

PART 3

FACTORY MADE CHIMNEYS AND CHIMNEY LINING SYSTEMS

A. INTRODUCTION

1. CHIMNEYS AND FLUES

The details on the factory made chimney and flue products listed in this section have been provided with the help of the British Flue and Chimney Manufacturers Association. The current status of each product has been declared to HETAS by the manufacturer.

Many of the products listed are covered by recognised independent test certification. Where a claim is made that the product is manufactured to a British Standard or meets Building Regulations 2000 for England and Wales by satisfying the recommendations of the current (1st April 2002) edition of Approved Document J or otherwise by demonstration of compliance, this claim is the responsibility of, and should be confirmed with, the manufacturer prior to purchase. It should be understood by purchasers and specifiers that a claim recorded in the Approval Status column as "Manufacturer claims to BS xxxx", although coming within the Trade Descriptions Act, is a claim of the manufacturer alone and not endorsed by HETAS.

Where the claim in the Approval Status column quotes a BSI Kitemark, BBA, BSRIA, Wimlas, CSTB, HETAS or TÜV certificate number this is an indication that the product has been independently type tested and approved by a body entitled to engage in third party certification and product monitoring. **Publication in this Guide does not endorse such manufacturers' claims.**

2. SELECTION OF A CHIMNEY OR FLUE SYSTEM

1. The flue size of the system and arrangement are determined by the type of appliance to be used and its location. The siting of a chimney outlet should minimise the effect of emissions on the dwelling itself and on neighbouring buildings. Whatever chimney arrangement or products used must satisfy Building Regulations and the recommendations of British Standard BS 6461: Part1:1984 (1998) for masonry chimneys and flue pipes, or BS EN 12391-1:2003 Chimneys-Execution standard for metal chimneys – Part 1: Chimneys for non-roomsealed heating appliances (superceded BS 7566:1992 (1998) for factory-made metal chimneys to BS 4543 Part 2 for domestic appliances).

2(i). The UK Building Regulations Approved Document J specifies that chimneys built using products meeting the requirements of European product standards should result in a chimney whose performance is at least equal to that corresponding to the designation T450 N2 S D3, as described in BS EN 1443:1999 (now 2003 with the changed designation T450 N2 D 3 Gxx where xx is the necessary separation from combustible materials). In order to align with European practice it is now recommended that T400 is used as the temperature designation as given in Approved Document J, 2002 Edition: Guidance and Supplementary Information on the UK Implementation of European Standards for Chimneys and Flues. Although BS EN 1443:2003 also allows chimneys serving an open fire burning only wood to have a corrosion resistance class 2 HETAS Ltd considers that all chimneys serving appliances burning solid fuel should have the designation class 3. Products having the designation W for condensate resistance class meet the requirement. A product with an Oxx designation, not having been subjected to a soot fire test, is not accepted for use in the UK.

2(ii). The temperature designation T400 implies a mean flue gas temperature of no more than 400°C during the nominal output (normal running) of the appliance. If it is demonstrated that the appliance operates with a lower flue gas temperature during its normal operation, e.g. new high efficiency appliances including those which may be condensing, and those burning biomass, then the temperature designation may be reduced to that specified by the appliance manufacturer. However, the chimney shall still have a resistance to soot fire designation 'G'.

Chimneys serving condensing appliances specifically designed to operate with flue gas temperatures below the flue gas dew point shall have the designation 'W' instead of 'D', and provision made for the disposal of any condensate generated in the chimney.

The size of the chimney (height and flue diameter) shall be according to BS EN 15287-1 clause NA.4.2.3. This specifies minimum dimensions to be used where the flue gas characteristics of the appliance serving the chimney are not available. Where sufficient information is available from the appliance manufacturer the flue size for a specified chimney construction may be calculated using the calculation methods given in BS EN 13384-1. BS EN 13384-3 may be used to provide tables or graphs of chimney dimensions for a variety of appliances and chimney constructions.

NOTE: Attention is drawn to the UK National Annex to BS EN 15287-1 that gives recommendations for the construction of chimneys based on UK practice previously identified in BS 6461-1 and BS EN 12391-1 (which replaced BS 7566). These standards are now withdrawn.

3. Flue sizing should be according to sections 2.4 to 2.6 of Approved Document J. An internal flue size of 200mm square or round is commonly specified as this size will allow most types of stove or standard open fire to be fitted. If an inglenook or large open fire is proposed it is necessary to have a larger flue size, which can be calculated according to Approved Document J, section 2.7.

4. During construction of a new house the chimney is usually built "traditionally" in brick or blockwork surrounding clay, refractory concrete, pumice, or ceramic flue liners. It is also possible to use a chimney block or factory made metal chimney system.

5. A new chimney can be added to an existing house quickly and economically using a factory made metal or chimney block system.

6. Rebuilding or relining an existing chimney requires specialist advice. Providing the existing chimney structure is sound, there is a wide choice of factory made chimney relining systems that can be used. Fire-resistant precast concrete, terracotta and pumice flue liners or ceramic liners offer the most permanent solution, providing the existing chimney openings are big enough to take the correct flue size to suit the proposed appliance.

Cast In-Situ lining systems are also available (see Part 3 Section J) which have been tested by an independent body, such as HETAS or BBA, to meet the appropriate requirements of BS EN 1857:2003 at the T400 N2 D 3 G level using tested materials which are installed under an accepted Code of Practice. It is desirable for such installations to be independently monitored under a QA inspection system.

Double skin flexible stainless steel flue liners offer an alternative answer if access is difficult or the existing chimney is unable to accept other types of liners. However, these flexible liners, whilst being easier to install and replace, are not permanent and significant periods of slow burning with solid fuels or infrequent chimney sweeping can cause corrosion damage which reduces the expected life to less than 5 years. **Under no circumstances should a single skin flexible liner designed solely for use with gas fires be used with a solid fuel burning appliance.**

7. The efficiency and life expectancy of any chimney is dependent on correct use and maintenance. Masonry and precast chimney products whilst usually offering long life and high resistance to risk of corrosion, tend to involve more installation work, when compared with metallic chimney systems.

