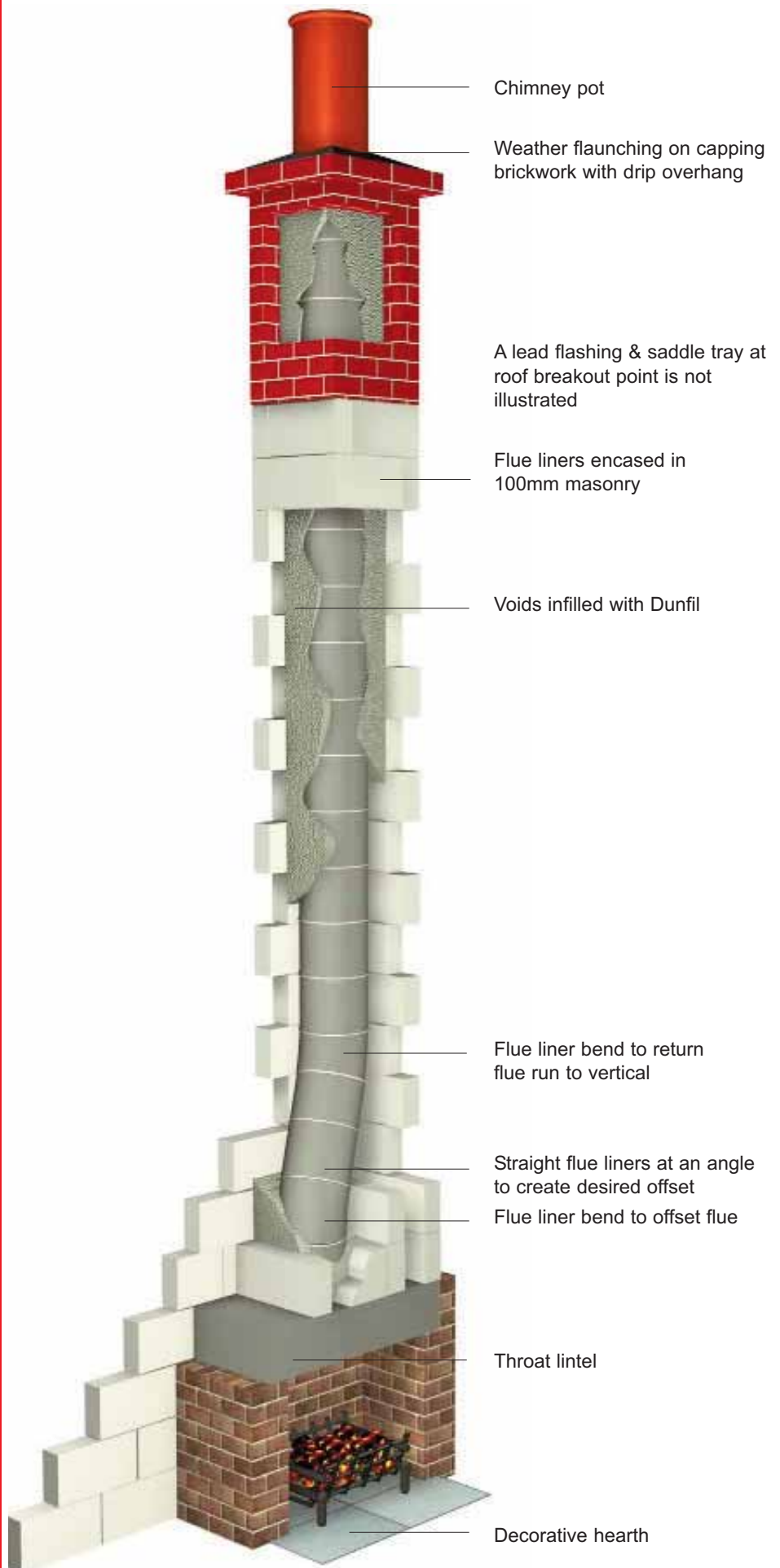
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# Dunbrik A1 Concrete Flue Liners

systems for domestic chimneys

## SYSTEM DETAILS AND DESIGN GUIDANCE



Example of 300mm round flue with open grate fire



Traditional Fireplace



Stove with pipe connection  
Courtesy of Dunsley Heating



Inglenook with canopy hood  
Courtesy of Potton

## Dunbrik A1 Concrete Flue Liners systems for domestic chimneys

### SYSTEM DETAILS AND DESIGN GUIDANCE

The Dunbrik A1 Concrete Flue Liner Systems are used in the construction of domestic chimneys suitable for all types of domestic fires. A domestic chimney is a structure made with a minimum of 100mm thick masonry lined with purpose made flue liners. Householders can burn any domestic fuel including coal and properly seasoned wood or install any domestic gas fire including flame effect fires.

