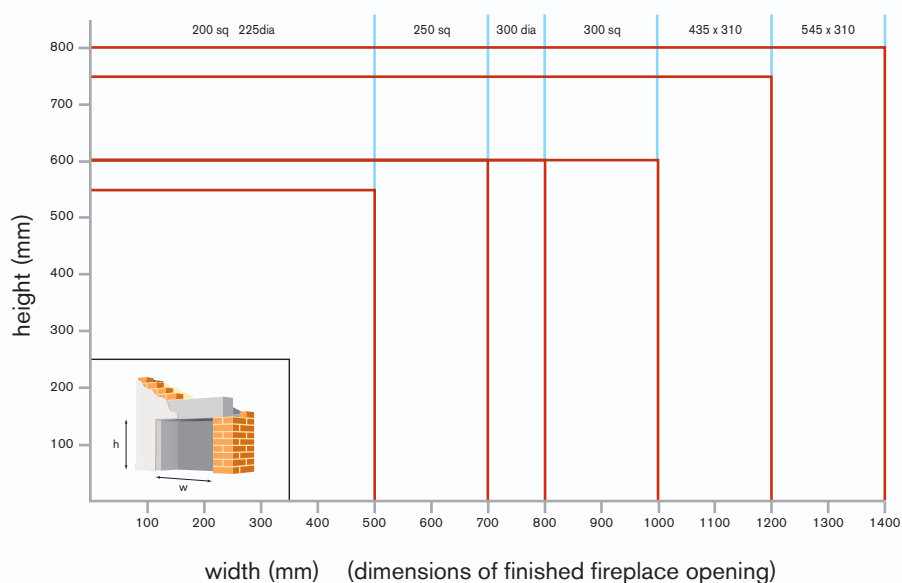
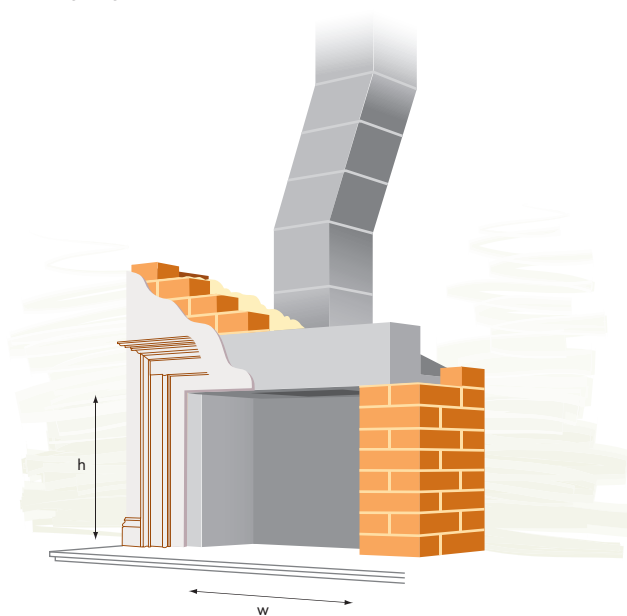


Every chimney is unique...

and it's the size that matters... When considering the construction of a chimney for use with solid fuels, it is important to firstly establish the size of fireplace opening you require. From this the flue liner size can be specified.

The table and chart below give an indication as to the size of flue liner required, relative to the size of fireplace opening. Specifically, the internal cross-sectional area of the flue lining should be 15% of the cross-sectional area of the finished fireplace opening. The fireplace and flue system can then be constructed in accordance with approved Building Regulations.

fireplace opening w (mm)	fireplace opening h (mm)	flue size	cross-sectional area mm ² of flue
500	550	200 x 200mm int. square liners 225mm int. dia. circular liners	40,000 39,761
700	600	250 x 250mm int. square liners	62,500
800	600	300mm int. dia. circular liners	70,686
1000	600	300 x 300mm int. square liners	90,000
1200	750	435 x 310mm int. rectangular liners	134,850
1400	800	545 x 310mm int. rectangular liners	168,950



Size of Flue

To determine the size of the flue liner calculate the cross sectional area of the finished fireplace opening:
 $\text{Width} \times \text{height} = \text{area mm}^2$
 $\text{Area mm}^2 \times 15\% = \text{cross sectional area of flue lining.}$

For smaller size Class 1 Flues suitable for use with solid fuel appliances refer to Clay Class 1 Flue Liner Brochure.

Approved Document 'J' (ADJ)

2002 Edition to the Building Regulations 2000

Hanson Red Bank's range of concrete flue liners are manufactured in accordance with BS EN 1857 'Chimneys - Components - Concrete Flue Liners' as required under ADJ 'Combustion Appliances and Fuel Storage Systems'.

A chimney flue system correctly constructed using such components will attain Building Regulations approval.

For each chimney flue system it is an important requirement that the installer completes a 'Checklist' and 'Notice Plate'.

The Checklist is then offered to interested parties as an indication that the construction of the flue has been completed in accordance with regulatory requirements. The Notice Plate, which should be robust and indelibly marked, must be securely fixed in a permanent position within the building. This Notice Plate contains information essential to the correct application and use of the flue.

A 'Checklist and Notice Plate Pack' list no. NP1, is available.

This contains a checklist, notice plate and self-sealing laminate cover together with guidance notes on completion and detailed recommendation with regards to installation, inspection and testing procedures.



Contents

2	Size of Flue
3	Building Regulations
4	200 x 200mm int. Square
5	225mm int. dia. Circular
6	250 x 250mm int. Square
7	300mm int. dia. Circular
8	300 x 300mm int. Square
9	435 x 310mm int. Rectangular
10	545 x 310mm int. Rectangular
11-12	Ancillary items
13	Offset Calculations
14-15	Technical Application Notes



All dimensions are in mm, drawings not to scale and all sizes nominal. The colours in this brochure are as true as can be obtained by the normal printing process. Hanson Red Bank is committed to a program of continuous product development and reserve the right to alter specifications without prior notification. For further product information or assistance please telephone our freephone sales line: (0800) 3285243.

Typical construction of 200 x 200mm int. Square Flues

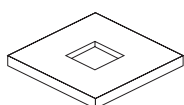
- 175** 300mm & 450mm high Type 4D
Square to Round Flue Terminal
200 x 200mm int. square base
to 200mm int. dia. circular top



- 129** 300mm & 450mm high
200 x 200mm int. Square
beaded Flue Terminal



- RM4** 650 x 650mm Capping Block
275mm square hole



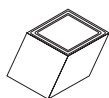
- RM25** 45° 200 x 200mm int. Square
Rebated Flue Lining Bend



- RM2** 70mm Offset Unit (170mm high)

- RM3** 90mm Offset Unit (170mm high)

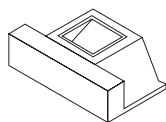
- RM5** 50mm Offset Unit (170mm high)



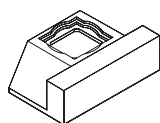
- RM1** 200 x 200mm int. Square
Rebated Flue Lining (225mm high)



