CI/SfB
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BBA BRITISH BOARD OF AGRÉMENT
TECHNICAL APPROVALS FOR CONSTRUCTION

Designated by Government to issue European Technical Approvals

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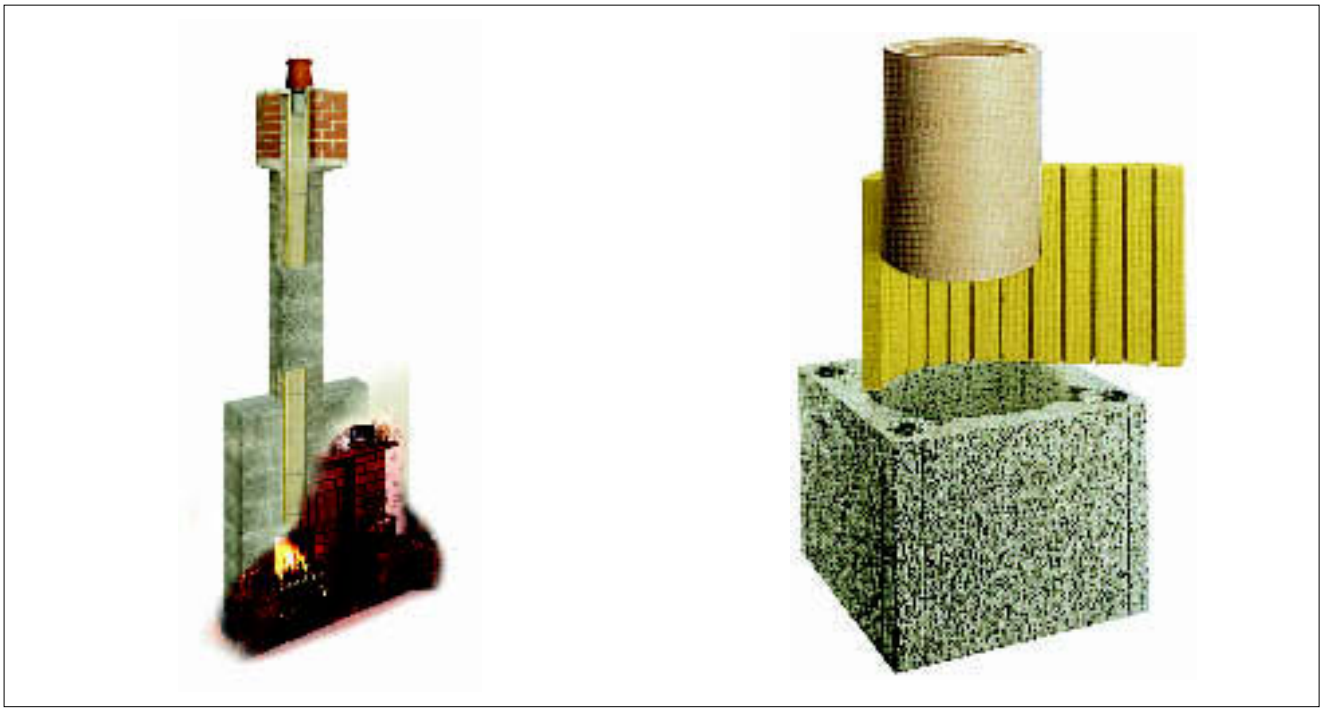
Agrément Certificate No 03/4019

SCHIEDEL SWIFT CHIMNEY SYSTEMS

Revêtement de cheminée
Schornsteinauskleidung

Product



- *THIS CERTIFICATE OF CONFIRMATION RELATES TO THE SCHIEDEL SWIFT CHIMNEY SYSTEMS, A RANGE OF CHIMNEY SYSTEMS FOR INTERNAL AND EXTERNAL USE IN NEW OR EXISTING DOMESTIC BUILDINGS.*
- *The systems are for use in accommodations up to 15 m in height with traditional masonry, timber or steel-frame construction.*
- *The systems are for use with gas, oil or solid-fuel burning appliances or solid-fuel open fires with a maximum heat output of 45 kW.*
- *Each chimney must serve only one appliance or solid-fuel open fire.*

continued

Regulations

1 The Building Regulations 2000 (as amended) (England and Wales)

The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used in assessing the compliance of chimney systems with the Building Regulations. In the opinion of the BBA, the Schiedel Swift Chimney Systems, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement:	A1	Loading
Comment:		The systems will satisfy this Requirement provided they are correctly installed and supported, and the maximum height restrictions are observed. See sections 9.1 to 9.3 of this Certificate.
Requirement:	C4	Resistance to weather and ground moisture
Comment:		Provided chimneys passing through a roof are installed in accordance with this Certificate using conventional flashing methods and chimneys are protected from contact with the ground by a damp-proof system, the construction can satisfy this Requirement. See section 7.10 of this Certificate.
Requirement:	J2	Discharge of products of combustion
Comment:		Provided the chimney and stack heights comply with this Certificate, the systems meet this Requirement. See section 7.6 of this Certificate.
Requirement:	J3	Protection of the building
Comment:		When used in accordance with this Certificate the systems meet this Requirement. See section 7.6 of this Certificate.

