



Quality single wall stainless steel
imperial connecting flue pipe.
Designed and built in Britain.
The SIGMA range from SFL.

SIGMA

1mm Single Wall Connecting Flue Pipe

For wood & multi fuel appliances



BRITISH BUILT
FLUE & CHIMNEY SYSTEMS FROM SFL

CE
UK
CA

Sigma Single Wall Connecting Flue Pipe



British Built
Flue System



Residential
Application



130-200mm
Diameter



Quick
Installation



T600
Rating



Multi-Fuel
Appliances

Safety. Quality. Efficiency.

Sigma's 1mm single wall
connecting flue pipe.

SIGMA has been specifically designed as a connecting flue pipe to facilitate connection between a multi-fuel appliance and either an existing brick chimney or a prefabricated twin wall chimney system. SIGMA offers a smooth, aesthetically pleasing joint, without the need for additional Locking Bands or fire cement. The product is available in four imperial diameters covering 127mm, 152mm, 178mm and 203mm. The product range covers lengths, fittings and support components to ensure simplicity of installation.

Product Description

SIGMA is manufactured from corrosion resistant 316L (1.4404 : X2CrNiMo 17-12-2) stainless steel with a material thickness of 1.0mm. All components are fully welded to ensure integrity and stability of the product. The joint is designed to offer the appearance of a smooth continuous pipe, offering a very aesthetically pleasing finish to the product. The aesthetic finish is achieved by slightly reducing the diameter of the male end to allow engagement with the female end. The joint is made by sliding the male end into the female end of the joint. Due to the tight tolerance interference fit and the 50mm of engagement, a strong joint is formed, alleviating the need for any additional Locking Bands or sealant when the product is installed under compression.

Typical Installation

Table A

SIGMA 1.0mm product designations to BS EN 1856-2										
0086-CPD-559419	SIGMA	BS EN 1856-2	T600	N1	D	V2	L50100	G(XX)	NM	
0086-CPD-559419	SIGMA	BS EN 1856-2	T600	N1	D	V2	L50100	G(400)	M	

Standard number	↑
Temperature class	↑
Pressure class	↑
Condense resistance D=dry W=wet	↑
Corrosion class	↑
Material specification Liner grade 316L Liner thickness: 1.0mm	↑
Sootfire resistance G=yes O=no	↑
NM (Not Measured) M (Measured)	↑

(XX) is the distance to combustible material, for NM this is 3 X pipe diameter where the SIGMA product has been externally painted.

Application

SIGMA is designed to be used internally as a multi-fuel connecting flue pipe and must be applied in accordance with National Building Regulations and installation guidelines. The product is designed for use on natural draught and dry systems, where the flue gas temperature will not exceed 600°C. The SIGMA product is not suitable for fully condensing or positive pressure appliances, in these cases Supra Plus should be used.

Support

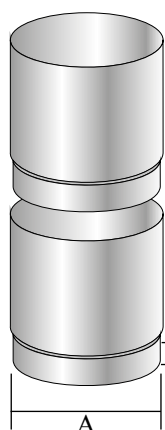
The system **MUST** only be supported by components within the SIGMA system range.

Approvals

The SIGMA system is CE marked to BS EN 1856-2 to the performance designation as detailed within Table A and is suitable for use with solid fuel fired equipment operating under negative pressure conditions.

Quality

SIGMA is manufactured under a Quality Assurance Scheme, certificate no. FM557622, administered by British Standards in accordance with BS EN ISO 9001:2015. SIGMA is also manufactured under the requirements of the Construction Products Regulation FPC system, certification no 0086-CPD-559419 for products manufactured to BS EN 1856-2.