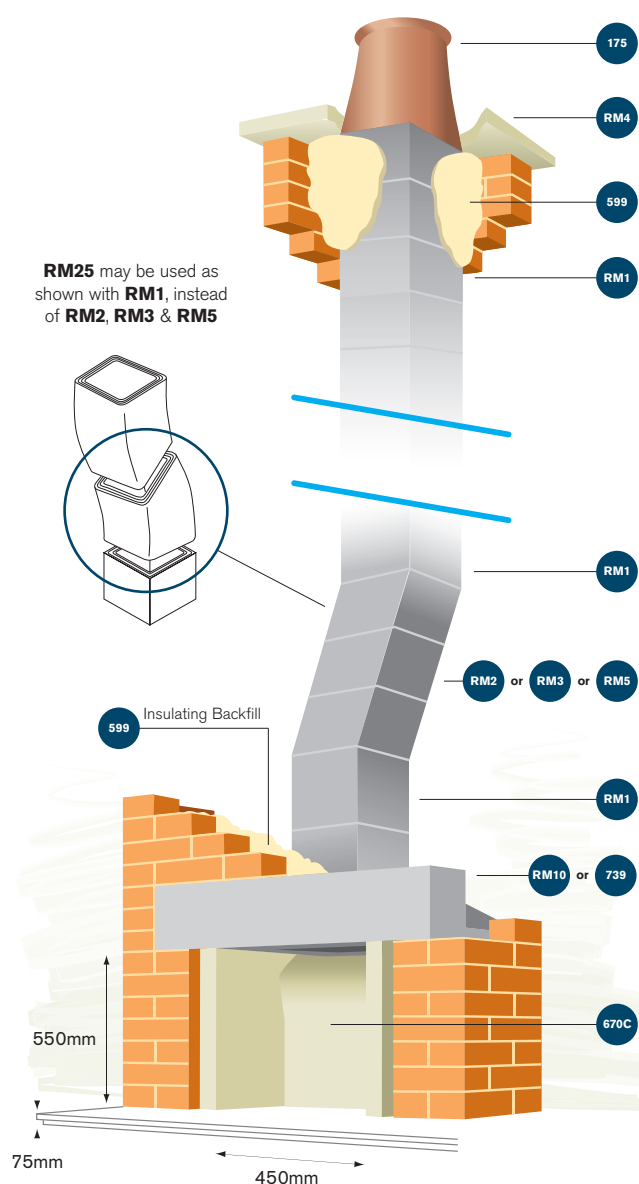
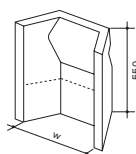
- RM10** 800mm wide Fyrelintel
800mm(w) x 222mm(h) x 405mm(d)



- 739** 690mm wide Fyrelintel
690mm(w) x 215mm(h) x 405mm(d)



- 670C** 400mm & 450mm Milner Scored Fireback
Height 550mm
Width (w) 375mm (for 400mm)
Width (w) 425mm (for 450mm)






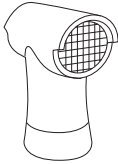
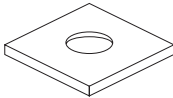



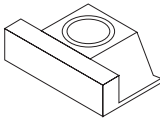
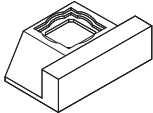
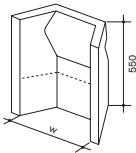
Ventilation required for nominal 450mm wide finished fire opening containing fireback 18,500mm² permanently open free air space provided by 2 no. 215 x 215mm Rectangular Hole Air Bricks list no. 374, each providing 10,250mm² free air space and 2 no. 215 x 215mm Horizontal Cavity Wall Bridging Ducts list no. 402.

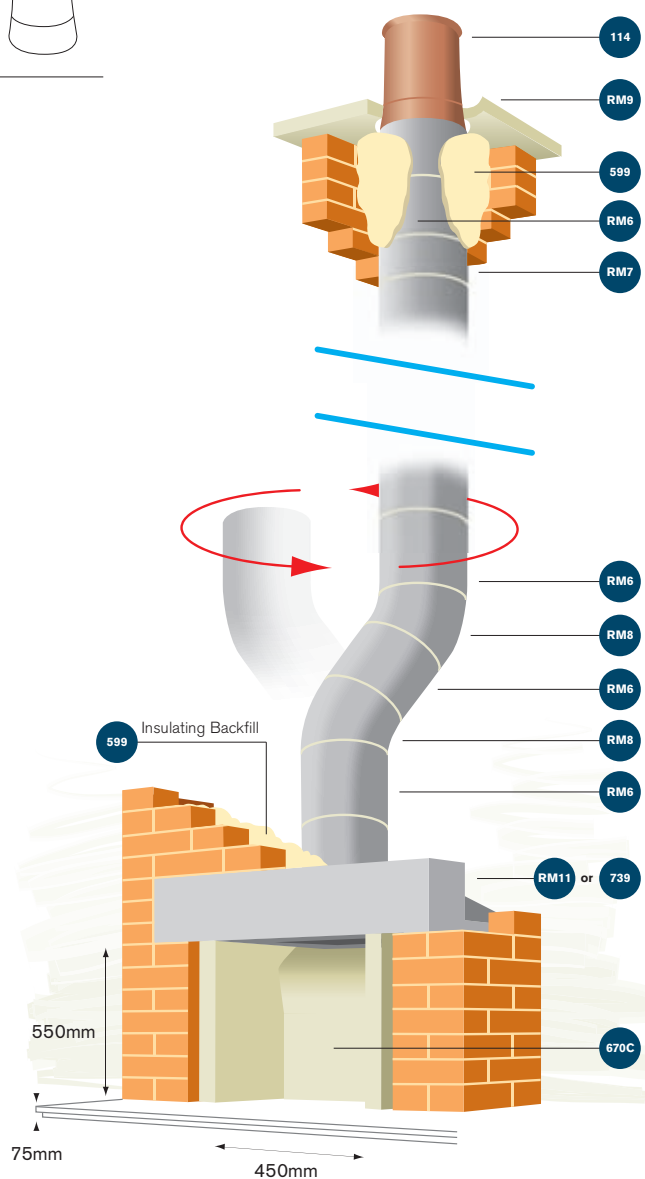
Refer to page 11 for ancillary items, list no. **RF28, 597, 599, 374 and 402**. Refer to page 13 for offset calculation chart.

Note the mandatory requirement to use fireproof mortar (list nos. RF28 and 597) for jointing flue liners, and insulating backfill (list no. 599), or similar, to fill the void between flue lining and supporting masonry.



Typical construction of 225mm int. dia. Circular Flues

33	300mm, 450mm & 600mm high Circular Beaded Flue Terminal 225mm int. dia.		114	300mm, 450mm & 600mm high Contemporary Cannon Head Pot 265mm int. dia. base 200mm int. dia. top	
43	375mm high Rook Pot		147	600mm high Decorative Fuel Effect Pot with birdguard 400mm barrel depth	
RM9	650 x 650mm Capping Block, 325mm dia. hole				
RM8	30° 225mm int. dia. Circular Rebated Flue Lining Bend				
RM7	225mm int. dia. Circular Rebated Flue Lining (150mm high)				
RM6	225mm int. dia. Circular Rebated Flue Lining (225mm high)				
RM11	800mm wide Fyrelintel 800mm(w) x 222mm(h) x 405mm(d)				
739	690mm wide Fyrelintel 690mm(w) x 215mm(h) x 405mm(d)				
670C	400mm & 450mm Milner Scored Fireback Height 550mm Width (w) 375mm (for 400mm) Width (w) 425mm (for 450mm)				



Ventilation required for nominal 450mm wide finished fire opening 18,500mm² permanently open free air space provided by 2 no. 215 x 215mm Rectangular Hole Air Bricks list no. 374, each providing 10,250mm² free air space and 2 no. 215 x 215mm Horizontal Cavity Wall Bridging Ducts list no. 402.

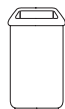
Refer to page 11 for ancillary items, list no. **RF28, 597, 599, 374 and 402**. Refer to page 13 for offset calculation chart.

Note the mandatory requirement to use fireproof mortar (list nos. RF28 and 597) for jointing flue liners, and insulating backfill (list no. 599), or similar, to fill the void between flue lining and supporting masonry.