Metal liners and insulated metal chimneys offer fast and convenient installation. However, they are less resistant to damage by corrosion particularly if subjected to abuse or inadequate cleaning.

Allowing soot or condensate deposits to accumulate in metal lined chimneys and also prolonged periods of burning solid fuel slowly in slumbering conditions, particularly on closed appliances, can cause high concentrations of corrosive condensates to build up and attack the metal liner. This situation can considerably reduce the life of the flue lining.

8. Prefabricated factory made fireplace recess components such as throat forming lintels, gather units or appliance chambers are available with most systems.

9. The manufacturer's installation and user instructions must be followed. Members of the BFCMA are able to provide full details and free advice on their products, including layout design and estimating services. The British Standard BS 6461 : Part 1 : 1984 (1998) is the 'Code of Practice for masonry chimneys and flue pipes', and BS EN 12391-1:2003 specifies the method of specifying the design and installation of metal chimneys which replaced BS 7566 : 1992 (1998) for 'installation of factory made chimneys to BS 4543 for domestic appliances'. NOTE: BS 7566 was withdrawn in December 2005 and replaced with BS EN 12391-1:2003.

3. CHIMNEY MAINTENANCE AND SWEEPING

1. The flueways in the chimney and flue pipe must be cleaned regularly to remove all soot deposits and prevent blockage of the flue. This should be done at least twice a year, preferably before the heating season to check that the flue has not been blocked by bird's nests for example and also at the end of the heating season to prevent soot deposits from resting in the chimney during the dormant period.

2. When using a new installation the flueways should be checked at least monthly, so that an adequate cleaning cycle can be determined in relation to the use of the appliance. The risk of heavy tar and soot deposits is greatly increased if unsuitable fuel is burnt, which can result in a chimney fire or corrosion damage.

3. Sweeping with a brush and rods is the only recommended method of cleaning, because other materials such as mortar in old flues, loose bricks or bird's nests etc. can block a flue. For this reason vacuum or chemical chimney cleaners cannot be recommended as an alternative to sweeping. Some chemical cleaners can corrode metal in the chimney and appliance.

Sweeping brushes must be made from suitable bristle and be of the appropriate diameter for the area of the flue being swept. They must also be fitted with a ball end or free running wheelboss to prevent scraping or damaging the flue lining particularly at bends.

4. HETAS recommends the use of a qualified chimney sweep who will usually be a member of the National Association of Chimney Sweeps, or Guild of Master Sweeps who can give an inspection and sweeping certificate. HETAS Approved Sweeps are listed in Section E. Many chimney manufacturers give specific advice on what sweeping brushes to use with their products. This advice should be followed.

5. As recommended by British Standards all chimneys should be checked annually for signs of wear and tear such as flashings, supports, terminals and any other exposed areas of the chimney, so that repairs can be carried out as necessary.

6. If at any time smoke or fumes are apparent or suspected to be escaping from the appliance or chimney, stop using the appliance at once and get advice immediately from the installer and or fuel supplier. Do not use the appliance or burn any fuel until the installation has been checked and passed as being safe.

B. CHIMNEY BLOCK SYSTEMS

TYPES

Usually made from lightweight insulating concrete or pumice or clay usually in block form but can also be in prefabricated sections and are designed for quick installation and incorporate a built in or separate flue liner.

APPROVALS

The chimney block system must satisfy Building Regulations. This can be achieved by meeting the requirements of the 2002 Edition of Approved Document J that specifies "flueblocks whose performance is at least equal to that corresponding to the designation T450 N2 S D3, as described in BS EN 1443:1999 (now 2003 with the changed designation T450 N2 D 3 Gxx where xx is the necessary separation from combustible materials). Note: for change to T400 see Introductory Note A2.

Reference is made to the example of clay/ceramic system chimneys to BS EN 13063-1:2005 incorporating amendment No.1 having the designation T400 N2 D 3 Gxx, clay flue blocks at least meeting the requirements for Class FB1 N2 as described in BS EN 1806:2000, or concrete flue blocks at least meeting the requirements for Class C2 as described in BS EN 1858:2003 (equating to T400 N2 D3 Gxx) are also considered suitable by reference to the 'Approved Document J: 2002 Edition: Guidance and Supplementary Information on the UK Implementation of European Standards for Chimneys and Flues'.

In the absence of there being a UK Notified Body covering testing to these standards, manufacturers may seek to have their chimney block systems tested by a recognized independent body that provides a certificate confirming the performance levels on the basis of testing to the relevant procedures specified in the appropriate standard. Recognised testing bodies might include the BBA, BRE Certification, BSRIA and CERAM. Other solutions for demonstrating compliance with the Building Regulations may be acceptable as defined in the Approved Document J.

It is recommended that the validity of certification for the liners or evidence of compliance with Building Regulations be checked prior to purchase.

SPECIAL NOTES

When correctly installed, operated and maintained these systems should last the life of the dwelling.

Manufacturer	Product Name	Flue sizes	Approval Status
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*Chimney Block Systems flue sizes marked with an asterisk are those covered by a TÜV Certificate. Other sizes, not asterisked, have been declared by the manufacturer to be produced to the same specification.

Anki Chimney Systems	Anki Single Module	160, 200 mm round	CE Mark: TÜV Cert. no. 0036 CPD 90219 001
Schiedel Chimney Systems	Swift	200 mm	BBA Cert, no. 03-4019
Schiedel Chimney Systems	Isokern DM	150*, 180*, 200*, 225*, 250, 300, 350mm round	CE Mark: TÜV Cert. no. 0036 CPD 9021 9001
TONA Tonwerke Schmitz GmbH	TONAdinXX	120*, 140*, 160*, 180*, 200*, 230*, 250*, 300* mm round	CE Mark: Universität Karlsruhe (TH) Cert. no. 0769 CPD 7037
TONA Tonwerke Schmitz GmbH	TONAthermXXX	12/12*, 14/14*, 16/16*, 18/18*, 20/20*, 23/23*, 25/25*, 30/30* cm square	CE Mark: Universität Karlsruhe (TH) Cert. no. 0769 CPD 7037
TONA Tonwerke Schmitz GmbH	TONAstarXXX Note: The TONAstar product is supplied in 1m long lightweight modular elements comprising ceramic inner liner, insulation and stainless steel outer casing.	130*, 150*, 180*, 200* mm round	CE Mark: Universität Karlsruhe (TH) Cert. no. 0769 CPD 7039

C. FACTORY - MADE METAL CHIMNEYS

TYPES Made in interlocking sections with a stainless steel outer casing surrounding high performance insulation and a flue liner made of stainless steel. Some systems have a ceramic or refractory concrete flue liner which offers better resistance to corrosion.