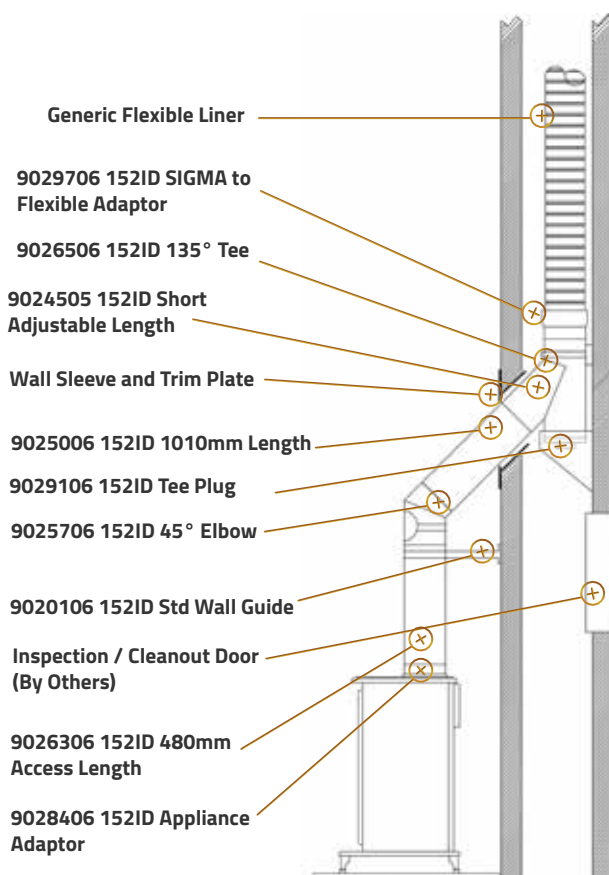


SIGMA is installed with the spigot end facing towards the appliance. Each component is simply pushed together by engaging the spigot end into the uppermost socket. The system is installed from the appliance upwards.

Size	127mm	152mm	178mm	203mm
Dia A (mm)	126.4	151.2	176.5	202.5

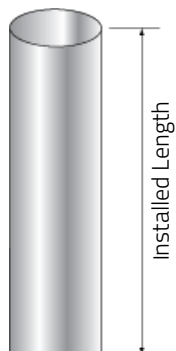
Soot Fire Resistance

The SIGMA product has been tested at a temperature of 1000°C for 30mins as required under BS EN 1856-2 and has a sootfire resistance of G(400) M. Should the product be painted, the declared distance to combustible should be 3 x the diameter of the pipe.



Lengths

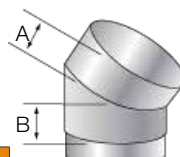
Sigma 1mm



Standard Lengths

Lengths are available in nominal sizes as detailed below. With care the female end can be cut down on site to suit requirements.

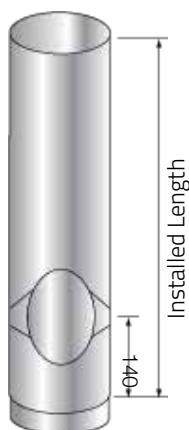
Size	Installed Length			
	1010mm	480mm	300mm	150mm
127mm	9025005	9025105	9025205	9025305
152mm	9025006	9025106	9025206	9025306
178mm	9025007	9025107	9025207	9025307
203mm	9025008	9025108	9025208	9025308



15° Elbow

Used to provide a 15° change of direction or can be used in pairs as an offset.

Size	A (mm)	B (mm)	Code
127mm	100	50	9025405
152mm	100	50	9025406
178mm	100	50	9025407
203mm	100	50	9025408

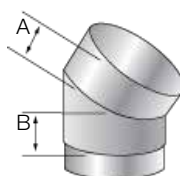


Access Length

As per the Standard Lengths but with an inspection door fitted.

Size	Installed Length		
	1010mm	480mm	303mm
127mm	9026205	9026305	9026405
152mm	9026206	9026306	9026406
178mm	9026207	9026307	9026407
203mm	9026208	9026308	9026408

The dimensional position A of the Inspection Door is 140mm from the installed male end of pipe.



30° Elbow

Used to provide a 30° change of direction or can be used in pairs as an offset.

Size	A (mm)	B (mm)	Code
127mm	100	50	9025505
152mm	100	50	9025506
178mm	100	50	9025507
203mm	100	50	9025508



Adjustable Length

Used where standard lengths are not suitable, can be cut down if required. The Adjustable Length constitutes a slip length designed to slide into an existing standard length. A Clamp Band is then secured around the joint and finished with the provided self tapping screw.