Typical construction of 250 x 250mm int. Square Flues

- 129** 300mm & 450mm
high 250 x 250mm
int. Square Beaded
Flue Terminal



- 175** 300mm & 450mm
high Square to Round
Terminal 250 x 250mm
int. square base 250mm
int. dia. circular top



- 88** 850mm high
Hooded Square
Chimney Pot
250 x 250mm
int. square base



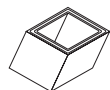
- RM17** 45° 250 x 250 mm int. Square
Rebated Flue Lining Bend



- RM13** 70mm Offset Unit (170mm high)

- RM14** 90mm Offset Unit (170mm high)

- RM15** 50mm Offset Unit (170mm high)



- RM12** 250 x 250mm int. Square
Flue Lining (225mm high)



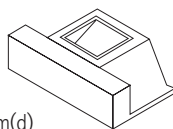
- RM21** Adaptor to suit 225mm int. dia.
circular flues for use with
RM18/19 (225mm high)



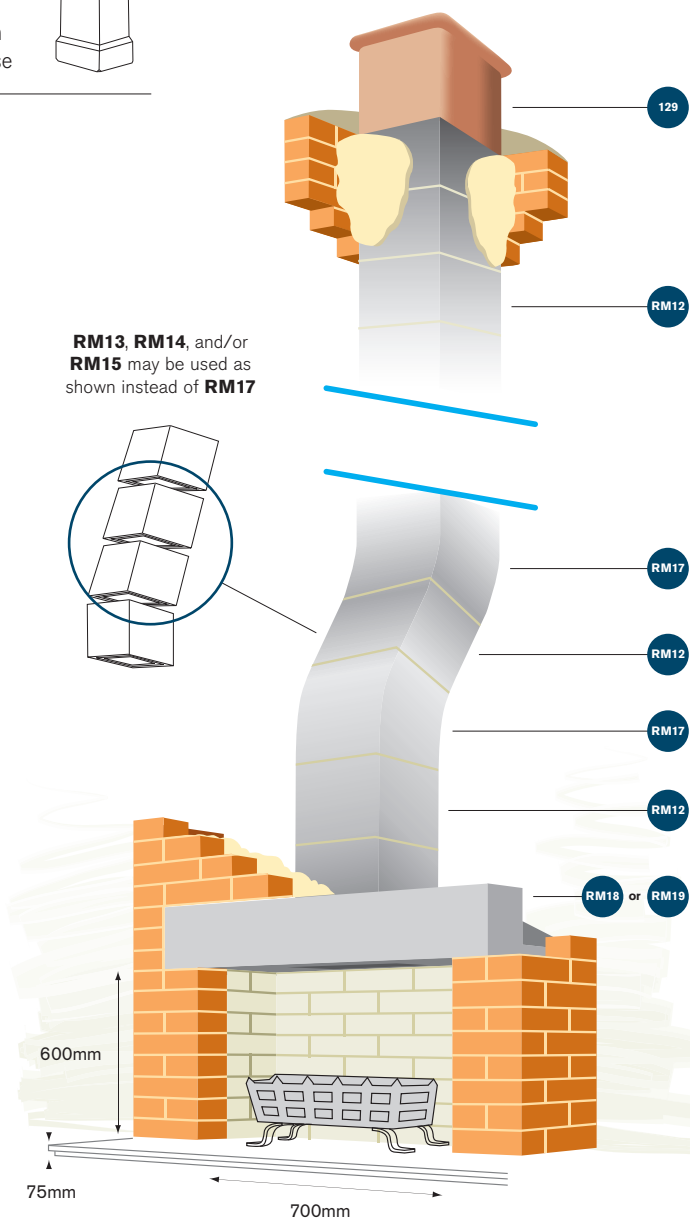
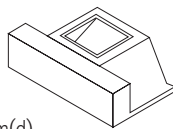
- RM20** Adaptor to suit 200 x 200mm
int. square flues for use with
RM18/19 (225mm high)



- RM19** 960mm wide Fyrelintel
960mm(w) x 300mm(h) x 440mm(d)



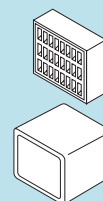
- RM18** 800mm wide Fyrelintel
800mm(w) x 215mm(h) x 440mm(d)



Ventilation required for 250 x 250mm int. square flue linings 31,250mm² permanently open free air space provided by 3 no. 215 x 215mm Rectangular Hole Air Bricks list no. 374, each providing 10,250mm² free air space and 3 no. 215 x 215mm Horizontal Cavity Wall Bridging Ducts list no. 402.

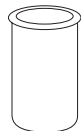
Refer to page 11 for ancillary items, list no. **RF28, 597, 599, 374 and 402**. Refer to page 13 for offset calculation chart.

Note the mandatory requirement to use fireproof mortar (list nos. RF28 and 597) for jointing flue liners, and insulating backfill (list no. 599), or similar, to fill the void between flue lining and supporting masonry.

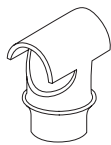


Typical construction of 300mm int. dia. Circular Flues

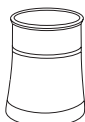
33 300mm, 450mm & 600mm high Circular Beaded Flue Terminal 300mm int. dia.



146 D.F.E Insert 275mm ext. dia. spigot



134 300mm, 450mm & 600mm high Contemporary Cannon Head Pot 375mm int. dia. base 300mm int. dia. top



RM31 300mm int. dia. Circular Rebated Flue Lining (150mm high)



RM33 45° 300mm int. dia. Circular Rebated Flue Lining Bend



RM32 22.5° 300mm int. dia. Circular Rebated Flue Lining Bend

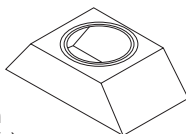


RM30 300mm int. dia. Circular Rebated Flue Lining (225mm high)

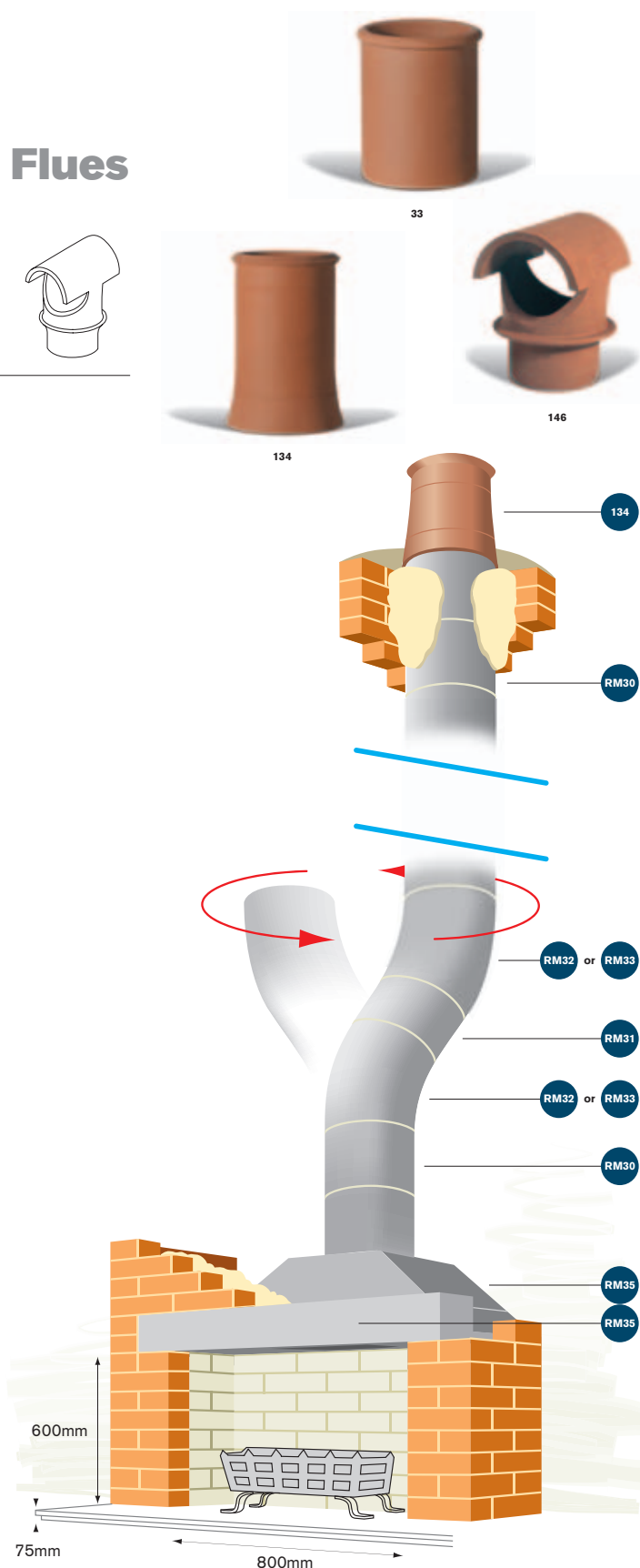
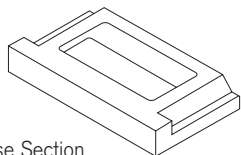