continued

continued

Requirement:	J4	Provision of information
Comment:		When installed in accordance with this Certificate, the systems meet this Requirement. See section 7.7 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The systems are acceptable. See section 13.1 of this Certificate.

2 The Building Standards (Scotland) Regulations 1990 (as amended)

In the opinion of the BBA, the Schiedel Swift Chimney Systems, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Technical Standards as listed below.

Regulation:	10	Fitness of materials and workmanship
Standards:	B2.1 and B2.2	Selection and use of materials, fittings, and components, and workmanship
Comment:		The systems are acceptable and comply with these Standards. See section 13.1 of this Certificate.
Regulation:	11	Structure
Standard:	C2.1	Stability
Comment:		The systems will satisfy this Standard provided they are correctly installed and supported, and the maximum height restrictions are observed. See sections 9.1 to 9.3 of this Certificate.
Regulation:	14	Combustion appliance installations
Standards:	F3.1 and F3.2	General standards for small combustion appliance installations — Installations
Standards:	F3.3 and F3.4	General standards for small combustion appliance installations — Removal of products of combustion
Standards:	F3.5 to F3.8	General standards for small combustion appliance installations — Protection from products of combustion
Standard:	F3.9	General standards for small combustion appliance installations — Relationship to combustible materials
Standard:	F3.11	General standards for small combustion appliance installations — Extract fans
Standard:	F3.12	General standards for small combustion appliance installations — Identification of combustion appliance installations
Standard:	F4.1	Solid fuel combustion appliances installations with an output rating not more than 50 kW — Installations
Standards:	F4.4 to F4.10	Solid fuel combustion appliances installations with an output rating not more than 50 kW — Removal of products of combustion
Standards:	F4.11 to F4.13	Solid fuel combustion appliances installations with an output rating not more than 50 kW — Protection from products of combustion
Standards:	F4.14 and F4.15	Solid fuel combustion appliances installations with an output rating not more than 50 kW — Relationship to combustible material
Standard:	F5.1	Oil-fired combustion appliance installations with a net input rating not more than 70 kW — Installations
Standards:	F5.5 to F5.10	Oil-fired combustion appliance installations with a net input rating not more than 70 kW — Removal of productions of combustion
Standard:	F6.1	Gas-fired combustion appliance installations with a net input rating not more than 70 kW — Installations
Standards:	F6.5 to F6.10	Gas-fired combustion appliance installations with a net input rating not more than 70 kW — Removal of products of combustion
Standards:	F6.11 to F6.13	Gas-fired combustion appliance installations with a net input rating not more than 70 kW — Protection from products of combustion
Standards:	F6.14 and F6.15	Gas-fired combustion appliance installations with a net input rating not more than 70 kW — Relationship to combustible materials
Comment:		When installed in accordance with this Certificate, the systems can satisfy the relevant parts of these Standards. See section 7.6 of this Certificate.
Regulation:	17	Resistance to moisture
Standard:	G2.5	Preparation of a site and resistance to moisture from the ground — Resistance to moisture from the ground
Comment:		Provided chimneys are protected from contact with the ground by a traditional damp-proof system, the construction can satisfy this Standard. See sections 7.7 and 7.10 of this Certificate.
Standard:	G3.1	Resistance to precipitation — Resistance to precipitation
Comment:		Provided chimneys passing through a roof are installed in accordance with this Certificate using conventional flashing methods, the construction can satisfy this Standard.