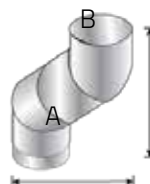
Size	Adjustable Lengths		
	Short	Medium	Long
127mm	9024505	9026605	9024605
152mm	9024506	9026606	9024606
178mm	9024507	9026607	9024607
203mm	9024508	9026608	9024608



Clamp Band

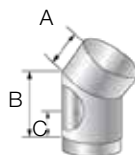
Size	Maximum Adjustment (x)		
	Short	Medium	Long
127mm	288mm	465mm	985mm
152mm	278mm	455mm	975mm
178mm	263mm	440mm	960mm
203mm	253mm	430mm	950mm

The above figures relate to the maximum amount of adjustment taking into account the required length for engagement. The minimum length for all sizes is 50mm



30° Fixed Offset

Size	A (mm)	B (mm)	Code
127mm	177	259	9026805
152mm	202	266	9026806
178mm	228	272	9026807
203mm	253	279	9026808



30° Access Elbow

Used to provide a 30° change of direction and incorporates an inspection door.

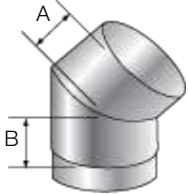
Size	A (mm)	B (mm)	C (mm)	Code
127mm	100	250	95	9025805
152mm	100	250	95	9025806
178mm	100	250	125	9025807
203mm	100	250	125	9025808

Elbows

Sigma 1mm

45° Elbow

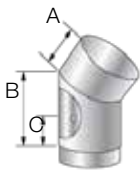
Used to provide a 45° change of direction or can be used in pairs as an offset.



Size	A (mm)	B (mm)	Code
127mm	100	50	9025705
152mm	100	50	9025706
178mm	100	50	9025707
203mm	100	50	9025708

45° Access Elbow

Used to provide a 45° change of direction and incorporates an inspection door.



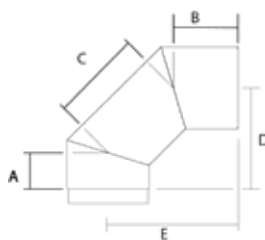
Size	A (mm)	B (mm)	C (mm)	Code
127mm	100	250	95	9025605
152mm	100	250	95	9025606
178mm	100	250	125	9025607

90° Elbow

Used to provide a 90° change of direction.



Size	Code
127mm	9025905
152mm	9025906
178mm	9025907
203mm	9025908



Size	Dimensions (mm)				
	A	B	C	D	E
127mm	46	86	102	118	158
152mm	51	91	112	130	170
178mm	57	97	125	145	185
203mm	62	102	133	155	195

90° Access Elbow

Used to provide a 90° change of direction and incorporates an inspection door.



Size	Code
127mm	9026005
152mm	9026006
178mm	9026007
203mm	9026008

Aperture Size

127ID - 152ID : 90mm X 135mm

178ID - 203ID : 120mm X 150mm

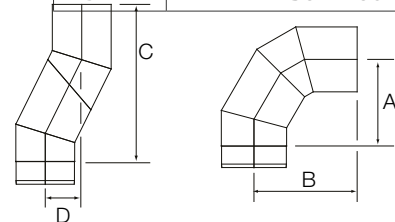
All other dimensions as standard 90° Elbow.

0° - 90° Adjustable Elbow

A fully adjustable elbow covering an angle from 0 to 90° for where flexibility of angle and offset are required.



Size	Code
127mm	9021105
152mm	9021106



Size	A	B	C	D
127mm	130	175	245	70
152mm	145	185	255	85

Offset Dimensions

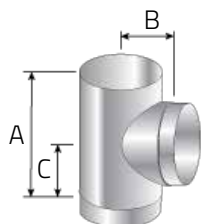
Angle	Elbow / Elbow	
	A	B
15°	295	39
30°	280	75
45°	256	106



Angle	Elbow / Length Offset Combination							
	150mm		300mm		480mm		1010mm	
	A	B	A	B	A	B	A	B
15°	440	78	585	116	759	162	1270	300
30°	410	150	540	225	696	315	1150	580
45°	362	212	468	318	595	445	970	820

Tees & Tee Components

Sigma 1mm



90° Equal Tee

Used to provide a 90° change of direction. Also used as an inspection / cleaning component or at the base of a vertical chimney.