RM35 960mm wide Fyrelintel to suit 300 mm int. dia. Circular Flue Linings, Supplied in two parts:

746mm wide Fyrelintel Top Section
746mm(w) x 215mm(h) x 415mm(d)



960mm wide Fyrelintel Base Section
960mm(w) x 140mm(h) x 535mm(d)



Ventilation required for 300mm int. dia. circular flue linings 35,357mm² permanently open free air space provided by 4 no. 215 x 215mm Rectangular Hole Air Bricks list no. 374, each providing 10,250mm² free air space and 4 no. 215 x 215mm Horizontal Cavity Wall Bridging Ducts list no. 402.

Refer to page 11 for ancillary items, list no. **RF28, 597, 599, 374 and 402**. Refer to page 13 for offset calculation chart.

Note the mandatory requirement to use fireproof mortar (list nos. RF28 and 597) for jointing flue liners, and insulating backfill (list no. 599), or similar, to fill the void between flue lining and supporting masonry.



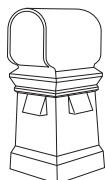
Typical construction of 300 x 300mm int. Square Flues

175 300mm & 450mm high Square to Round Terminal, 300 x 300mm int. square base to 300mm int. dia. circular top



88

875mm high Hooded Square Chimney Pot 300 x 300mm int. square base



129



175



88

129 300mm & 450mm high 300 x 300mm int. Square Beaded Flue terminal



RM39 45° 300 x 300 int. Square Rebated Flue Lining



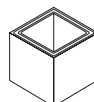
RM38 22.5° 300 x 300 int. Square Rebated Flue Lining



RM37 300 x 300mm int. Square Rebated Flue Lining (150mm high)

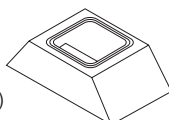


RM36 300 x 300mm int. Square Rebated Flue Lining (225mm high)

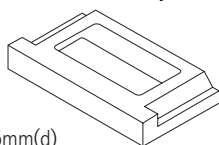


RM40 960mm wide Fyrelintel to suit 300 x 300 mm int. Square Flue Linings Supplied in two parts:

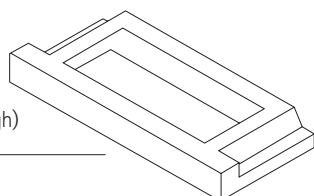
746mm wide Fyrelintel Top Section
746mm(w) x 215mm(h) x 415mm(d)



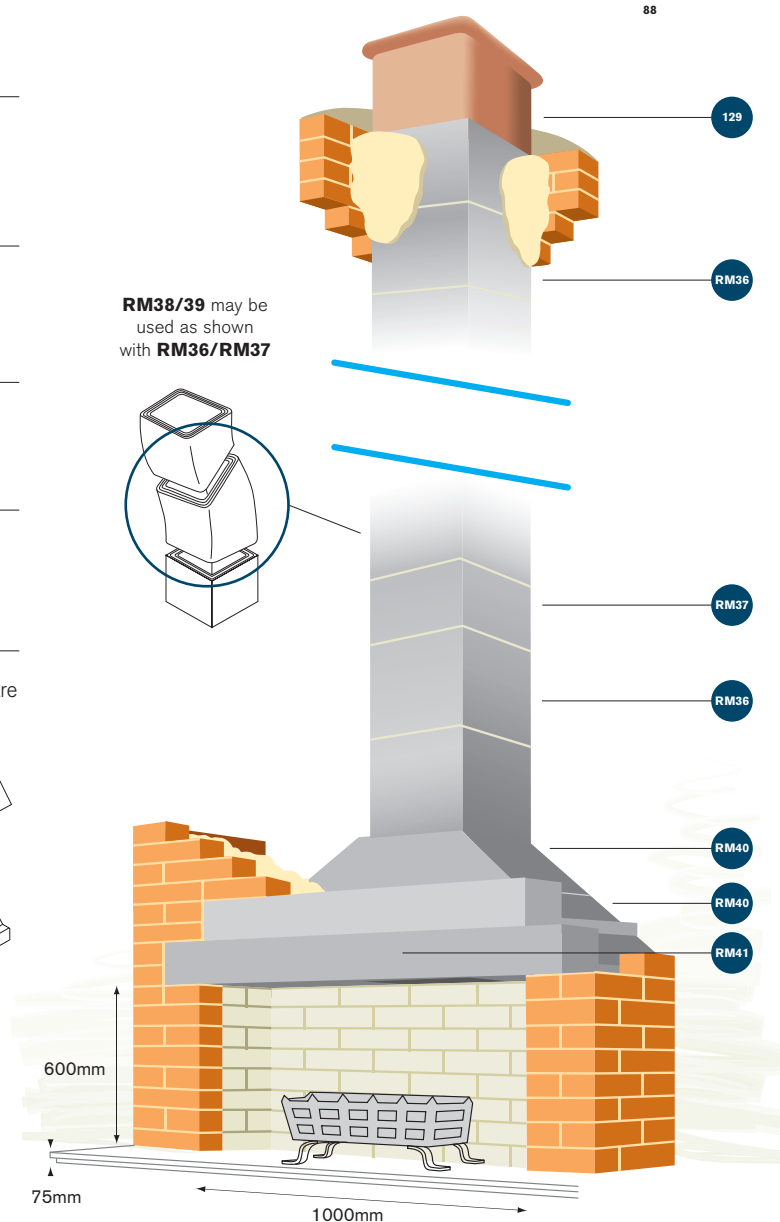
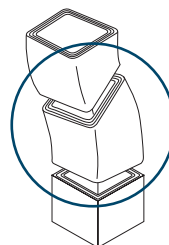
960mm wide Fyrelintel Base Section
960mm(w) x 140mm(h) x 535mm(d)



RM41 1200mm wide Fyrelintel Base Unit (140mm high)



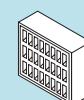
RM38/39 may be used as shown with **RM36/RM37**



Ventilation required for 300 x 300mm int. square flue linings 45,000mm² permanently open free air space provided by 5 no. 215 x 215mm Rectangular Hole Air Bricks list no. 374, each providing 10,250mm² free air space and 5 no. 215 x 215mm Horizontal Cavity Wall Bridging Ducts list no. 402.

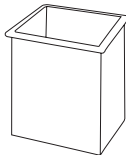
Refer to page 11 for ancillary items, list no. **RF28, 597, 599, 374 and 402**. Refer to page 13 for offset calculation chart.

Note the mandatory requirement to use fireproof mortar (list nos. RF28 and 597) for jointing flue liners, and insulating backfill (list no. 599), or similar, to fill the void between flue lining and supporting masonry.