3 The Building Regulations (Northern Ireland) 2000

In the opinion of the BBA, the Schiedel Swift Chimney Systems, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The systems are acceptable. See section 13.1 of this Certificate.
Regulation:	C4	Resistance to ground moisture and weather
Comment:		Provided chimneys passing through a roof are installed in accordance with this Certificate using conventional flashing methods and chimneys are protected from contact with the ground by a damp-proof system, the construction can satisfy this Regulation. See section 7.10 of this Certificate.

continued

- *It is essential that the systems are installed and used in accordance with the manufacturer's instructions and the conditions set out in this Certificate.*

Confirmation of IAB Certificate No 01/0121 issued by the Irish Agrément Board, NSAI, Glasnevin, Dublin 9, Ireland.

continued

Regulation:	D1	Stability
Comment:		The systems will satisfy this Regulation provided they are correctly supported and the maximum height restrictions are observed. See sections 9.1 to 9.3 of this Certificate.
Regulation:	L2	Heat-producing appliances and associated constructions
Comment:		When installed in accordance with this Certificate, the systems can satisfy this Regulation. See section 7.6 of this Certificate.

4 Construction (Design and Management) Regulations 1994 (as amended)

Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See sections: 6 *Delivery and site handling* and 14 *General* (Installation).

Technical Specification

5 Description

5.1 The construction of the Schiedel Swift Chimney Systems comprises three layers:

(1) Inner — refractory clay pot flue liner to BS EN 1457 : 1999 (see Table 1)

(2) Insulation — flexible mineral wool with moulded slots to allow it to be curved to fit in the chimney block.

(3) Outer — lightweight, precast, interlocking, expanded concrete chimney block to BS EN 1806 : 2000. A hole passing through the block at each corner accommodates reinforcing bars where required. Special ventilation outlets are available for use with central heating installations (see Table 1).

Table 1 Nominal characteristics — Liners and blocks

Component	Size (mm)	Weight (kg)	Crushing strength
Flue liner			
120 mm internal dia	120 x 330	5.2	120 kN
200 mm internal dia	200 x 330	7.5	120 kN
Chimney block			
120 mm dia flue	320 x 320 x 330	16	11.3 Nmm^{-2}
200 mm dia flue	400 x 400 x 330	23	11.3 Nmm^{-2}
Hollow/splitter block	400 x 195 x 330	19	7.8 Nmm^{-2}
Concrete block	400 x 200 x 100	17	7.0 Nmm^{-2}
Bend block	210 x 110 x 400	12	—

5.2 Other components and accessories[1] include:

Fire lintel — lightweight concrete incorporating expanded, size-blended clay particles in refractory cement to BS 5977-2 : 1983. In two parts — back and front.

Flue terminal — to BS 1181 : 1999, a blend of suitable clays with choice of colour.

Flue liner sealant — refractory, ceramic putty.

Hollow block — two-cavity, lightweight concrete.

Splitter block — two-cavity, hollow, lightweight concrete. Can be split to form two single-cavity blocks.

Chimney block — solid, lightweight concrete.

Special-sized block — concrete.

Lintel — in two parts (back and front). Expanded clay bound with refractory cement (high-alumina cement).

Chimney corbel — concrete.

Coping unit — dense concrete capping with mild steel reinforcement.

Wall tie fixings — brackets of stainless steel No 1.4301 to BS EN 10088-1 : 1995, strips of stainless steel expanded metal and timber-frame wall ties.

Expansion plate and inspection door — 0.5 mm thick stainless steel No 1.4436 to BS 1449-1.1 : 1991 and BS EN 10088-1 : 1995.

Inspection pipe — preformed.

Ventilation grille.

Junction pipes — preformed liner.

Chimney tray — lead tray for flashing details where the stack penetrates the roof.

Reinforcing bars — 10 mm diameter, high-yield steel. Plastic stoppers are available (as required).

Chimney pot — standard tapered shape.

Mortar shield — used when applying mortar to the chimney block. It enables a constant depth of mortar to be applied and prevents excess mortar from falling into the flue liner.

(1) A fireback is not supplied with the system.

5.3 The product is available in three systems and a bend kit:

Open fire system — for use internally and externally with all fuel types in masonry, timber-frame and steel-frame constructed houses. The standard chimney breast width is 1640 mm but can be reduced to a minimum of 1220 mm.

Back-to-back (party wall) system — available for use in masonry constructions and allows each chimney flue to be combined into one chimney stack at roof level.

Central heating system — for use with all central heating boilers and stoves including condensing boilers requiring back ventilation via a ventilation grille. An inspection door and preformed inspection

pipe are incorporated to give access for cleaning and maintenance.

Bend kit — there are two types for use where a flue offset is required:

Chimney breast kit — for use within the breast, and

Standard bend kit — for all other applications.