Size	Dimensions (mm)			Code
	A	B	C	
127mm	278	140	114	9023005
152mm	302	152	126	9023006
178mm	328	165	139	9023007
203mm	352	178	151	9023008



Tee Cap

Used to close off the branch or base of a Tee. Tee Plug has handle fitted.

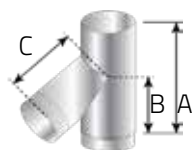
Size	Code
127mm	9029105
152mm	9029106
178mm	9029107
203mm	9029108



Condensate Drain

Used for the removal of condensation and rain water at the base of a vertical chimney or at the outlet of the appliance.

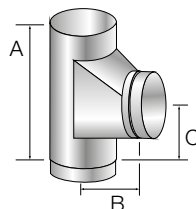
Size	Code
127mm	9026905
152mm	9026906
178mm	9026907
203mm	9026908



135° Equal Tee

Used to provide a 45° change of direction. Also used as an inspection / cleaning component at the base of a vertical chimney. Can be used with a Tee Cap or Condensate Drain (ordered separately).

Size	A	B	C	Code
127mm	325	191	214	5026505
152mm	360	221	271	5026506
178mm	395	252	302	5026507
203mm	430	283	333	5026508



135 Booted Tee

Used to connect to a rear outlet and to allow easy sweeping through the appliance. Can be used with a Tee Cap or Condensate Drain (ordered separately).

Size	Dimensions (mm)			Code
	A	B	C	
127mm	325	170	75	5023105
152mm	360	195	87	5023106
178mm	395	220	100	5023107
203mm	430	245	113	5023108



Wall Guide

Used to laterally brace the connecting flue. This component can be cut as required to provide a clearance of between 50mm and 400mm between the outer flue and fixing surface.

Size	Code
127mm	9020305
152mm	9020306
178mm	9020307
203mm	9020308

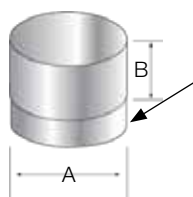
Adaptors

Sigma 1mm

Appliance Adaptor

Used to connect to an appliance outlet where the spigot diameter is smaller than the pipe size.

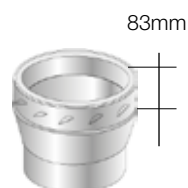
Tail: 50mm Long



Size	A (mm)	B (mm)	Code
127mm	123	60	9028405
152mm	148	60	9028406
178mm	173	60	9028407
203mm	198	60	9028408

Sigma to Nova® Adaptor

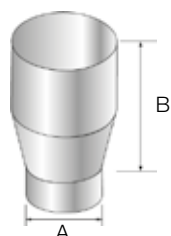
Used to connect the Sigma connecting flue pipe to a Nova® twin wall chimney system. Tapered design for smooth transition from single wall to twin wall.



Size	Code
127mm	9029505
152mm	9029506
178mm	9029507
203mm	9029508

Increaser Adaptor

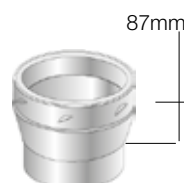
Used to increase the appliance outlet spigot by one diameter to the SIGMA range.



Size	A (mm)	B (mm)	Code
127mm	126	112	9029405
152mm	151	112	9029406
178mm	177	112	9029407

Sigma to Sflue Adaptor

Used to connect the Sigma connecting flue pipe to an Sflue twin wall chimney system. Tapered design for smooth transition from single wall to twin wall.



Size	Code
127mm	9029605
152mm	9029606
178mm	9029607
203mm	9029608

Sigma to Flex Adaptor

Use to connect from SIGMA single wall to a generic flexible flue liner.