Typical construction of 435 x 310mm int. Rectangular Flues

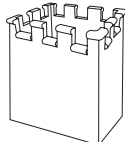
160 435 x 310mm int.
Rectangular Plain
Beaded Flue
Terminal 450mm
and 600mm high



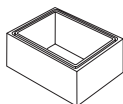
162 435 x 310mm int.
Rectangular
Fleur de Lys Flue
Terminal 450mm
and 600mm high



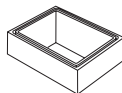
164 435 x 310mm int. Rectangular Castellated Flue Terminal
450mm and 600mm high



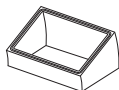
RM43 435 x 310mm int.
Rectangular
Rebated Flue
Linings,
225mm high



RM44 435 x 310mm
int. Rectangular
Rebated Flue
Linings,
150mm high



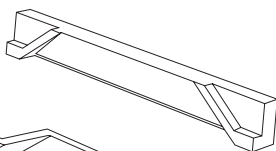
RM45 22½° 435 x 310mm
int. Rectangular
Rebated
Back Bend



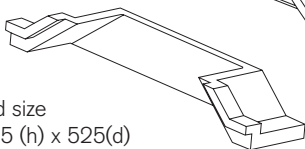
RM46 22½° 435 x 310mm
int. Rectangular
Rebated
Side Bend



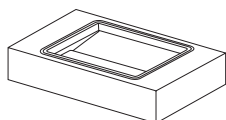
RM47 1400mm wide
Fyrelintel Front Section



RM48 1400mm wide
Fyrelintel Back
Section Combined size
1400mm(w) x 215 (h) x 525(d)

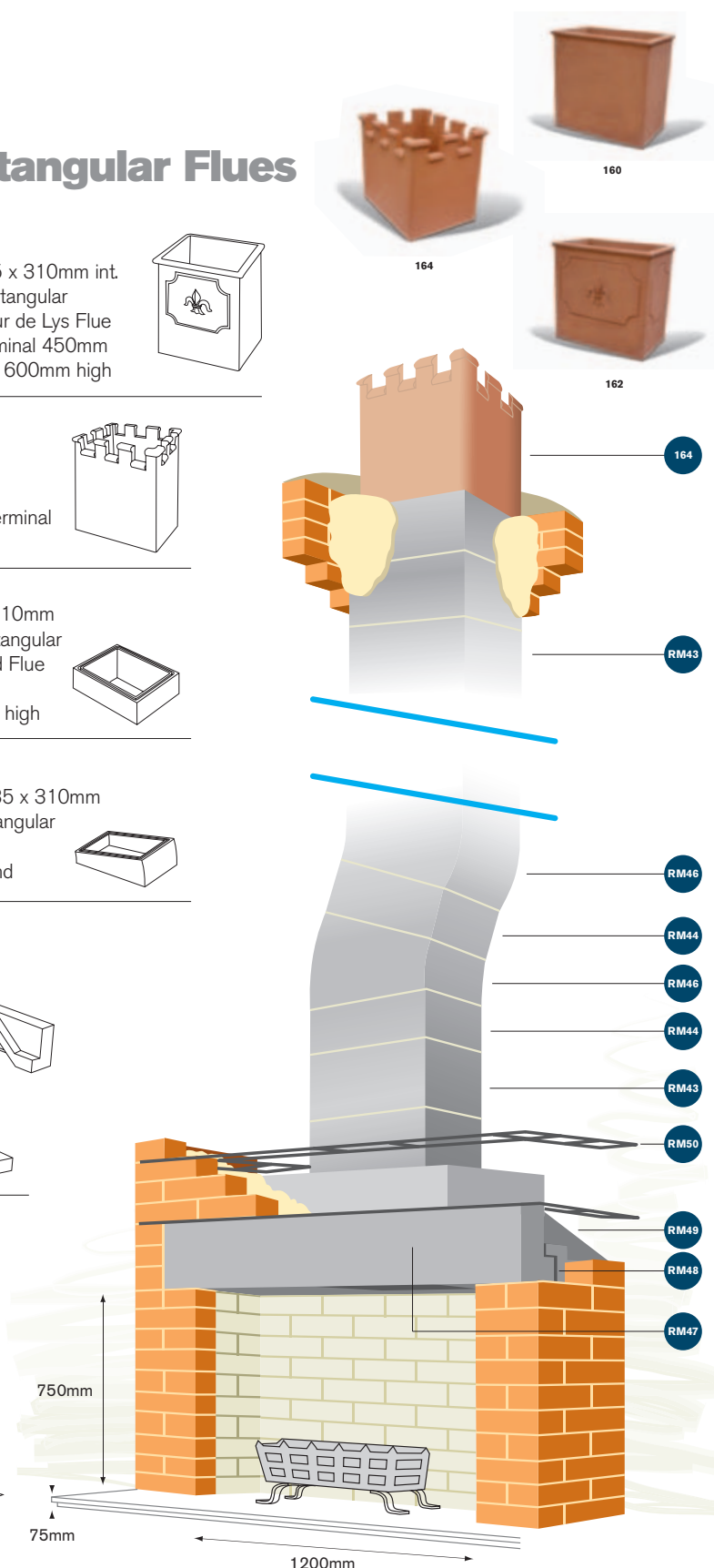
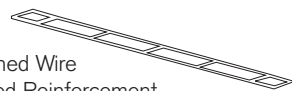


RM49 808mm wide
Fyrelintel
Top Section



808mm(w) x 140mm(h) x 414mm(d)

RM50 2700mm length
3.5mm dia. Flattened Wire
Stainless Steel Bed Reinforcement



Ventilation required for 435 x 310mm rectangular linings 67,425mm² permanently open free air space provided by 7 No. 215 x 215mm Rectangular Hole Air bricks list no. 374, each providing 10,250mm² free air space and 7 no. 215 x 215mm Horizontal Cavity Wall Bridging Ducts list no. 402.

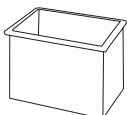
Refer to page 11 for ancillary items, list no. **597, 599, 374, and 402**. Refer to page 13 for offset calculation chart.

Note the mandatory requirement to use fireproof mortar (list no. 597) for jointing flue liners, and insulating backfill (list no. 599) or similar, to fill the void between flue lining and supporting masonry.



Typical construction of 545 x 310mm int. Rectangular Flues

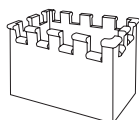
161 545 x 310mm int. Rectangular Plain Beaded Flue Terminal 450mm and 600mm high



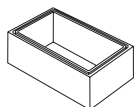
163 545 x 310mm int. Rectangular Fleur de Lys Flue Terminal 450mm and 600mm high



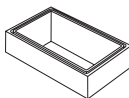
165 545 x 310mm int. Rectangular Castellated Flue Terminal 450mm and 600mm high



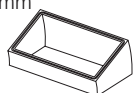
RM54 545 x 310mm int. Rectangular Rebated Flue Linings, 225mm high



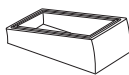
RM55 545 x 310mm int. Rectangular Rebated Flue Linings, 150mm high



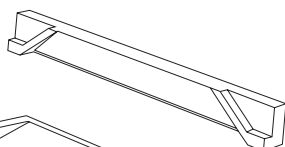
RM56 22½° 545 x 310mm int. Rectangular Rebated Back Bend



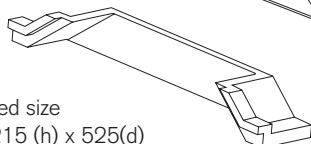
RM57 22½° 545 x 310mm int. Rectangular Rebated Side Bend



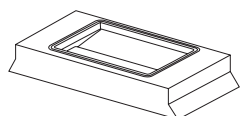
RM58 1600mm wide Fyrelintel Front Section



RM59 1600mm wide Fyrelintel Back Section Combined size 1600mm(w) x 215 (h) x 525(d)



RM60 967mm wide Fyrelintel Top Section



967mm(w) x 140mm(h) x 414mm(d)