6 Delivery and site handling

6.1 The components are delivered shrink-wrapped on pallets. The pack for a standard chimney can be fitted on two pallets. Pallets should be stored in the dry on a firm, level base until required for use. Each pallet contains instructions on storage and installation and carries a label bearing the manufacturer's name, flue size, chimney height, production batch number and the BBA identification mark incorporating the number of this Certificate.

6.2 When a pallet is unwrapped, the components must be handled with care. If not used straight away, the components must be stored off the ground and protected from damage and weather.

Design Data

7 General

7.1 Schiedel Swift Chimney Systems, when installed and used in accordance with this Certificate, will perform in a safe and satisfactory manner in conjunction with gas, oil or solid-fuel burning appliances or solid-fuel open fires.

7.2 The design and build of the chimney must be in accordance with normal good practice, BS 5628-1 : 1992, BS 5628-3 : 2001, BS EN 1443 : 1999 and BS 5854 : 1980.

7.3 The performance of the clay flue liner is at least equal to that corresponding to the designation T600 N2 S D 3 as described in BS EN 1443 : 1999, and meets the requirements for Class A1 N2 or Class A1 N1 as described in BS EN 1457 : 1999.

7.4 It is recommended that straight-flue chimneys are used wherever possible. Each chimney must serve only one fuel-burning appliance or solid-fuel open fire. The structure to which the chimney is attached must be in accordance with the relevant Code of Practice.

7.5 The size and formation of fire openings must be in accordance with BS 1251 : 1987 and BS 8303, Parts 1 to 3 : 1994. Adequate access for chimney cleaning must be available through either the appliance or soot doors in the chimney.

7.6 The chimney must be positioned so as to prevent discharge gases from entering the building in which it is installed or adjacent buildings, in accordance with the national Building Regulations:

England and Wales

Approved Document J, Sections 2.10, 3.23 and 4.6

Scotland

Technical Standard (F5.10) or (F6.10)

Northern Ireland

Technical Booklet L.

7.7 An indelible notice giving information essential to the correct application and use of the chimney facility should be permanently posted in the building in accordance with Requirement J4 of the Building Regulations (England and Wales) and Standard F3.12 of the Building Standards (Scotland) Regulations.

7.8 The block units comply with the general recommendations for materials for flue block chimneys given in BS 6461-1 : 1984, paragraph 5.6 (see also BRE's IP7/94 *Spillage of flue gases from solid-fuel combustion appliances*).

7.9 In common with all chimneys, a constructional hearth should be provided. Where the chimney is above the hearth, the hearth should be able to accommodate the weight of the appliance and its chimney (if the chimney is not independently supported).

7.10 In a new construction, the foundation depth for the chimney should match that of the main house foundations. Where a chimney is installed in an existing property, it must be supported on a concrete foundation designed in accordance with normal good practice and to frost-free depth, eg at least one metre below ground level for an external chimney and 400 mm below floor level for an internal chimney. A damp-proof system must be laid between the foundation and the chimney.

7.11 Chimney units should not be bonded into the building structure but should be tied to it at a maximum spacing of three units (ie 990 mm) and at the point of departure from the roof line, using the specified stainless steel fixings. Internal chimneys are tied to the structure with the stainless steel wall ties or the necessary support may be provided by the intermediate floors or by timber trimming at roof level. Consideration must be given to the effects on the adjacent structure of the loads imposed by the chimney.

7.12 Chimneys passing through floors must not be bonded to them. In concrete floors, a sliding joint must be formed by inserting a non-combustible material, eg mineral wool, between the chimney and the concrete. In timber floors, a gap of at least 40 mm must be maintained between the chimney and structural members, such as joists and rafters (after the units have been positioned, the gap is filled with mineral wool with a minimum density of between 25 kgm^{-3} and 30 kgm^{-3}).

7.13 With an external chimney, the design of the flue connection to the appliance must be in accordance with BS 6461-1 : 1984. Care must be taken to comply with the manufacturer's instructions concerning the weathering details for the connecting flue where it passes through a cavity wall.

8 Domestic heating appliances

8.1 The type of appliances suitable for use with the product are detailed below and the sizes of chimneys for use with them are given in Table 2:

Gas — appliances chosen from the SBGI list of CE-marked appliances. The manufacturer's advice on the correct connection to the chimney should be followed.

Oil — appliances chosen from BSI's *List of tested and approved domestic oil burning appliances* or OFTEC's *Oil-firing equipment directory*. The correct size of flue and connection to the chimney must be used.

Solid fuel — approved by HETAS (Heating Equipment Testing and Approval Scheme).