Size	A (mm)	B (mm)	Code
127mm	187	110	9029705
152mm	187	110	9029706
178mm	187	110	9029707
203mm	187	110	9029708

Top Hat Adaptor

To facilitate the joining of the connecting flue to the flexible flue liner. Allows the connecting flue below to have slide adjustment without the need of a telescopic length.



Size	Dimensions (mm)			Code
	A	B	C	
127mm				
152mm				
178mm				
203mm				

Eccentric Increaser (127-152)

A tapered eccentric increasing adaptor offering a slight (12mm) offset between the two sizes.

Size	Dimensions (mm)		Code
	A	B	
127mm	160	15	9020605

Installation Instructions

Sigma

1 General

SIGMA has been specifically design for use as a connecting flue pipe to facilitate connection from the outlet of a multi-fuel appliance to the chimney. Where appropriate, the SIGMA connecting flue product can be used to connect to either a twin wall system chimney product such as Nova® / Sflue or in the case of an existing brick chimney, a multi-fuel flexible liner. In all cases the product must be installed in accordance with Building Regulations Part J and the manufacturers installation instructions. Further guidance should also be sought from BS EN 15287-1: Design, installation and commissioning of chimneys.

2 Diameter Selection

In general, the diameter of the connecting flue pipe should be of the same cross sectional area as the appliance outlet or as recommended by the appliance manufacturer. More detailed guidance can be found under Section 2 Table 2 of the Building Regulations Part J and is summarised below:

Application	Size	
Fireplace with opening up to 500mm X 550mm	200mm	8"
Closed appliances up to 20kW output (Smokeless or Exempt Appliances)	130mm	5"
Closed appliances up to 30kW output burning any fuel	150mm	6"
Closed appliances above 30kW and up to 50kW output burning any fuel	180mm	7"
Pellet burner or boiler which meets the requirement of the Clean Air Act	130mm*	5"*

* This diameter may be reduced to no less than 100mm when permitted by the appliance manufacturer and supported by calculation in accordance with BS EN 13384-1.

3 Connection to the Appliance

The SIGMA product is designed to fit straight into an imperial appliance outlet spigot without the need for an Adaptor. For other sizes, a range of Adaptors are available. Increaser Adaptors are also available where the connecting flue pipe needs to be increased in size. When making the connection, it is advisable to finish the joint between the appliance outlet and the SIGMA product by applying a seal of either fire cement or a suitable high temperature sealant. In all cases a 5mm gap should be maintained to allow for expansion and contraction of the product. Under no circumstances should the connecting flue pipe be mechanically attached to the appliance outlet spigot.

4 Height of Connecting Flue Pipe

To prevent excessive heat losses, the height of the connecting flue pipe should be limited to no more than 2m or 1.5m, if any of the acceptable alternative methods of connection are adopted in accordance with BE EN 15287-1. For top outlet appliances, it is recommended that a vertical run of 600mm should be allowed immediately above the appliance, prior to any change of direction. Excessive losses especially when the appliance is being slumbered can lead to poor draught and condensation / deposits forming in the chimney. This can lead to poor chimney performance, reduced product life and the potential risk of a chimney fire.