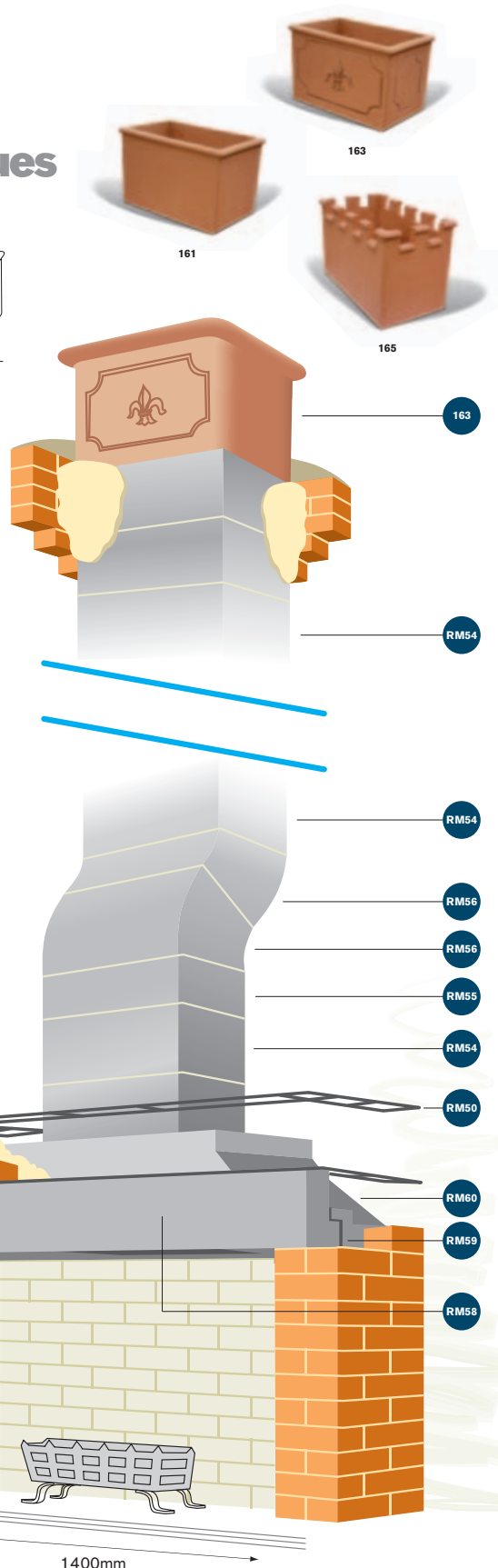
RM50 2700mm length 3.5mm dia. Flattened Wire Stainless Steel Bed Reinforcement



800mm

75mm

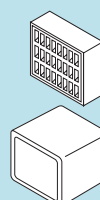
1400mm



Ventilation required for 545 x 310mm rectangular linings 84,475mm² permanently open free air space provided by 9 No. 215 x 215mm Rectangular Hole Air bricks list no. 374, each providing 10,250mm² free air space and 9 no. 215 x 215mm Horizontal Cavity Wall Bridging Ducts list no. 402.

Refer to page 11 for ancillary items, list nos. **597, 599, 374, and 402**. Refer to page 13 for offset calculation chart.

Note the mandatory requirement to use fireproof mortar (list no. 597) for jointing flue liners, and insulating backfill (list no. 599) or similar, to fill the void between flue lining and supporting masonry.



Flue Linings Ancillary Items

RF28 Tube Rediflow Fireproof Mortar



597 6kg Tub Rediflow Fireproof Mortar



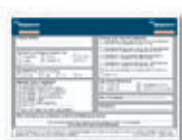
599 Approx 20kg Rediflow Insulating Backfill



RF32 Rediflow Smoke Pellets (6 per tube)

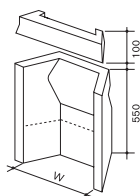


NP1 Notice Plate and Checklist Pack

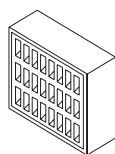


673 400mm & 450mm Throat Restrictor
Height 100mm

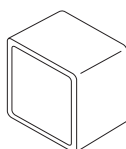
670C 400mm & 450mm Milner Scored Fireback
Height 550mm
Width (W) 375mm (for 400mm)
Width (W) 425mm (for 450mm)



374C Rectangular Hole Slotted Air Brick
Size Free Air Space(mm²)
215(h) x 215(w)mm 10250



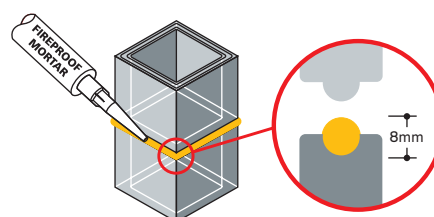
402C Horizontal Cavity Wall Bridging Duct
200mm long
215(h) x 215(w)mm



Simple to specify, Easy to install

Tube Application

Note that flue liners should be jointed using fireproof mortar. This mortar is available in tubes, for gun application and tubs for trowel application. The tongue and groove style of the rebate is particularly suited to gun application. An 8mm bead of mortar is extruded into the groove. When the next flue liner is placed on top this bead is compressed to form a 3mm joint throughout the full wall thickness of the flue lining.

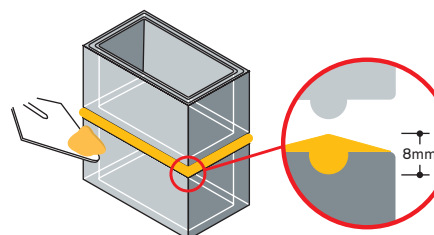


Approximate number of joints per tube of fireproof mortar

Flue size	Approximate no. of joints
225mm int. dia. circular	4
200 x 200mm int. square	3.5
250 x 250mm int. square	3
300mm int. dia. circular	2.5
300 x 300mm int. square	2

Tub Application

It is recommended that the larger rectangular flue liners be jointed by trowel application from a 6kg tub of fireproof mortar. These liners are 40mm thick and additional fireproof mortar is required to form a 3mm joint throughout the full wall thickness of the liner.



Approximate number of joints per 6kg tub of fireproof mortar

Flue size	Approximate no. of joints
435 x 310mm int. rectangular	10.5
545 x 310mm int. rectangular	9

Any surplus fireproof mortar protruding into the flue should be removed during construction.

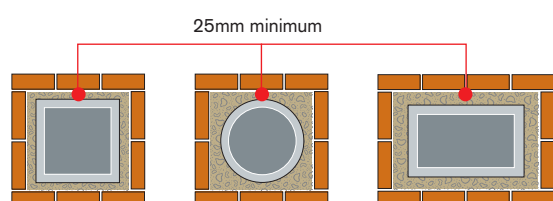
How much ventilation?

Permanent ventilation into the room should be to the level of 50% of the throat opening area. In the absence of a fireback the calculation should be 50% of the cross-sectional area of the flue.

Flue Linings Ancillary Items

A chimney flue constructed from concrete flue liners needs to be supported by surrounding masonry. The void between the outer side of the flue liner and the inner side of the supporting masonry must be filled with a weak, insulating concrete or similar.

Hanson Red Bank recommend and supply an Insulating Backfill which consists of expanded clay granules which should be mixed at 20 parts granules to 1 part ordinary portland cement, lightly wetted, with the cement acting purely as a binding agent. The thickness of the Insulating Backfill should be a minimum of 25mm and preferably 35 to 40mm between the flue liner and surrounding masonry.



The amount of insulating backfill required depends on the distance between the outside of the lining and the surrounding masonry and the total height of the flue.

Approximate number of bags of Hanson Red Bank Insulating Backfill required per metre of lining

Bags per metre high	Distance between flue liner and surrounding masonry				
	25mm	40mm	50mm	75mm	100mm
Flue Size (mm)					
200 x 200 square	0.55	0.93	1.20	1.95	2.80
225 circular	0.92	1.33	1.62	2.42	3.32
250 x 250 square	0.65	1.09	1.40	2.25	3.20
300 circular	1.27	1.77	2.12	3.07	4.12
300 x 300 square	0.75	1.25	1.60	2.55	3.60
435 x 310 rectangular	0.96	1.58	2.01	3.17	4.42
545 x 310 rectangular	1.07	1.76	2.23	3.50	4.86

The distance between the lining and the masonry is rarely consistent throughout the full height of the flue. Often the gap is greater around an offset or immediately above the throat unit and additional insulating backfill may be required. **(Each 20kg bag of insulating backfill contains approximately 50 litres or 0.05 cubic metres).**

Offsets

It is recommended that where possible offsets are not used and flues are kept straight. When offsets are included these may restrict the flow of the flue gases. Offsets should only be used where necessary to circumvent another element of the structure, or to bring the flue in line with the ridge or other point of termination.