Table 2 Recommended chimney sizes[1] for appliance type

Type of fuel and appliance	Rated output (kW)	Schiedel chimney size (mm)
Gas[2]		
Fire		
central heating boiler	⩽20	200 diameter pipe
warm air convector	⩽45	200 diameter pipe
water heater		
Oil[2]		
closed room heater		
central heating boiler	⩽20	120 diameter pipe
warm air convector	⩽45	200 diameter pipe
water heater		
Solid		
closed appliances[3]	⩽20	120 diameter pipe[4]
open fire	⩽45	200 diameter pipe

(1) These are minimum sizes. The actual flue size must not be smaller than the outlet diameter of the appliance. Larger-sized chimneys can be used above oil and gas appliances, provided they are lined with a suitable and correctly-sized lining material.

(2) The flue size will be specified by the appliance manufacturer.

(3) Closed appliances include cookers, stoves, room heaters and boilers.

(4) Straight flues only.

9 Strength and stability

9.1 The chimney components are sufficiently strong to withstand normal site handling and accidental impacts associated with normal conditions of use.

9.2 The stability of the installed chimney is adequate with the lateral restraint provided by the interlocking units. Further restraint is provided by:

external chimneys — stainless steel ties

internal chimneys — expanded metal ties or supports at floor and roof levels.

9.3 The parts of the chimney projecting above the roof will remain stable, under the action normal wind forces, provided the stack heights do not exceed the limits given in section 10 of this Certificate.

9.4 Where the top section of the chimney is brick-clad, the cladding must be supported on the appropriate corbel unit and must not exceed the limits given in section 10 of this Certificate. If brick cladding is required from foundation level, it can be considered as self-supporting.

9.5 The basic compressive strength for the chimney units can be taken as 3000 kNm^{-2} (net cross sectional area).

9.6 The chimneys will not collapse or cause danger to the occupants of the building in the event of an accidental chimney fire caused by soot burn-out or gaseous explosions of the kind that may occur through malfunctioning of the heating appliance.

10 Height of chimneys

10.1 The maximum permissible chimney height above the foundation is 15 metres, with a brick-clad top section a maximum of two metres high supported on a corbel unit.

10.2 The maximum chimney height above the roof line is given in Table 3. Where the basic wind speed does not exceed 44 ms^{-1} (see BS 6399-2 : 1997), the height may be increased to 1.4 metres. Where a chimney stack has not been fitted with a corbel unit, reinforcement must be used and the chimney rendered (see sections 15.12 and 15.13 of this Certificate).

Table 3 Stack height (m) above roof line (max)

Type of chimney	Without reinforcement	With reinforcement
without corbel[1]	N/A	⩽1.4
with corbel	⩽1.2	1.2 to 1.4

(1) With render finish.

10.3 The height of the stack above the roof line must be in accordance with the requirements of the Building Regulations.

11 Proximity of combustible material

11.1 The recommended spacing and packing between the chimney and structural timbers (eg joists and rafters) are adequate to prevent excessive drying out of the timbers or the occurrence of any fire hazard. The spacing must be maintained throughout the chimney height. This requirement does not apply to skirting boards or floorboards; direct contact between these and the face of the chimney is permissible.

11.2 Generally it is unnecessary to box-in the chimney unless to maintain the specified 40 mm between the chimney and any loose combustible material, eg in an airing cupboard or insulated roof space.

12 Maintenance

12.1 Normal chimney cleaning with conventional brushes should be carried out at least annually, preferably at the start of the heating season, to ensure that the flue is not obstructed.

12.2 Regular inspection of the flueway will indicate the necessity for more frequent sweeping. The frequency of chimney sweeping depends on several factors, eg type and quantity of fuel used and method of operation of the appliance.

13 Durability

13.1 The materials used in the product are resistant to natural weathering and flue conditions.

13.2 The chimneys will have a minimum life of 60 years provided[1]:

installation is carried out in accordance with this Certificate

correct fuel is used

appliance is maintained in good working order and is not misused

chimney is swept regularly

system is not subject to mechanical damage

chimney size is matched to the type and rating of the appliance

exposed support ties are regularly checked and maintained.

(1) If these requirements are not met, the life of the chimney can be considerably reduced.

Installation

14 General

14.1 Installation of the Schiedel Swift Chimney Systems must be carried out in accordance with the requirements of this Certificate, the manufacturer's instructions[1], BS 5440-1 : 2000, relevant Codes of Practice and the Building Regulations.

(1) A full technical back-up service is available from the Certificate holder.

14.2 Installation of the chimneys does not present undue difficulty in terms of either their accommodation within traditional or system-built dwellings or their compatibility with accepted operational sequences. The systems are designed in modular units allowing quick assembly on site.