#### Flue Liner Ranges

Dunbrik flue liners are available in three round sizes – 200mm, 300mm and 450mm internal diameter. These allow for the following fireplace opening sizes for burning domestic fuels.

Internal flue diameter mm	Flue cross section 1000 sq mm	Maximum lintel span mm	Recess depth mm	Maximum recess area 1000 sq mm	Typical recess width & height mm
200	31	600	375	265	500 by 550
300	71	800	475	471	685 by 685
450	159	1,100	625	1,060	1,000 by 1,000

#### Flue Liners

Dunbrik concrete liners are made with tongue and socket joints for accurate location and tight jointing. They are manufactured from kiln burnt aggregate and Portland cement and are designed to withstand repeated temperature fluctuations.

Flue liners should be joined with Dunseal fire proof mortar paste. Allow approximately 3 joints per cartridge for 200mm liners, 2 joints for 300mm liners and 1 joint for 450mm liners. Any void between flue liners and masonry surround should be filled with Dunfil insulating infill.



#### Liner Standards

British Standard BS EN 1857:2003 established performance standards for concrete flue liners for domestic chimneys. Dunbrik liners have been tested by BSRIA and achieved the highest categories in each class as follows:

#### Dunbrik Type A1 - T600 N1 G D 3

##### Performance data

<b>T600</b>	Temperature	nominal operating temperature 600°C
<b>N1</b>	Gas tightness	negative pressure test at 40 Pascal
<b>G</b>	Sootfire resistance	heat shock tested to 1,000°C for 30 minutes
<b>D</b>	Condensate resistance	for dry flue conditions
<b>3</b>	Corrosion resistance	for all domestic fuels (new scrub test for durability)

UK Building Regulations 2000 ADJ 2002

Dunbrik A1 Concrete Flue Liners meet the minimum standards set in ADJ 2002 and exceed the requirements for temperature and gas tightness.

**dunbrik flues**  
domestic flue & chimney systems

# Dunbrik A1 Concrete Flue Liners

## systems for domestic chimneys

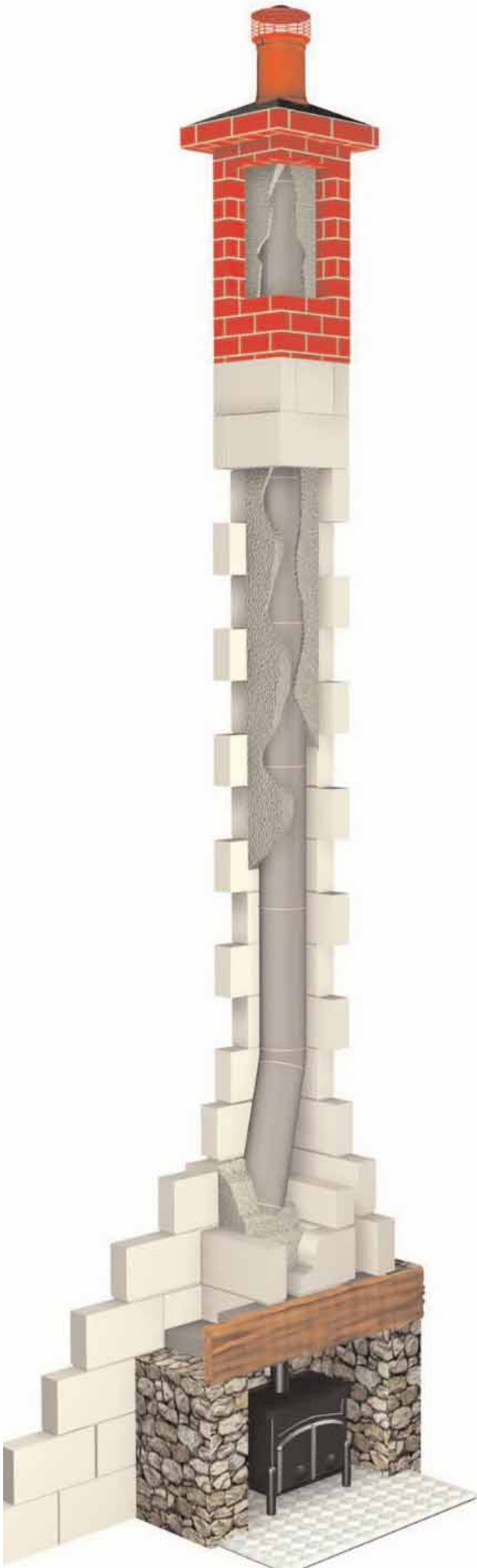
### SYSTEM DETAILS AND DESIGN GUIDANCE

#### Bends in Flues

A flue liner bend is used to create an offset to align the flue with house walling or to reach a chimney pot position. The bends can be rotated to offset the flue in any direction, avoiding the need for additional sets of bends and further sweeping access. Bends must not exceed an angle of 45 degrees.