If an offset is required it should not make an angle of more than 45° with the vertical. Note shallow offsets less than 45° are recommended for solid fuel applications. Offsets should be limited to a maximum of two (or four bends per flue). If offsets are not shallow such that a sweeps brush cannot travel the full length of the flue and are formed using four 45° bends, then an access point for inspection and cleaning should be made between offsets.

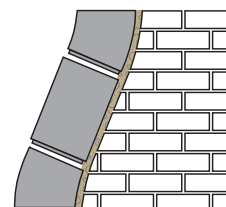
Offsets should only be formed using factory made components.

Offset Components

Flue Size (mm)	Straight 222mm high	Straight 150mm high	Offset units 50/70/90mm	Bends 22.5°	Bends 30°	Bends 45°
200mm int square	✓		✓			✓
225mm dia circular	✓	✓			✓	
250mm int square	✓		✓			✓
300mm dia circular	✓	✓		✓		✓
300mm int square	✓	✓		✓		✓
435 x 310mm rectangular	✓	✓		✓		
545 x 310mm rectangular	✓	✓		✓		

For open fires there should be a minimum vertical section of 600mm, from the underside of the throat unit before any offset.

The flue bends/offset units and straight liners that make up an offset must be supported adequately. Brickwork underneath the structure should be corbelled to within practical limits.



For additional information on flue design and scheduling of components please contact Hanson Red Bank's Technical Services Department.

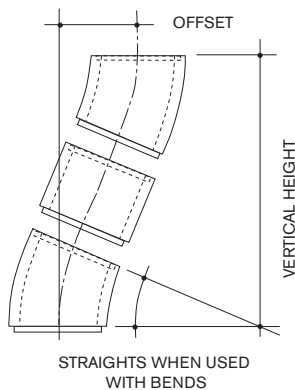
Offsets

Calculations when using flue bends

200 x 200mm & 250 x 250mm

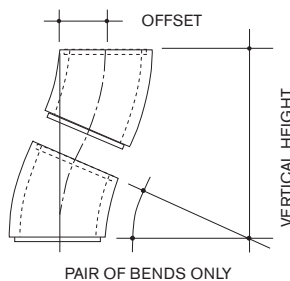
Total Offset (mm)	Bends	Straights	Height (mm)
	45°	225	
179	2		431
338	2	1	590
497	2	2	750
656	2	3	909
815	2	4	1068
974	2	5	1227

Note that the offset and vertical height dimensions given in these offset charts are nominal.



225mm int. dia.

Total Offset (mm)	Bends	Straights		Height (mm)
	30°	150	225	
82	2			305
157	2	1		435
194	2		1	500
232	2	2		565
269	2	1	1	630
307	2		2	695
344	2	2	1	760
382	2	1	2	825
419	2		3	890
457	2	2	2	955
494	2	1	3	1019
532	2		4	1084
569	2	2	3	1149
607	2	1	4	1214
644	2		5	1279



300mm int. dia. & 300 x 300mm

Total Offset (mm)	Bends		Straights		Height (mm)
	22½°	45°	150	225	
57	2				287
114	2		1		426
143	2			1	495
172	2		2		564
201	2		1	1	633
220		2			530
229	2			2	703
258	2		2	1	772
287	2		1	2	841
315	2			3	911
326		2	1		636
344	2		2	2	980
373	2		1	3	1049
379		2		1	689
402	2			4	1119
430	2		2	3	1188
432		2	2		742
459	2		1	4	1257
485		2	1	1	795
488	2			5	1326
516	2		2	4	1396
538		2		2	849
545	2		1	5	1465
574	2			6	1534
591		2	2	1	902
602	2		2	5	1604

435 x 310 & 545 x 310mm Rear Offset

Total Offset (mm)	Bends	Straights		Height (mm)
	22½°	150	225	
71	2			356
128	2	1		494
157	2		1	564
186	2	2		633
214	2	1	1	702
243	2		2	772
272	2	2	1	841
300	2	1	2	910
329	2		3	980
358	2	2	2	1049
387	2	1	3	1118
415	2		4	1187
444	2	2	3	1257
473	2	1	4	1326
501	2		5	1395
530	2	2	4	1465
559	2	1	5	1534
587	2		6	1603
616	2	2	5	1672

435 x 310mm Side Offset

Total Offset (mm)	Bends	Straights		Height (mm)
	22½°	150	225	
99	2			499
157	2	1		638
185	2		1	707
214	2	2		777
243	2	1	1	846
272	2		2	915
300	2	2	1	984
329	2	1	2	1054
358	2		3	1123
386	2	2	2	1192
415	2	1	3	1262
444	2		4	1331
472	2	2	3	1400
501	2	1	4	1469
530	2		5	1539
559	2	2	4	1608
587	2	1	5	1677
616	2		6	1747
645	2	2	5	1816

545 x 310mm Side Offset

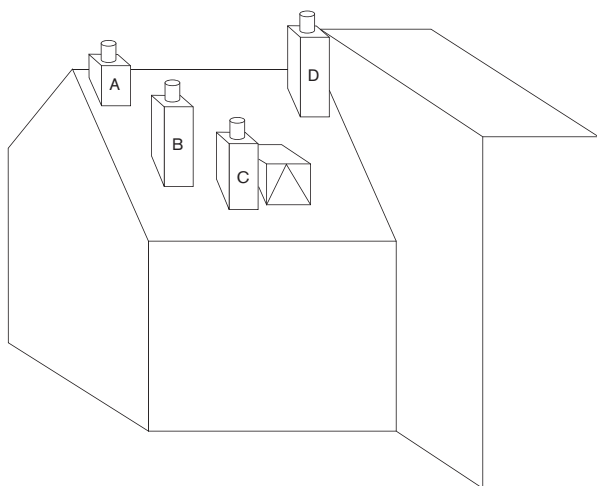
Total Offset (mm)	Bends	Straights		Height (mm)
	22½°	150	225	
91	2			457
148	2	1		596
177	2		1	665
206	2	2		734
234	2	1	1	804
263	2		2	873
292	2	2	1	942
321	2	1	2	1012
349	2		3	1081
378	2	2	2	1150
407	2	1	3	1220
435	2		4	1289
464	2	2	3	1358
493	2	1	4	1427
521	2		5	1497
550	2	2	4	1566
579	2	1	5	1635
608	2		6	1705
636	2	2	5	1774

Offsets should only be formed using factory made components.

Flue Linings

Technical Application Notes

Flue outlet positions for solid fuel appliances

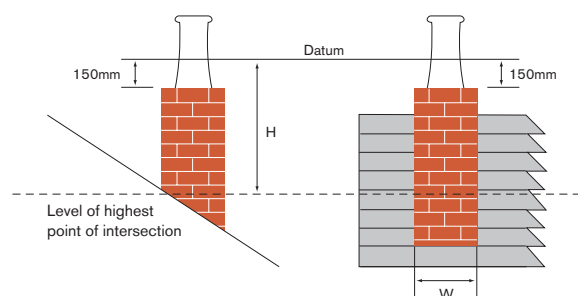


For clearances to easily ignitable roof coverings such as thatch refer to diagram 2.2 of Approved Document 'J' 2002 Edn.