14.3 The components are of a weight not normally requiring mechanical handling equipment.

14.4 As the chimney components are of lightweight concrete, conventional concrete foundation is adequate to support the chimney (see section 7.10).

14.5 A constructional hearth must be present in all systems. It should be constructed in accordance with section 7.10 of this Certificate. The installation is the responsibility of the main contractor.

14.6 For internal systems, the flashings should be correctly placed and weathersealed to prevent rain penetration into the roof space.

14.7 For external systems, all joints should be sealed, sections passing through the structure made weathertight, and all brackets properly attached to the wall.

14.8 Where a chimney incorporates bends, it is essential that the liners are correctly mitred to ensure smooth and leaktight joints.

15 Procedure

15.1 The description here is for an internal system with a solid-fuel open fire and is typical for all constructions.

Fire chamber (Figure 1)

15.2 On the prepared foundation a damp-proof course is laid to cover the fireplace area. Two hollow blocks are placed on a bed of mortar either side with a special-sized concrete block placed on each inner face. More special-sized blocks are placed at the back joining the two pedestals. The sides and back are built up until the lintel level is reached (a height of three hollow blocks or one metre from the sub-floor level).

15.3 The back lintel is placed on a bed of mortar at the back of the fire chamber. The inner face of the lintel is sealed with the ceramic putty. The front lintel is set against the back lintel and the joint sealed with mortar. To flush the pedestal, a concrete block is placed either side of the lintel.

Chimney breast (Figure 1)

15.4 The first chimney block is placed on a bed of mortar on the lintel. The insulation is bent with the slots innermost and placed into the block. The ends of the flue pipe are cleaned and ceramic putty applied to the bottom rebate, the pipe placed into the block with the insulation surrounding it, pushed home and excess putty removed with a sponge.

15.5 The hollow and chimney blocks are built up to height and the hollow blocks capped with three special-sized concrete blocks either side of the chimney block. The mortar shield should be used when applying the mortar to the chimney block. It must be ensured that on each block the mortar forms a complete bed (ie without voids or gaps).

15.6 The chimney blocks are tied to the structure every third vertical block or a maximum of one metre:

masonry construction — expanded metal or stainless steel L-shaped ties

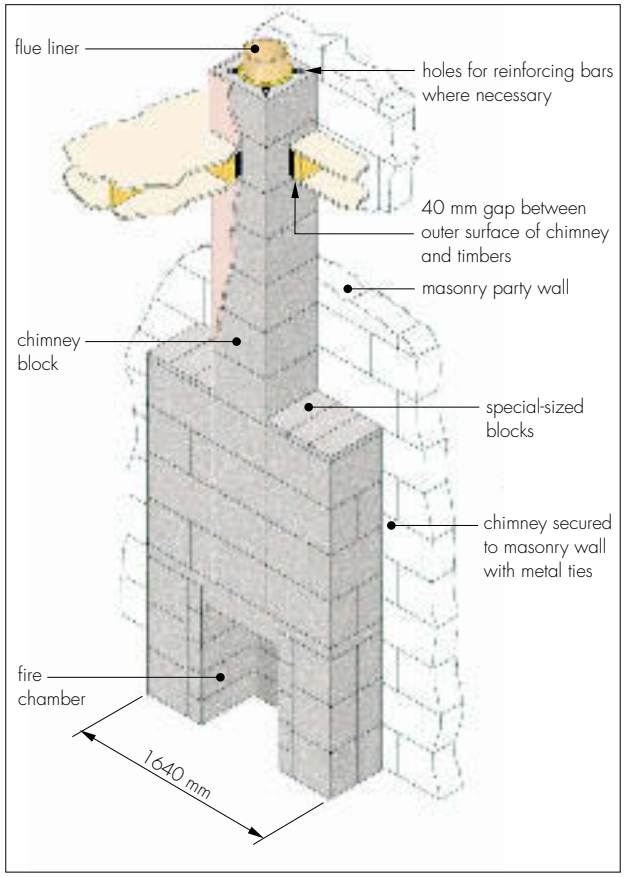
timber-framed construction — stainless steel, timber-frame wall ties.

Chimney breast to stack (Figure 1)

15.7 The chimney blocks are built up to stack height.

15.8 Floor or ceiling joists must be trimmed around the chimney blocks, maintaining a minimum gap of 40 mm between the structural timber and the face of the chimney. The gap must be filled with mineral wool or similar non-rigid, non-combustible material. Where passing through a concrete ceiling, the gap must be at least 30 mm and the gap filled as for a timber ceiling.