APPROVALS These systems must have a British Standard Kitemark to BS 4543: 1990 (1996) Part 2 (Note: Part 3 deals only with suitability for oil firing systems) or to BS EN 1856-1: 2003. Alternatively a BSRIA certificate or similar test reporting e.g. by TÜV that indicates the product can satisfy Building Regulation requirements with respect to the burning of solid fuel. The Approval Status listed for the products was correct at the time of printing but it is recommended that the manufacturer be consulted on the current approval status prior to specification or purchase of the product.

NOTE: BS 4543 was withdrawn in March 2005. It was replaced by BS EN 1856-1:2003. Products meeting the requirement of the 2002 Edition of Approved Document J and the 'Approved Document J: 2002 Edition: Guidance and Supplementary Information on the UK Implementation of European Standards for Chimneys and Flues' should have an equivalent designation according to BS EN 1856-1 of T400 N1 D Vm L40040 Gxx where L40040 is the minimum material specification in the National Annex to BS EN 1856-1 and **xx is the necessary separation from combustible materials, when the product is tested in the fully enclosed arrangement specified in BS EN 1859:2000 including firestops.** Such products will carry a CE mark. Alternatively products may have the designation T400 N1 D V3 L40040 Gxx having been independently tested for their corrosion resistance according to Annex A3 of BS EN 1856-1:2003. A product designation of T400 N1 W V2 L40040 Gxx is accepted as being equivalent to a chimney designation of T400 N1 D3 Gxx. **The firestops must meet the default requirements of the UK Annex to BS EN 1856-1 or be tested to BS 476-20 for fire retarding properties, meeting a minimum delay time of 30 minutes.**

SPECIAL NOTES The metal lined systems should give a normal life of 10 to 15 years or more when correctly installed, operated and maintained. However, prolonged periods of slow burning particularly using solid fuels, combined with inadequate cleaning of the flueways can cause corrosion damage which may reduce the expected life of the liner. If there is a risk that these conditions can occur the non-metallic lined systems are a better choice and under normal use should give a life in excess of 20 years.

Manufacturer	Product Name	Flue sizes	Approval Status
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***Flue liners manufactured from Stainless Steel. Flue sizes marked with an asterisk are those tested for Kitemarking or by BSRIA, TÜV or LNE. Other sizes, not asterisked, have been declared by the manufacturer to be produced to the same specification.**

Colt Cows (Chimney Cows Ltd.)	Holetherm Twin Wall Flue System With a Ventilated Fire-Stop Arrangement	125, 150, 175, 200*, 250, 300, 350, and 400 mm round	CE Mark: Kiwa Cert. no. 0063 CPD-6883; Tested to EN 1856-1:2009, BSRIA test report No. 53550/1. Designated EN 1856-1 T450 N1 D Vm L50040 G75 N.B. Ventilated firestops for use with this system have been verified fire resistant in accordance with BS 476: Part 20: 1987; Ref. Warringtonfire Report No. 194465 Dated 29 July 2010.
Deks Distribution Ltd	Selkirk STC	127*, 152*, 178*, 203* mm round	Tested to EN 1856-1:2003 Certificate No. 0086-CPD-503081. Designated T450 N1 D Vm L50045 G50: GaC Report 8744. Firestop BS476-20 test report 188669; Exova Warringtonfire.
Dinak UK	DINAK DW DINAK DP	100, 130, 150, 180, 200*, 250, 300, 350, 400 mm	Tested to BS EN 1856-1:2003 by BSRIA, report no. 51915-1. Designated BS EN 1856-1-T450-N1-W-VmL50040-G60. Firestop BS 476-20 test ref. 181225-NH by Warringtonfire
Docherty Chimney Group	DS	130*, 150*, 180*, 200*, 230, 250, 300 mm round	Tested to BS EN 1856-1:2003 and BS EN 1443:2003 BSRIA Report No 52249/1 November 2009. Designated T450 N1 D Vm L50050 G50. Firestop test to BS476-20 report no. 185828; Exova Warringtonfire.

C. FACTORY - MADE METAL CHIMNEYS (continued)

Manufacturer	Product Name	Flue sizes	Approval Status
<p>*Flue liners manufactured from Stainless Steel. Flue sizes marked with an asterisk are those tested for Kitemarking or by BSRIA, TÜV or LNE. Other sizes, not asterisked, have been declared by the manufacturer to be produced to the same specification.</p>			
Flue Stox	CF	125*, 150*, 175*, 200* mm round	<p>Tested to BS EN 1856-1:2003 and BS EN 1443:2003 BSRIA Report No 50348/2 Edition 2 November 2007. Designated T450 N1 D Vm L50050 G50. Firestop tested to BS476-20 Ref. test report 189464 from Exova Warringtonfire.</p>
Independent Components Ltd.	Gemini Twin Wall	100 to 200 mm round	<p>CE Mark: LNE Cert. no. 0071 CPD-0038 Rev 7; Tested to EN 1856-1:2003. Designated EN 1856-1 T450 N1 D Vm L50050 G75¹. or EN 1856-1 T450 N1 D Vm L50050 G100² 1 = designation when using ventilated firestops only. 2 = designation when using a solid plate firestop but only as described in the product installation instructions. N.B. Ventilating firestops for use with this system have been verified fire resistant in accordance with BS 476: Part 20: 1987; Ref. BRE Report No. 252123 Dated March 2009.</p>
Jeremias	System dw eco 316	100*, 130*, 150*, 180*, 200*, 250, 300, 350, 400 mm round	<p>CE Mark: TÜV Cert. no. 0036 CPD-9174 030; Tested to BS EN 1856-1:2003. Designated EN 1856-1 T450 N1 D V3 L50040 G60. N.B. Ventilating firestops for use with this system have been verified fire resistant in accordance with BS 476: Part 20: 1987; Ref. BSRIA Report No. 53272/1 Edition 2 Dated October 2009.</p>
Midtherm Flue Systems Ltd	HT Plus	130*, 150*, 180*, 200*, 250, 300 mm round	<p>CE Mark LNE Cert. No. 0071-CPD - 10959. Tested to EN 1856-1:2003 Firestop test report to BS476-20 No. 128942 + Supplement from Warrington Fire Research.</p>