Point where flue passes through weather surface (Notes 1,2)		Clearances to flue outlets
A	at or within 600mm of the ridge	at least 600mm above the ridge.
B	elsewhere on a roof (whether pitched or flat)	at least 2300mm horizontally from the nearest point on the weather surface and: a - at least 1000mm above the highest point of intersection of the chimney and the weather surface; or b - at least as high the ridge.
C	below (on a pitched roof) or within 2300mm horizontally to an openable rooflight, dormer window or other opening. (Note 3)	at least 1000mm above the top of the opening.
D	within 2300mm of an adjoining or adjacent building, whether or not beyond the boundary. (Note 3)	at least 600mm above the adjacent building.
Notes: 1 The weather surface is the building external surface, such as its roof, tiles or external walls 2 A flat roof has a pitch less than 10° 3 The clearances given for A or B, as appropriate, will also apply.		

Maximum chimney height

Height (H) to datum not to exceed $4.5 \times \text{width (W)}$



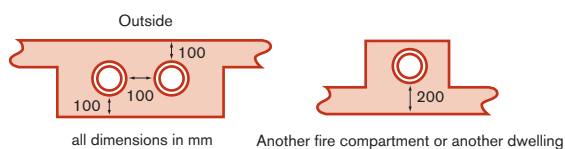
Minimum flue height

Flues should be high enough to ensure sufficient draught to clear the products of combustion. It is likely that a flue height of less than 4.5 metres would not be sufficient.

The height of a flue serving an open fire is measured vertically from the highest point at which air can enter the fireplace to the exit point at the terminal. If the fire is under a canopy then the lower point is taken from the bottom of the canopy.

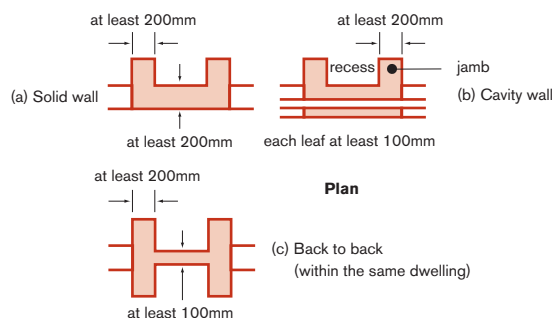
Chimney maintenance

Regular maintenance of chimney flues is essential. If burning solid fuel flues should be swept at least annually and, depending on fuel type repeatedly during prolonged use. Failure to carry out maintenance could lead to a chimney fire. If a chimney is suspected of suffering a fire it should be swept and inspected by a competent person before re-use.



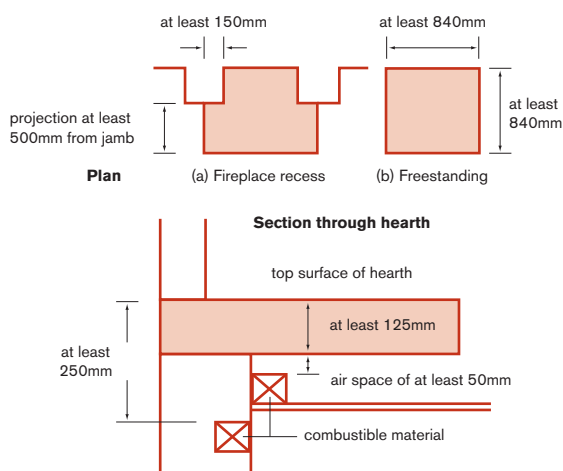
Wall thicknesses for masonry and flueblock chimneys

Any flue in a chimney should be surrounded by, or separated from any other flue in the chimney by, bricks or other solid non-combustible material not less than 100mm thick.



Fireplace recesses

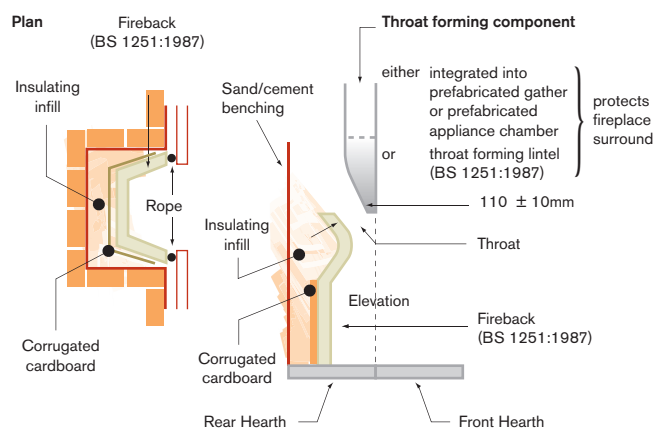
Fireplaces need to be constructed such that they adequately protect the building fabric from catching fire. Fireplace recesses should be constructed of masonry or concrete to the dimensions shown.



Hearths

Hearths should be constructed of suitably robust materials and to appropriate dimensions such that, in normal use, they prevent combustion appliances setting fire to the building fabric. The hearth should be able to accommodate the weight of the appliance and its chimney if the chimney is not independently supported.

Constructional hearths should have the plan dimensions shown, and be made of solid, non-combustible material such as concrete or masonry, at least 125mm thick, including the thickness of any non-combustible floor and/or decorative surface. Combustible material should not be placed beneath constructional hearths unless there is an air space of at least 50mm between the underside of the hearth and the combustible material, or the combustible material is at least 250mm below the top of the hearth.



Open fireplaces: throat, fireplace component and construction

The use of a fireback (list no. 670C) is recommended where a solid fuel open fire is to be used in a smaller fireplace opening. The fireback is shaped to guide the flue gases into the throat opening and the heat from the fire into the room.

When fitting a fireback corrugated cardboard should be positioned immediately behind the lower back section of the fireback to serve as an expansion joint. The void behind this should be filled with a suitable insulating/weak mortar support infill. Some form of fire resistant (ceramic) rope which will allow for forward expansion should be used to seal the fireback with the front fireplace surround.

It is essential that the base of the fireback is fitted to be level with the top of the front hearth as illustrated.

How much ventilation?

When a fireback is fitted and a throat opening formed as above the total free area of permanently open air vents required is as follows:

Nominal Fireplace width (mm)	500	450	400
Free Air Space (mm ²)	20,500	18,500	16,500

Hanson Building Products – A sustainable business

Hanson Building Products is committed to being a sustainable business and contributing to sustainable development. We achieve this by continuous improvement of our manufacturing and extraction processes and by providing products which contribute to sustainable construction.

Made at factories certified to ISO 14001, our clay and concrete products have many features which assist our customers in constructing attractive, sustainable buildings which enrich the built environment. These include: durability, low maintenance, flexibility, flood resistance and ability to be recycled. Providing insulation and thermal mass, our products are ideal for zero carbon developments. We advise on how best to use our products in sustainable buildings and how they contribute to high ratings under the Code for Sustainable Homes and BREEAM.

This brochure is printed on Satimat Silk, an FSC certified product. Contains ECF pulp sourced from well managed and sustainable forests.

Hanson a global business

Hanson is one of the world's largest suppliers of heavy building materials to the construction industry. We produce aggregates (crushed rock, sand and gravel), ready-mixed and precast concrete, asphalt and cement-related materials and a range of building products including concrete pipes, concrete pavers, tiles and clay bricks.

We are part of the HeidelbergCement Group, which employs 70,000 people across five continents and has leading positions in concrete and heavy building products and is the global leader in aggregates.

Hanson Building Products is the UK's largest brick and aircrete block producer. We also produce aggregate blocks, bagged aggregate and cement products, renders, pavers, pre cast floors and stairs, SUD systems and prefabricated building systems. The division incorporates London Brick, Thermalite, Red Bank, Cradley, Formpave and Struchtherm.

All dimensions are in mm, drawings not to scale and all sizes nominal.
The colours in this brochure are as true as can be obtained by the normal printing process. Hanson Red Bank is committed to a program of continuous product development and reserve the right to alter specifications without prior notification. For further product information or assistance please telephone our freephone sales line: (0800) 3285243.

Quality Assured



Hanson Red Bank

Atherstone Road, Measham
Swadlincote, Derbyshire DE12 7EL
Tel: 01530 270333
Fax: 01530 270542

Email: admin@redbankmfg.co.uk
www.hanson.com/uk