Figure 1 Construction of chimney breast and chimney to stack



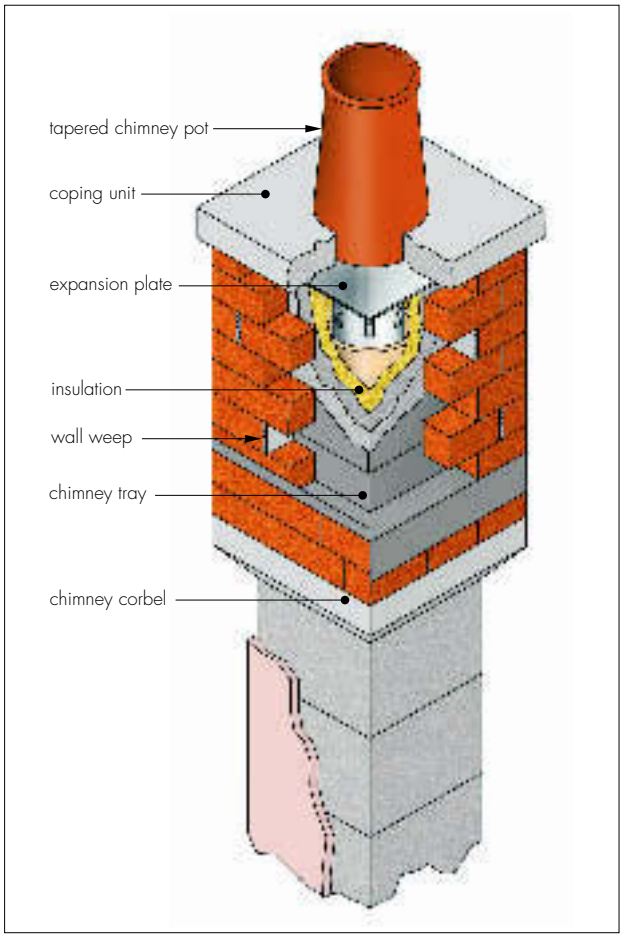
Chimney stack — brick/block cladding (Figure 2)

15.9 The concrete corbel is bedded on the chimney block such that the line of tiles/slates meets at its lowest a point approximately two brick courses up from the corbel where the chimney tray will be placed. The chimney blocks and brick/block courses are built up to this level and the chimney tray placed over the chimney block to sit on the bricks/blocks. The apron of the tray must be on the downward slope (lower) side of the chimney. The opening in the roof must be suitably trimmed by timber fixed to the roof members, and the gaps treated as for structural timbers in floors and ceilings.

15.10 The chimney blocks are placed and the brickwork/blockwork continued to the finished height. Weepholes should be built in as construction proceeds to ventilate and enable trapped moisture to escape.

15.11 The top flue pipe should be trimmed to suit the expansion plate which is placed and bedded onto the top chimney block. The coping unit is bedded onto the expansion plate. The chimney pot is placed into the hole in the coping unit and the gap filled with mortar or other non-porous material. Inside the pot, the gap between it and the expansion plate is also filled with the mortar.

Figure 2 Chimney stack



Reinforcement of chimneys

15.12 Where chimneys exceed the heights given in section 10 of this Certificate or do not have a corbel unit (eg with a rendered finish), they must be reinforced.

15.13 An anchor plate must be bedded on a chimney block below the lateral support or plastic stoppers inserted into the holes on the underside of the block. Reinforcing bars are inserted into the holes and grouted in place. Additional lengths of reinforcing bar are screwed to the lower one as construction proceeds and grouted in.

Bends

15.14 Chimneys should be vertical wherever possible but, where bends are unavoidable, the angle of the bend should be no greater than 45° to the vertical for oil-burning appliances and 30° to the vertical for solid-fuel appliances. There should be no more than two bends in the length of the chimney.

15.15 There are two bend kits available from the Certificate holder: standard and chimney breast. The breast kit contains all the components to make the bend and specially-cut blocks to support it around the bend area within the chimney breast. Installation methods are similar to those described in sections 15.2 to 15.6 of this Certificate.

Finishing

15.16 Exposed internal surfaces should be plastered or dry lined and skim coated. When dry lining, the plasterboard should be fixed with dabs of adhesive at a maximum of 600 mm centres. At edges, a 50 mm wide, continuous ribbon of adhesive must be used. Similarly at the junction with the ceiling, a continuous fillet of the adhesive must be used.