C. FACTORY - MADE METAL CHIMNEYS (continued)

Manufacturer	Product Name	Flue sizes	Approval Status
*Flue liners manufactured from Stainless Steel . Flue sizes marked with an asterisk are those tested for Kitemarking or by BSRIA, TÜV or LNE . Other sizes, not asterisked, have been declared by the manufacturer to be produced to the same specification.			
Negarra S. A.	MD Plus (AISI 316/AISI 304) MD Cupra (AISI 316/COPPER) MD ALU PLUS (AISI 316/ALUZINC)	100, 125, 150, 175, 200*, 250, 300, 350, 400 mm	Tested to EN 1856-1:2003 CE Mark CSTB Certificate No.. 0679-CPD-0102 Designated EN 1856-1 T450 N1 D Vm L50040 G65. Firestops have been tested to BS 476-20 ref. Exova Test Report No. 187024, 15 th Dec 2009.
Negarra S. A.	GC 25 Plus	100, 125, 150, 175, 200*, 250, 300, 350, 400 mm	Tested to BS EN 1856-1:2003 ref. BSRIA test report 53298/1 Edition 3, Feb 2010. Designated EN 1856-1 T450 N1 D VmL50040 G65. Firestops have been tested to BS 476-20 ref. Exova Test Report No. 187024, 15 th Dec 2009.
Negarra S. A.	GC 50 Plus	100, 125, 150, 200, 250, 300, 350, 400 mm	Tested to BS EN 1856-1:2003 ref. LNE test report F110475, 14/11/2005. Designated EN 1856-1 T600 N1 W VmL50040 G65. Firestops have been tested to BS 476-20 ref. Exova Test Report No. 187024, 15 th Dec 2009.
Poujoulat (UK) Ltd	Dualis PGI	100, 130, 150 mm Liner dia.	CE Mark: LNE Cert No. 0071 – CPD – 0051 / 0052. Tested to EN 1856-1: 2003. Designated EN 1856-1 T450 N1 W Vm L50040 G100. The annulus of air, between the inner and outer steel skins, being static and sealed at each end of the system. Firestops have been tested to BS 476: Part 20: 1987; Ref. BRE Report No. 252123 Dated March 2009.
Poujoulat (UK) Ltd	Therminox TI and ZI	100*, 130*, 150*, 180*, 200*, 250, 300, 350, 400 mm round	CE Mark: LNE Cert. no. 0071 CPD-0011 Rev 7; Tested to EN 1856-1:2003. Designated EN 1856-1 T450 N1 W V2 L50040 G50 (100 – 350 mm dia.) & EN 1856-1 T450 N1 W V2 L50050 G50 (400 mm dia.). Firestops have been tested to BS 476: Part 20: 1987; Ref. BRE Report No. 252123 Dated March 2009.

C. FACTORY - MADE METAL CHIMNEYS (continued)

Manufacturer	Product Name	Flue sizes	Approval Status
<p>*Flue liners manufactured from Stainless Steel. Flue sizes marked with an asterisk are those tested for Kitemarking or by BSRIA, TÜV or LNE. Other sizes, not asterisked, have been declared by the manufacturer to be produced to the same specification.</p>			
Schiedel Chimney Systems	ICS 25	100*, 130*, 150*, 180*, 200*, 230, 250, 300, 355 mm round	CE Mark: TÜV Cert. no. 0036-CPD-9195 001; Model 1, Model 2, Model 3, Model 4. Tested to BS EN 1856-1 and BS EN 1859. Firestop test to BS 476-20 Ref.cert from Darchem Flare No. ASR/FTCR/98/0028
Schiedel Chimney Systems	ICID	125*, 150*, 180*, 200*, 230*, 250*, 300* mm	CE Mark: TÜV Cert. no. 0036-CPD-9195 010; Model 1, Model 2, Model 3, Model 4, Model 6, Model 7. Tested to BS EN 1856-1 and BS EN 1859. Firestop test to BS476-20 ref. cert from Darchem Flare No. ASR/FTCR/98/0028
S.F.L Flues and Chimneys	SM250/SMW	127*, 152*, 178*, 203*, 254, 304, 355, 400 mm round	CE Mark: 0086-CPD-496040 Tested to BS EN 1856-1, BS EN 1859. Firestop test to BS476-20 Ref. report from Warringtonfire No. 175995.
S.F.L Flues and Chimneys	Nova SM	100*, 130*, 150*, 180*, 200*, 250, 300, 350 mm	CE Mark: 0086-CPD-496040 Tested to BS EN 1856-1, BS EN 1859, BSRIA test report No. 18565C/1 Edition 3. Firestop test to BS476-20 Ref. report from Warringtonfire No. 175995.
Specflue Ltd.	iFlue	100, 130, 150, 180, 200*, 250, 300, 350 mm	CE Mark: 0086-CPD-496040 Tested to BS EN 1856-1, BS EN 1859, by manufacturer report No. TR061-B. Firestop test to BS476-20 Ref. report from Warringtonfire No. 175995.

Note: Although some of the above manufacturers supply flue sizes above 400 mm diameter they are not listed here as they are not considered appropriate for domestic solid fuel heating systems up to 50kW output.

D. FLUE LINERS – FOR BUILDING NEW CHIMNEYS OR FOR RELINING

TYPES Made from fire clay, ceramic, pumice or refractory concrete, these liners usually have spigot and socket joints for ease of installation and efficient performance.

APPROVALS All liners must satisfy Building Regulations. This can be achieved by meeting the requirements of the 2002 Edition of Approved Document 'J' that specifies "liners whose performance is at least equal to that corresponding to the designation T450 N2 S D3, as described in BS EN 1443: 1999 (now 2003 in which the designation is changed to T450 N2 D 3 G).