The following table sets out the offset achieved with each pair of liner bends and the additional offset with each straight liner inserted between the bends.

System	Angle of Bend	Component	Horizontal flue offset mm	Vertical flue height mm
200mm	22.5 deg	200B pair with 200L600 with 200L230 with 200L150	55 add 240 add 85 add 60	304 add 554 add 210 add 139
300mm	30 deg	300B pair with 300L230 with 300L150	125 add 120 add 70	425 add 200 add 120
450mm	22.5 deg	450B pair with 450L230 with 450L150	65 add 85 add 55	330 add 215 add 145



Example of 200mm round flue with stove



Rotate bend to desired offset direction



Typical offset using 2 liner bends and a 200L600 mm straight liner

#### Flue Estimates

We can provide you with a flue estimate to suit most configurations of dwelling and flue size. Please complete our estimate request form or telephone our technical staff with your details for an estimate.

#### Components and installation

Components are available from merchant stockists in the UK. Please call 01924 373694 for your nearest stockist. An installation guide for our products is available on our website [www.dunbrik.co.uk](http://www.dunbrik.co.uk), by fax or post.

# Dunbrik A1 Concrete Flue Liners

## systems for domestic chimneys

### COMPONENTS



Standard  
height flue  
liner

200L600



200L230  
300L230  
450L230

Short flue  
liner



200L150  
300L150  
450L150



Flue liner  
bend

200B  
300B  
450B



Throat lintel/Gather unit

200TL800  
300TL1000  
450TL1300



Raft lintel

200CH1200  
300CH1200

Shapes vary with the different flue  
sizes and bend angles

#### 200mm round liner system For fireplace openings up to 500mm by 550mm and stoves with up to 200mm ext. diameter pipe connection

	Product Code	Weight kg	Internal Diameter mm	External Diameter mm	Width x Depth mm	Height mm
Straight flue liner - 600mm tall	200L600	20.4	200	260	-	600
Straight flue liner - 230mm tall	200L230	8.0	200	260	-	230
Straight flue liner - 150mm tall	200L150	5.6	200	260	-	150
Liner bend 22.5 degree	200B	4.9	200	260	-	200
Throat lintel 800mm wide	200TL800	74	-	-	800 x 375	220
Raft lintel for stove connection	200CH1200	84	-	-	1200 x 510	150
Milner fireback - 450mm	450FB	38	-	-	450 x 175	570
Cannon head chimney pot	Cann300	9.2	260	300	-	300
Topguard steel cowl 260mm tall	TG260	1.6	220	290	-	260

Taller cannon pots and other designs of chimney pot are also available

#### 300mm round liner system For fireplace openings up to 471,000sq mm

	Product Code	Weight kg	Internal Diameter mm	External Diameter mm	Width x Depth mm	Height mm
Straight flue liner - 230mm tall	300L230	10.5	300	360	-	230
Straight flue liner - 150mm tall	300L150	6.4	300	360	-	150
Liner bend 30 degree	300B	9.3	300	360	-	189
Throat lintel 1000mm wide	300TL1000	114	-	-	1000 x 475	220
Raft lintel for canopy hood	300CH1200	79	-	-	1200 x 510	150
300mm round straight pot	300RST750	51	300	360	-	750
Topguard steel cowl 350mm wide	TG350	2	360	-	-	245

#### 450mm round liner system For fireplace openings up to 1,060,000sq mm

	Product Code	Weight kg	Internal Diameter mm	External Diameter mm	Width x Depth mm	Height mm
Straight flue liner - 230mm tall	450L230	15.6	450	510	-	230
Straight flue liner - 150mm tall	450L150	11.0	450	510	-	150
Liner bend 22.5 degree	450B	11.1	450	510	-	247
Throat lintel 1300mm wide	450TL1300	194	-	-	1300 x 625	220
450mm round straight pot	450RST900	105	450	510	-	900
Topguard steel cowl 500mm wide	TG500	3.7	505	-	-	395

Square liners are also available, details upon request.