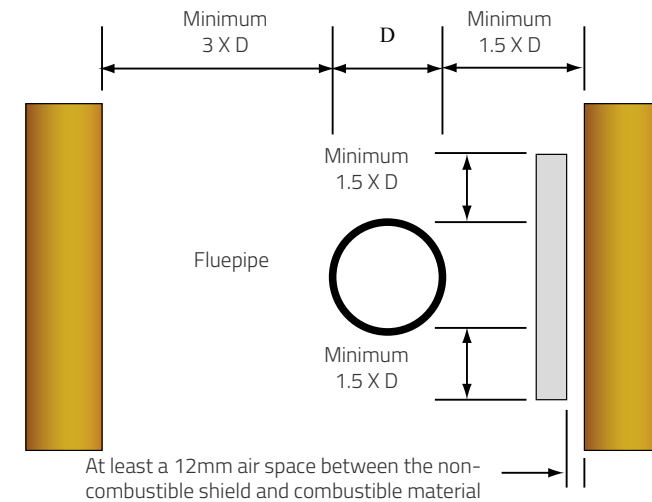
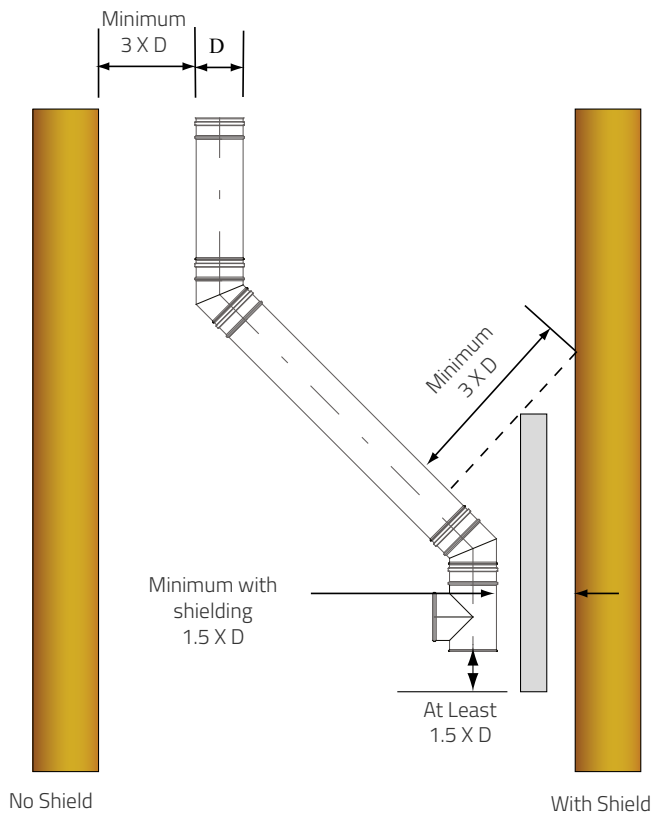
5 Elbows in Connecting Flue Pipes

Top Outlet Appliance:: The connecting flue pipe should have no more than 2 Elbows in its length with an angle no greater than 45° when measured from the vertical. Where possible the connecting flue pipe should rise vertically straight.

Rear Outlet Appliances: Connection to a rear outlet appliance may be made using the 90° Tee. A Tee Cap should be used at the based of the 90° Tee to act as a debris trap, and the joint secured with the supplied Locking Band. The maximum horizontal distance from the outlet spigot to the centre line of the chimney should be no more than 150mm. Under certain conditions and in compliance with the requirements of BS EN 15287-1 Alternative Methods, the horizontal distance may be increased to 450mm.

6 Distance to Combustible Materials

The SIGMA product must be installed at a minimum of 400mm from any combustible materials. Where the product has been painted, this distance must be a minimum of three times the nominal diameter of the connecting flue pipe as detailed in the illustration below. Where possible shielding may be applied to reduce this distance in line with the recommendations given in Part J of the Building Regulations and as detailed below. Where there is close proximity of combustible materials, it is recommended that a twin wall chimney product is used, such as Nova® or Sflue.



Where a shield is used, it must extend beyond the flue pipe by at least 1.5 X D.

7 Cleaning, Access & Inspection

Provision must be made to inspect and clean both the connecting flue pipe and chimney. Some appliances have a removable baffle plate to facilitate sweeping through the appliance. Where this facility is not available, an access component is required. For rear outlet appliance where no removable baffle plate is available, a check is required to determine whether sweeping can be applied through the debris trap in the 90° Tee. If this is not possible, then a further Access Length will be required directly above the 90° Tee. Inspection Lengths and Inspection Elbows are available within the Sigma range.

8 Connection to the Chimney

The SIGMA product must only be used to make the connection between the appliance outlet spigot and the chimney. It should not pass through any roof space, partition wall or floor, except to pass directly into a chimney through either a wall of the chimney or a floor supporting the chimney.