Reference is made to the example of clay liners meeting the requirements for Class A1 N2 or Class A1 N1 as described in BS EN 1457: 1999 (now 2003) that replaces BS 1181 and concrete liners meeting the requirements for the classification Type A1, Type A2, Type B1 or Type B2 as described in BS EN 1857:2003). In order to align with European practice it is now recommended that T400 is used as the temperature designation. This allows for the use of a concrete liner having the classification Type C1 or C2.

In the absence of there being a UK Notified Body covering testing to these standards, manufacturers may seek to have their liners tested by a recognized independent body that provides a certificate confirming the performance levels on the basis of testing to the relevant procedures specified in the appropriate standard. Recognised testing bodies might include the BBA, BRE Certification, BSRIA and CERAM. Other solutions for demonstrating compliance with the Building regulations may be acceptable as defined in the Approved Document J.

It is recommended that the validity of certification for the liners or evidence of compliance with Building Regulations be checked prior to purchase.

SPECIAL NOTES When installed, used and maintained correctly these types of liners are considered to provide a life equal to that of the dwelling. Specific guidance is given in the Approved Document J in relation to the installation of liners and construction of masonry chimneys

Manufacturer	Product Name	Flue sizes	Approval Status
*Flue Liner flue sizes marked with an asterisk are those covered by a BBA/BSRIA/HETAS Certificate. Other sizes, not asterisked, have been declared by the manufacturer to be produced to the same specification.			
Anki Chimney Systems	Anki Round Liners	130*, 150*, 170, 200*, 250*, 300*, 350* mm round and 150x260 mm oval	CE Mark: TÜV Cert. no.0036 CPD 90219 002
Wavin UK (Holdings) Ltd	Hepworth Class A1 Clay Flue Liners	125, 150, 185, 210, 225, 250, 300 mm round 185, 200, 225, 250, 300 mm square. (22.5, 30.0, 37.5 degree bends for all sizes/types)	Manufacturer claims meets Building Regulations
Poujoulat (UK) Ltd.	Kedddy flue linings	225mm round, 200, 225, 250, 280, 300, 355, 400, 435, 500 mm square and 300 x 420 mm rectangular. Special sizes made to order.	Manufacturer claims meets Building Regulations
Schiedel Chimney Systems	Ceramic Liners	150, 200, 225, 250 & 300 mm round; 180 & 200 mm square.	CE Mark: LGA Cert no. 0780-CPD-BBW 0317022. Tested to Din EN 1457:1999 + AC: 1999, + A1: 2002. Designation is A1N1.
Schiedel Chimney Systems	Isokern liners	130, 150*, 170, 175*, 200*, 225*, 250, 300, 350, 400, 450, 500, 600, 700, 900 up to 1000 mm round and 150x260 mm oval.	CE Mark: TÜV Cert. no. 0036-CPD-90219 002

E. DOUBLE SKIN FLEXIBLE CHIMNEY RELINING SYSTEMS

TYPES

Made from stainless steel these liners have a spirally wound double skin construction that has a smooth inner flueway. These flexible liners are specifically designed for use with solid fuel. **Double skin liners are not to be confused with single skin flexible liners which are designed solely for use with gas fires which must not be used with solid fuel appliances under any circumstances.**

APPROVALS

All liners must satisfy Building Regulations. This can be achieved by meeting the requirements of the 2002 Edition of Approved Document 'J' that specifies "liners whose performance is at least equal to that corresponding to the designation T450 N2 S D3, as described in BS EN 1443: 1999 (now 2003 with the changed designation T450 N2 D3 G)". In order to align with European practice it is now recommended that T400 is used as the temperature designation (see 'Approved Document J: 2002 Edition: Guidance and Supplementary Information on the UK Implementation of European Standards for Chimneys and Flues').

Products having a CE mark according to BS EN 1856-2:2004 and having a designation T400 N1 D Vm L40020 G where L40020 is the minimum material specification of the National Annex to BS EN 1856-2 meet this requirement. Alternatively products may have the designation T400 N2 D V3 L40020 G having been independently tested for their corrosion resistance according to Annex A3 of BS EN 1856-1:2003. Currently the CSTB, and TÜV have recognised testing approval schemes. These certificates can be used as evidence to satisfy Building Regulations approval. The current validity of their certification should be checked prior to purchase. Additional guidance is given in the Approved Document J of the Building Regulations 2000 (paragraph 2.20), which came into effect on 1st April 2002.

SPECIAL NOTES

These liners are for relining existing brick chimneys and are not to be used as a liner for new masonry chimneys. Liners for new build are referenced in section D. These liners should give a normal life of 10 years or more when correctly installed, used and maintained. However, these flexible liners whilst being easier to install and replace are not permanent and prolonged periods of slow burning particularly using solid fuels, combined with inadequate cleaning of the flueways can cause corrosion damage which reduces the expected life of the liner to less than 5 years. If there is a risk that these conditions can occur the non-metallic liner systems are recommended and under normal use should give a life equal to that of the dwelling.