15.17 The fireplace can be finished by designs as would be suitable for traditional construction.

15.18 Exposed surfaces in the roof space should be rendered.

15.19 Exposed external surfaces should be rendered or brick clad.

Inspection

15.20 On completion, the installation should be checked to ensure:

blockwork joints have been fully sealed.

fire-stops and spacers are in place and secured in accordance with this Certificate and the manufacturer's instructions.

15.21 The fitting of the terminal and roof flashing should be inspected before the scaffolding is removed.

Technical Investigations

The following is a summary of the technical investigations carried out on Schiedel Swift Chimney Systems.

16 Tests

16.1 As part of the assessment leading to the issue of IAB Agrément Certificate No 01/0121, tests were undertaken to determine:

effect of thermal shock at 1000°C
adequacy of thermal insulation
effect of sweeping
leakage rate before and after thermal tests.

16.2 The IAB also carried out tests to determine the resistance to attack by acids.

16.3 A smoke test was undertaken on site.

17 Investigations

17.1 An examination was made of the data and investigations on which the IAB Certificate was based.

17.2 The manufacturing process was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

17.3 An examination was made of existing data to determine:

relevance of the test results in the context of use in the UK.
structural stability
durability.

17.4 A survey of users was carried out and visits made to existing sites to assess the practicability of installation and performance in use.

Bibliography

BS 1181 : 1999 *Specification for clay flue terminals*

BS 1251 : 1987 *Specification for open-fireplace components*

BS 1449-1.1 : 1991 *Steel plate, sheet and strip — Carbon and carbon-manganese plate, sheet and strip — General specification*

BS 5440-1 : 2000 *Installation of flues and ventilation for gas appliances of rated input not exceeding 60 kW (1st, 2nd and 3rd family gases) — Specification for installation of flues*

BS 5493 : 1977 *Code of practice for protective coating of iron and steel structures against corrosion*

BS 5628-1 : 1992 *Code of practice for use of masonry — Structural use of unreinforced masonry*
BS 5628-3 : 2001 *Code of practice for use of masonry — Materials and components, design and workmanship*

BS 5854 : 1980 *Code of practice for flues and flue structures in buildings*

BS 5977-2 : 1983 *Lintels — Specification for prefabricated lintels*

BS 6399-2 : 1997 *Loading for buildings — Code of practice for wind loads*

BS 6461-1 : 1984 *Installation of chimneys and flues for domestic appliances burning solid fuel (including wood and peat) — Code of practice for masonry chimneys and flue pipes*

BS 8303-1 : 1994 *Installation of domestic heating and cooking appliances burning solid mineral fuels — Specification for the design of installations*
BS 8303-2 : 1994 *Installation of domestic heating and cooking appliances burning solid mineral fuels — Specification for installing and commissioning on site*
BS 8303-3 : 1994 *Installation of domestic heating and cooking appliances burning solid mineral fuels — Recommendations for design and on site installation*

BS EN 1443 : 1999 *Chimneys — General requirements*

BS EN 1457 : 1999 *Chimneys — Clay/ceramic flue liners — Requirements and test methods*

BS EN 1806 : 2000 *Chimneys — Clay/ceramic flue blocks for single wall chimneys — Requirements and test methods*

BS EN 10088-1 : 1995 *Stainless steels — List of stainless steels*

Conditions of Certification

18 Conditions

18.1 This Certificate:

(a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;

(b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;

(c) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;

(d) is copyright of the BBA.

18.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, shall be construed as references to such publication in the form in which it was current at the date of this Certificate.

18.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

(a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

(b) remain covered by a valid Irish Agrément; and

(c) are reviewed by the BBA as and when it considers appropriate.

18.4 In granting this Certificate, the BBA makes no representation as to:

(a) the presence or absence of any patent or similar rights subsisting in the product or any other product;

(b) the right of the Certificate holder to market, supply, install or maintain the product; and

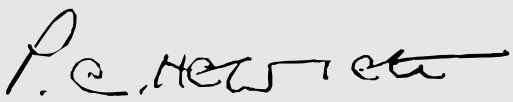
(c) the nature of individual installations of the product, including methods and workmanship.

18.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.

BBA BRITISH BOARD OF AGRÉMENT
TECHNICAL APPROVALS FOR CONSTRUCTION

In the opinion of the British Board of Agrément, Schiedel Swift Chimney Systems are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 03/4019 is accordingly awarded to Schiedel Chimney Systems.

On behalf of the British Board of Agrément



Date of issue: 28th March 2003

Chief Executive

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