Connecting to Twin Wall System Chimneys:

Connection to a twin wall pre-fabricated chimney system must be made using a suitable adaptor as supplied by the chimney manufacturer and installed in accordance with their installation instructions. A full range of SIGMA to Twin Wall Adaptors are available from SFL to facilitate connection to Nova® and Sflue chimney systems. A twin wall chimney must project a minimum of 425mm below the ceiling before connection to a single wall connecting flue pipe.

Connecting to a Flexible Liner within a masonry chimney:

Connection to a flexible liner can be achieved either from directly under the chimney where the appliance is positioned within a fireplace or through the side of the chimney. This will ultimately depend on site conditions.

9 Structural Considerations

As SIGMA does not rely on Locking Bands to secure the joint, it is critical that the system is installed between two fixed and secured points (Appliance Outlet and Chimney Inlet).

Where an offset is installed, each elbow must be adequately braced using suitable support components to restrict any movement of the joint. This is especially important to stop the potential separation of joints while brushing through the system.

On completion of the installation, each joint within the connecting flue pipe should be physically pulled in tension to ensure that each joint is structurally sound and that there is no potential for movement between the appliance outlet and the chimney inlet.

10 Adjustable Lengths

The Adjustable Length is designed to slide into an existing standard length. As such this component can be used for a number of applications. These include easy appliance removal from the chimney to aid servicing, accommodating expansion between the appliance spigot and chimney inlet, as well as making up non-standard lengths. By their nature, Adjustable Lengths are not load bearing and must be supported from above or at each elbow when used in an offset. Once the desired length is determined, the Clamp Band is secured around the joint to prevent movement. Please note that this is only a frictional clamp and offers no loading capability to the component. With care, Adjustable Lengths can be cut down on site by trimming the male end.

11 Painting of Sigma Components

As standard the Sigma product is supplied in its natural stainless steel 2B finish. A suitable high temperature resistant paint coating can be applied to the product once it is installed. Where a paint coating is applied, the minimum distance to combustible material must revert to three times the nominal diameter of the connecting pipe, and not the declared distance to combustible.

12 Handling

The product is relatively easy to handle, but care should be taken when holding, fitting or assembling any part of the system. Users are advised to take suitable precaution such as wearing personal protection equipment, to avoid injury on

Flexible Liner secured with a Support Plate and Clamp on top the chimney.

Adaptor to Flex.
High temperature sealant can be used to complete the joint.

Register Plate & Clamp

Wall Guide

Access Length

90° / Booted Tee c/w Tee Cap

Flexible Liner secured with a Support Plate and Clamp on top the chimney.

Adaptor to Flex.
High temperature sealant can be used to complete the joint.

Builders opening in chimney to be sleeved and finished with a trim collar.

Support Bracket to take vertical and lateral loading of 135° Tee

Wall Guide

Access Length

30 Minute fire rated

Ventillated Ceiling Support
(2172706)

Sflue Twin Wall Length
1000mm
(2140906)

Short Tapered Adaptor
(2140506)

Wall Guide
(9020306)

Access Length
480mm
(9026306)

A - The twin wall system chimney must project down a minimum of 425mm before connection to a single wall connecting flue pipe.

About Us

Since 1969 we have provided expertise in system design and innovation for commercial, domestic and industrial applications, with uncompromised customer service. Our portfolio of trusted brands are known throughout the world for their engineering excellence.

We are proud of our British built heritage at SFL. All our products are fabricated at our manufacturing centre in Barnstaple, Devon, UK. As well as investment in the latest manufacturing system, we also have an extensive R&D centre ensuring continuous product development and testing to the latest European Standards.

Our Brands

SFL branded products are synonymous with the highest quality – it is this reputation that enables specifiers, contractors and house-holders to use our products with total confidence.

NOVA

SUPRA

EUROPA

SIGMA

S-FLUE

IL

**TUBEX
PLUS**

Get in touch

Head Office & Manufacturing Facility

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Pottington Business Park
Barnstaple
Devon
EX31 1LZ

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Email: info@sflchimneys.com
Web: www.sflchimneys.com



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