Manufacturer	Product Name	Flue sizes	Approval Status
*Chimney Relining System flue sizes marked with an asterisk are those covered by the CSTB/BSRIA/TÜV/LNE Certificate. Other sizes, not asterisked, have been declared by the manufacturer to be produced to the same specification.			
Docherty Chimney Group	Fire Flexmaster	125*, 150*, 175, 200 mm round	BSRIA Type Test report No. 40143/1 Edition 5, November 2009 to BS EN1856-2: 2004 and BS EN 1443:2003.
Dutch Environment Corporation BV	Decflex TW (316L)	100, 105, 110, 112, 120, 125, 127, 130, 133, 140, 150, 152, 154, 160, 167, 180, 200, 203, 225, 229, 250, 300, 350 mm round	CE Mark: CSTB Cert. no. 0679-CPD-0058. Tested to EN 1856-2, CSTB Cert. no. 086.01/02-6
Dutch Environment Corporation BV	Decflex TW (316Ti)(TS)	100, 105, 110, 112, 120, 125, 127, 130, 133, 140, 150, 152, 154, 160, 167, 180, 200, 203, 225, 229, 250, 300, 350 mm round	CE Mark: CSTB Cert. no. 0679-CPD-0058. Tested to EN 1856-2, CSTB Cert. no. 086.01/02-6
Dutch Environment Corporation BV	Decflex TW 904L (TSE)	100, 105, 110, 112, 120, 125, 127, 130, 133, 140, 150, 152, 154, 160, 167, 180, 200, 203, 225, 229, 250, 300, 350 mm round	CE Mark: CSTB Cert. no. 0679-CPD-0058. Tested to EN 1856-2, CSTB Cert. no. 086.01/02-6
Fenton's Flue and Chimneys	Stackflex (316)	125, 150, 175, 200 mm round	CE Mark: TÜV Certificate No. 0036 CPD 9195 025 Rev 02
Fenton's Flue and Chimneys	Stackflex (904)	125, 150, 175, 200 mm round	CE Mark: TÜV Certificate No. 0036 CPD 9195 025 Rev 02
Midtherm Flue Systems Limited	Euroflex (in 316L and 904L steel)	125*, 150*, 175*, 200*, 230*, 250*, 300* mm round	CE Mark : IMQ Certificate No. 0051-CPD-0033 to EN 1856-2: 2004 Report No. A 102-00/02
Midtherm Flue Systems Limited	Midflex (in 316L and 904L steel)	5", 6", 7", 8"	CE Mark : TÜV Certificate 0036-CPD-91258 001 Tested to EN 1856-2:2004. Designation T400 N1 W V2 L99012

Continued on next page

E. DOUBLE SKIN FLEXIBLE CHIMNEY RELINING SYSTEMS (continued)

Manufacturer	Product Name	Flue sizes	Approval Status
*Chimney Relining System flue sizes marked with an asterisk are those covered by the CSTB/BSRIA/TÜV/LNE Certificate. Other sizes, not asterisked, have been declared by the manufacturer to be produced to the same specification.			
MI-Flues Ltd.	Quattro DS	125*, 155*, 180*, 200*, 225*, 250*, 300* mm round	Tested to EN 1856-2, BSRIA Cert. no. 18790A/1
MI-Flues Ltd.	Quattro SS	125*, 155*, 180*, 200*, 225*, 250*, 300* mm round	Tested to EN 1856-2, BSRIA Cert. no. 18790A/1
Poujoulat (UK) Ltd	Tubinox L (316L)	100*, 125*, 130*, 150*, 155*, 180*, 200*, 230*, 250*, 300* mm round	CE Mark: Cert. No.0071-CPD-0047. Tested to BS EN 1856-2:2004
Poujoulat (UK) Ltd	Tubinox FL (316L)	100*, 125*, 130*, 150*, 155*, 180*, 200*, 230*, 250*, 300* mm round	CE Mark: Cert. No.0071-CPD-0047. Tested to BS EN 1856-2:2004
Poujoulat (UK) Ltd	Tubinox LHR (904L)	100*, 125*, 130*, 150*, 155*, 180*, 200*, 230*, 250*, 300* mm round	CE Mark: Cert. No.0071-CPD-0047. Tested to BS EN 1856-2:2004
Schiedel Chimney Systems	Tecnoflex 316L	100*, 113*, 120*, 140*, 150*, 160*, 180*, 200*, 230*, 250*, 300*, 350*, 400* mm round	CE Mark TÜV Cert. no. 0036-CPD-9195 025 Rev 02; Model 2. Tested to BS EN 1865-2 and BS EN 1859
Schiedel Chimney Systems	Tecnoflex 904L	100*, 113*, 120*, 140*, 150*, 160*, 180*, 200*, 230*, 250*, 300*, 350*, 400* mm round	CE Mark TÜV Cert. no. 0036-CPD-9195 025 Rev 02; Model 4. Tested to BS EN 1865-2 and BS EN 1859
Schoorsteentechniek Brummen b.v.	PAHFLEX Superflex (316)	100, 110, 120, 125, 130, 140, 150, 160, 180, 200, 250 mm round	CE Mark, Tuv Suddeutscland Bau und Betreib, Certificate 0036 CPD 91258 001 tested to EN 1856-2:2004,
Schoorsteentechniek Brummen b.v.	PAHFLEX Superflex (904)	100, 110, 120, 125, 130, 140, 150, 160, 180, 200, 250 mm round	CE Mark, Tuv Suddeutscland Bau und Betreib, Certificate 0036 CPD 91258 001 tested to EN 1856-2:2004,
Topstak Chimney Specialists Ltd	Multiflex 316	100*, 125*, 154*, 180*, 200*, 230*, 250*, 300* mm round	CE Mark: LNE Cert. no. 0071-CPD-0024. Designation code T600 P2 W VmL50010 G
Topstak Chimney Specialists Ltd	Multiflex 904	100*, 125*, 154*, 180*, 200*, 230*, 250*, 300* mm round	CE Mark: LNE Cert. no. 0071-CPD-0024. Designation code T600 P2 W VmL70010 G
Turner & Wilson Ltd.	Twinflex MF316	100, 125, 150*, 175, 200, 250	Tested to BS EN 1856-2:2004. BSRIA Report No. 53404/2; November 2010. Designation code T600 N1 D VmL50010 G
Turner & Wilson Ltd.	Twinflex MF904	100, 125, 150*, 175, 200, 250	Tested to BS EN 1856-2:2004. BSRIA Report No. 53404/2; November 2010. Designation code T600 N1 D VmL70010 G

F. FLUE PIPES – FOR CONNECTING APPLIANCE TO CHIMNEY

TYPES Made from either 0.6 mm minimum thick 316 grade stainless steel or vitreous enameled low carbon steel in a variety of finishes and colours, these pipes are available with a choice of bends and accessories.

APPROVALS Stainless steel flue pipes must satisfy Building Regulations via meeting the recommendations of Approved Document J or the recommendations of BS 6461: Part 1, 1984(1998), or BS 7566:1992 (1998), (now replaced by BS EN 12391-1:2003). Vitreous enameled flue pipes should meet BS 6999 1984(1998), (now replaced by EN 10209:1996 – see BS EN 1856-2:2004). The current validity of their Agrément Certificate or evidence of compliance with Building Regulations should be checked prior to purchase. Metal connecting flue pipes to BS EN 1856-2 must be manufactured to the designation T400 N1 D Vm Lxxxx Gxx, where xxxxx is the material specification in the National Annex and xx is the specified separation from combustible material.