#### Ancillary items

	Product Code	Weight kg
Liner sealant 310ml cartridge	Dunseal	0.6
Chimney infill aggregate	Dunfil	22
Smoke pellets	Smoke	-
Flue notice plate	Plates	-

All dimensions are nominal. Specifications may be altered without prior notice.

# General Chimney Design and Regulation Guidance

The following may be of assistance in your chimney design and includes references to information sources.

## Regulations

A chimney should be designed and built by a competent person with knowledge of regulations and building practices. The detailed requirements are set out for England and Wales in Approved Document J 2002 (ADJ); there are similar regulations, with some variation, in Scotland and Northern Ireland. Guidance is also given in NHBC guide, chapter 6.8 and the Lead Sheet Association guide.

## Chimney Dimensions and Clearances

A chimney height of 4.5m or over is normally sufficient for flue draught. The depth of the chimney foundations should be the same as any adjacent wall foundation. In order to provide stability, masonry chimneys should be bonded to, or supported by, adjoining walls of the building. The masonry should be suitable brick, medium weight blocks or stone and mortar jointed.

The minimum required wall thickness for a masonry chimney is 100mm and 200mm in the wall adjacent to another compartment or dwelling - see ADJ diagram 2.4. Combustibles must be at least 200mm away from the inside face of the flue liner or have a 40mm air gap from the outside face of the chimney - see ADJ diagram 2.5.

## Chimney Lining

The chimney should be lined with suitable liners and purpose made bends. Joints should be kept to a minimum and sealed with fire cement. Liner joints should be installed with the tongue pointing downward into the socket to contain moisture and condensate in the flue. Any voids between liners and masonry should be filled in accordance with manufacturer's instructions.

## Bends in Flues

A flue liner bend is used to create an offset to align the flue with house walling or to reach a chimney pot position. The number of bends should be kept to a minimum for better draw efficiency and to enable sweeping access. They are also used to prevent vertical rain ingress, but this can also be achieved with a suitable cowl.

Where more than two bends at 45 degrees are used in a flue, additional sweeping access is required by ADJ 1.48. Bends must not exceed an angle of 45 degrees.

## Hearths

A constructional hearth should be made of solid, non-combustible material such as concrete or masonry at least 125mm thick. No combustible material should be placed underneath a constructional hearth unless there is an air space of 50mm or more or the combustible material is at least 250mm below the top of the hearth. A finished / decorative hearth should be at least 12mm thick and made of non-combustible board/sheet material or tiles. For further information refer to ADJ sections 2.22 to 2.29 and 3.40 to 3.42.

## Fireplace Recess

The fireplace recess should be constructed of solid non-combustible material. Internal solid walls and jambs should be at least 200mm thick and cavity walls should have at least 100mm thick leaves and 50mm cavity.

Material in the cavity behind the fireplace should be non-combustible. For an open fire the fireplace recess should be at least 350mm deep. For solid fuel, ADJ suggests a minimum recess size of 500mm by 550mm using 200mm diameter liners and for larger openings, a flue cross sectional area of 15% of the face area of the fireplace.

## Chimney Stack and Outlets

The height of an unrestrained chimney stack should not exceed 4.5 times the smallest plan dimension of the chimney stack. For heights of chimney stacks in Scotland consult the Scottish Regulations part F 4-10. Please refer to ADJ section 2.10 and diagram 2.1 for recommended positions of the flue outlet above the roof. Details of clearances above easily ignitable roof coverings such as thatched roof are set out in ADJ 2.12 diagram 2.2.

## Weather Proofing

A chimney needs to be made weather proof with mortar flaunching around the chimney pot on a brick or concrete capping with drip overhang. Mortar used for the chimney and flaunching should be resistant to rain and frost. Lead flashings are needed at the junction with roof tiles and brickwork to prevent water penetration. A saddle tray damp proof course should be installed across the full span of the stack at the intersection with the roof to prevent water seeping down the chimney. Details of lead saddle trays and flashings are available from the Lead Sheet Association, tel: 01622 872432.

## Air Supply For Combustion

An appliance needs an air supply for combustion so the flue can operate properly. ADJ sets out the air supply requirements; general in section 1, solid fuel in section 2, gas appliances in section 3, and oil burning appliances in section 4. Typical examples are available from the Dunbrik website or by post or fax. Some variations occur in the Regulations for Scotland, Ireland and Northern Ireland.

## Dunbrik Technical Advice

For further guidance or advice on Dunbrik products contact us, telephone on 01924 373694 or fax on 01924 332878 email at [tech@dunbrik.co.uk](mailto:tech@dunbrik.co.uk), web site [www.dunbrik.co.uk](http://www.dunbrik.co.uk).