SPECIAL NOTES These flue pipes should give a normal life equal to that of the heating appliance when correctly installed, used and maintained. However, prolonged periods of slow burning particularly using solid fuels, combined with inadequate cleaning of the flueways can cause corrosion damage which may reduce the expected life of the product.

These products must only be used to connect a heating appliance to a chimney and not as a flue liner within a chimney, unless the product is independently certified as suitable for re-lining purposes and has an equivalent designation to T400 N2 S D3 described in BS EN 1443:1999 (now 2003 with the changed designation T400 N2 D 3 Gxx). See section G below.

Manufacturer	Product Name	Flue Sizes	Approval Status
Vitreous Enameled Low Carbon Steel			
Docherty Chimney Group	Vitmaster	100,125,150,175 mm round	Tested to BS EN 1856-2:2004 & BS EN 1443:2003. BSRIA Report no. 19765/1, April 2007.
Midtherm Flue Systems Ltd	Vitrelux	100, 125, 150, 175, 200 mm	Tested to BS EN 1856-2: 2004 and BS EN 1443: 2003. BSRIA Report No. 19193/4
MMF Ltd.	Proheat	4, 5, 6, 7, 8 ins.	Tested to BS 6999:1989. BSRIA report No. 17721/1
MMF Ltd.	Uni-Vit	4, 5, 6, 7, 8 ins.	Tested to BS 6999:1989. BSRIA report No. 17721/3
Pennine Systems Ltd	Premier Flue	100, 125, 150, 175, 200 mm	Manufacturer claims to BS 6999:1989
Poujoulat (UK) Ltd	Classic	130, 150, 180, 200 mm	CE Mark: Cert. No. 0407-CPD-077. Meets BS EN 1856-2:2003.
Poujoulat (UK) Ltd	Premium	130, 150, 180, 200 mm	CE Mark: Cert. No. 0407-CPD-077. Meets BS EN 1856-2:2003

Minimum 0.6 mm Thick 316 Stainless Steel Flue Pipes

Docherty Chimney Group	Fluemaster	100,125,150,175, 200 mm round	Tested to BS EN 1856-2:2004 & BS EN 1443:2003. BSRIA Report no. 19765/2, Jan 2008.
Midtherm Flue Systems Ltd	Single Wall 316 grade 1mm thick	5, 6, 7, 8 ins.	Type Test to BS EN 1856-2: 2004 and 1443: 2003 BSRIA Report No. 19193/5
MMF Ltd.	Proheat	5, 6, 7, 8 ins.	Meets 2000 Building Regulations. BSRIA report No. 17721/2 and 17721/4
MMF Ltd.	Proheat Streamline	130, 150 mm	Meets 2000 Building Regulations. BSRIA report No. 17721/2 and 17721/4
Pennine Systems Ltd	Premier SW Single Wall 1mm thick 316 Grade	5, 6, 7, 8 ins.	Meets 2000 Building Regulations.
Schiedel Chimney Systems	Prima Plus 1.0 mm Prima Plus 0.6 mm	130, 150, 180, 200 mm round	CE Mark TÜV Cert. No. 0036-CPD-9195 017; Model 3. Tested to BS EN 1865-2 and BS EN 1859

G. NON METALLIC CHIMNEY RE-LINING SYSTEMS

TYPES There is a variety of different systems where non-metallic re-lining is applied to the flue within an existing domestic chimney. In most cases these systems use a special formulation of ceramic or concrete based materials that are installed by specialist contractors that are approved or registered by the re-lining manufacturer.

APPROVALS All re-lining systems must satisfy Building Regulations. This can be achieved by meeting the requirements of the 2002 Edition of Approved Document 'J' that specifies "re-lining systems whose performance is at least equal to that corresponding to the designation T450 N2 S D3, as described in BS EN 1443: 1999 (now 2003 with the changed designation T450 N2 D 3 G)". In order to align with European practice it is now recommended that T400 is used as the temperature designation (see 'Approved Document J: 2002 Edition: Guidance and Supplementary Information on the UK Implementation of European Standards for Chimneys and Flues').

At present there is no British or European Standard that specifically covers these types of chimney re-lining systems. It is therefore necessary that the suitability of the material and its application as a flue re-lining system is proven by having a recognised independent product approval certification that is accepted as demonstrating compliance with Building Regulations.

Recognised forms of certification include those issued by the BBA, BSRIA, Wimlas or other recognised independent testing authorities that issue Test Approvals that are accepted as demonstrating compliance to Building Regulations using recognised test and assessment procedures based upon British or European Standards. Such certificates should be confirmed with the issuing body as indicating that the product meets Building Regulations.

SPECIAL NOTES The Eldfast and Isokoat systems listed below are special formulations of ceramic binders and fine aggregates that are designed to provide a durable flue lining in a sound masonry chimney. These re-lining systems are for re-lining an existing brick chimney and are not to be used as liners for new masonry chimneys. Liners for new build are referenced in section D. These systems must be applied in accordance with the manufacturers instructions or Code of Practice by an installer who is Registered by the manufacturer as accredited by him for this task

When installed, used and maintained correctly an extended life can be expected. However, it is essential that the installation is carried out correctly ensuring that the minimum thickness of lining is applied and that the subsequent flue area is suitable for use with the fuel-burning appliance. This form of re-lining must not be relied upon to provide support to a structurally unstable chimney. The thermal insulation of a chimney re-lined in this way is greater than an unlined or conventional masonry chimney. It is the responsibility of the customer, installer and specifier to ensure that the re-lining and installation as a whole complies with current regulations and is covered by the appropriate approval at the time of installation.

Manufacturer	Product Name	Approval Status
Schiedel Chimney Systems	Isokoat chimney re-lining system	HETAS Type Test cert no.G/002/03
Landy Vent (UK) Ltd	Eldfast I chimney re-lining system	BSRIA Type Test [*] cert. no. 15459-1
Landy Vent (UK) Ltd	Eldfast II chimney re-lining system	DTI Type Test [*] report No 00-ELAB-0814-1

* (The material and its application has passed performance testing carried out using test procedures based upon the European Standard BS EN 1857:2003 to ascertain performance levels as defined in BS.EN 1443: 2003)

H. RIGID STAINLESS STEEL CHIMNEY RELINING SYSTEMS

TYPES Made from 0.6 or 1mm thick sections of high grade stainless steel these rigid liners and bends have spigot and socket joints for ease of installation and efficient performance.

APPROVALS All systems must satisfy Building Regulations. This can be achieved by meeting the requirements of the 2002 Edition of Approved Document J that specifies liners whose performance is at least equal to that corresponding to the designation T450 N2 S D3 as described in BS EN 1443:1999 (now 2003 but with a changed designation of T450 N2 D 3 G). In order to align with European practice it is now recommended that T400 is used as the temperature designation (see 'Approved Document J: 2002 Edition: Guidance and Supplementary Information on the UK Implementation of European Standards for Chimneys and Flues').

Products having a CE mark according to BS EN 1856-2:2004 and having a designation T400 N1 D Vm L40060 G where L40060 is the minimum material specification considered necessary to meet HETAS Ltd recommended requirement. Currently the CSTB, and TÜV have recognised testing approval schemes. These certificates can be used as evidence to satisfy Building Regulations approval. The current validity of their certification should be checked prior to purchase. Additional guidance is given in the Approved Document J of the Building Regulations 2000 (paragraph 2.20), which came into effect on 1st April 2002.

SPECIAL NOTES These liners are for re-lining existing brick chimneys and are not to be used as a liner for new masonry chimneys. Liners for new build are referenced in section D.

These liners have a thickness of either 0.6 or 1mm. They should have a life expectancy of 10 years or more when correctly installed, operated and maintained. However, prolonged periods of slow burning particularly using solid fuels, combined with inadequate cleaning of the flueways can cause corrosion damage which may reduce the expected life of the liner. All components recommended by the manufacturer, such as spacers, must be used. The manufacturer's installation instructions must be adhered to.

Manufacturer	Product Name	Flue sizes	Approval Status
Midtherm Flue Systems Ltd	Single Wall 316 grade 0.7 and 1.0mm thick	5, 6, 7, 8 ins	Type Test to BS EN 1856-2: 2004 and 1443: 2003. BSRIA Report No. 19193/5
Poujoulat (UK) Ltd.	Condensor CD	180, 200, 250, 300, 350, 400 mm	CE Mark Cert. no. 0071-CPD-0025/0042. Meets BS EN1856-2
Schiedel Chimney Systems	Prima Plus 0.6mm	130, 150, 180, 200, 250, 300 mm round	CE Mark TÜV Cert. no. 0036-CPD-9195 019; Model 2. Tested to BS EN 1859
Schiedel Chimney Systems	Prima Plus 1.0mm	125, 150, 180, 200, 250, 300 mm round	CE Mark TÜV Cert. no. 0036-CPD 9195 019; Model 2. Tested to BS EN 1859

J. CAST IN-SITU CONCRETE RE-LINING SYSTEMS

TYPES

The cast in-situ concrete re-lining system is one of a number of methods of lining a domestic chimney. It is generally used to line chimneys of existing masonry construction. FOR LINING NEW MASONRY CHIMNEYS SEE SECTION D. An inflatable rubber former is inserted in the flue of the chimney and pressurised until it reaches the diameter required, centralised and the void formed between the liner and the chimney filled with an approved mix of lightweight insulating concrete. Once the concrete has cured and is hard the former is deflated and removed.

APPROVALS

Building Regulations 2000 ADJ of 1st April 2002 under paragraph 2.20 a) ii permits the use of 'a cast in-situ relining system where the material and installation procedures are independently certified as suitable for use with solid fuel burning appliances'. To be considered for HETAS listing it is required that a cast in-situ relining system meets with appropriate clauses of BS EN 1857:2003 at the level T400 N2 D3 G and that the materials are specified, prepared and installed in accordance with an independently approved and monitored Code of Practice. To date the NACE and CICO systems have applied and have been accepted for HETAS 'listing' as having met this requirement. The NACE system was type tested by Gastec at CRE and Certified by HETAS who also monitor the NACE QA system. The CICO system has BBA Certification and BBA monitor the CICO QA system. Other systems may be approved in due course and listed on the HETAS web site.

SPECIAL NOTES

When installed, used and maintained correctly a long life can be expected. However, it is essential that the installation is carried out in accordance with the Code of Practice upon which approval is based. This requires that the former is properly spaced to maintain the correct minimum thickness of concrete. Breaking into the chimney at bends in the flue-way is necessary to ensure correct spacing is maintained and to prevent the former from touching the chimney wall. Failure to do this can result in the concrete lining being too thin or incomplete, which will reduce the life of the system and require major repair work.

The appropriate flue size must be provided to suit the proposed or potential appliance to be fitted. These linings must not be relied upon to provide support to a structurally unstable chimney. The thermal insulation of a chimney lined in this way is greater than an unlined masonry chimney. It is the responsibility of the customer, installer and specifier to ensure the lining and the installation as a whole conforms with current regulations and is covered by the appropriate approval at time of installation.

Organisation	System	Approval Status
National Association of Chimney Engineers	NACE Cast in-situ Concrete Lining System	HETAS Cert J/001/03
CICO Chimney Linings Ltd.	CICO Chimney Lining System	BBA Cert 04/4122

Addresses of Cast in-situ Concrete Re-lining organisations from which further information can be obtained:-

National Association of Chimney Engineers
P O Box 849
Metheringham
Lincoln
Lincolnshire
LN4 3WU
Tel: 01526 322555
Fax: 01526 323181
e-mail: info@nace.org.uk
Web: www.nace.org.uk

CICO Chimney Linings Ltd.
North End Wood
Hinton Road, Darsham
Saxmundham
Suffolk
IP17 3QS
Tel: 01986 784044
Fax: 01986 784763
e-mail: CICO@chimney-problems.co.uk
Web: www.chimney-problems.co.uk