



FuranflexComposite Liners

An introduction to our full range of composite chimney and ventilation liners.



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Revolutionary Lining System

Composite Liner systems are suitable for a range of applications (acid and heat resistant), consisting of single air tight tubes made of a flexible composite material, which can traverse chimneys and ductwork with small openings, offsets or other awkward shapes, where traditional stainless steel liners cannot be easily accommodated.

Introduction

Furanflex Black, Furanflex RWV and Ventilflex25 RKV are all glass-fibre reinforced thermosetting resin type liners, which retain the existing cross sectional area of the body through which it passes, even if the object is highly irregular or contorted. Once cured these liners provide a smooth gas-tight inner surface.

Furanflex Black is suitable for gas, oil and condensing appliances, and ranges from 50-1250mm diameter.

Furanflex RWV product is red in colour and has been specially developed to cater for dry applications i.e. Solid Fuel appliances. It's suitable for flue temperatures up to 450°C and is certified soot fire resistant to 1000°C for 30 minutes.

Ventilflex25 RKV is denoted by its green coloured lettering on the outer casing, but is fundamentally red in colour. It's used for lining ventilation ducts

and exhaust systems for operating temperatures up to 450°C, most commonly used in Kitchen systems where it is imperative to avoid leaks, while offering a basic fire resistance. Please note the overall fire resistance is dependent on the material fabric into which these liners are installed.

Our direct employed engineers are fully approved and experienced installers of this revolutionary product.

All lining systems consist of an air tight tube made of a composite material that is flexible in its uncured form, which can traverse chimneys and ductwork with small openings, offsets or other awkward shapes, where traditional stainless steel liners cannot be easily accommodated.



Composite Liner Specification

	Furanflex Black	Furanflex RWV	Ventiflex25 RKV
Fuel	Gas and oil	Wood (and solid)	
Operating temperature in flue gases	T200°C (O) (Tested to 500°C thermo performance test)	T450°C (G) (Shock tested to 1000°C - soot fire)	T450°C (Shock tested to 1000°C)
Cold resistance	-50°C	-50°C	-50°C
Wall thickness	2 - 2.5mm	4 - 5mm	4 - 5mm
Diameter (optional within this range)	50 - 1250mm	100 - 850mm	100 - 850mm+
Length (Optional) (Min. and max. length installed so far)	3 - 81m Longer lengths available on special order	3 - 80m Longer lengths available on special order	3 - 80m Longer lengths available on special order
Operating conditions	Wet	Dry	Dry
Density	1.5g/cm ³	1.5g/cm ³	1.5g/cm ³
Tensile strength	100 - 150 N/mm ²	70 - 90 N/mm ²	70 - 90 N/mm ²
Thermal conductivity	0.4 W/m K	0.4 W/m K	0.4 W/m K
Coefficient of thermal expansion	2.4 x 10 - 5 m/m K	2.4 x 10 - 5 m/m K	2.4 x 10 - 5 m/m K
Soot fire resistance	No	Yes	Yes
Boiler types	P1	N1	N1
EU Classification	(EN-14471) T200 P1 W2 R1 050 E CE Approved	BS EN 1443 T450 N1 D 3 G (BSRIA)	BS EN 1443 T450 N1 D 3 G (BSRIA)

Liner Composition

The liner systems consists of three layers which take the form of a soft flexible tube folded into a compact form.



The internal layer facilitates installation, it is thin-walled (100-150 microns) plastic hose made of a mixture of thermoplastic components.

The intermediate composite layer is the heat and corrosion resistant structural material of the liner tube. Composite means resin of high solidity reinforced with glass fibres. The solidity of composite materials is determined by the amount, type and direction of the thinner-than-hair reinforcing fibres.

The external layer is a thin fabric woven from synthetic fibre. Its function is to protect the composite layer and to ensure the exact perimeter of the chimney tube is contained and retained during curing. Its other function is to form a homogenous completed product.

How It Works

The liner systems are made of a composite material that is supplied deflated as a flat flexible hose.

The liner is then installed into the chimney or ductwork, typically from above or in some cases below. Particular care in manipulating the liners in their soft state must be taken, especially given the weight can be significant dependent upon the liners size and length. Once in place the tube is inflated with air, utilising a pressure between 0.07bar and 0.3 bar, using blower type fans and cured using steam. The steaming process accelerates a chemical reaction within the resin and once the resin reaches 100°C it is allowed to cool and is resteamed for a short time to allow a 'polish' to form and hence hardens to a material stronger than steel, which is corrosive resistant and has no joints. The steaming process allows the liner to mould itself to the shape of the chimney or existing ductwork.



Installation

On all Furanflex and Ventilflex installations we carry out CCTV surveys of the existing chimney or ductwork to ensure the dimensions, condition and feasibility of the proposed liner installation, this is carried out prior to supplying the liner system and is repeated once the soft liner is installed to ensure correct alignment.

The installation process of FuranFlex is very clean and non intrusive with most installations being completed in one day. Our engineers and installers have been comprehensively trained in Furanflex and Ventilflex installation. We have invested in the specialist machinery necessary, ensuring we can respond quickly whenever urgent installations are required.

We also supply and fit the conventional flue systems to which the Furanflex and Ventilflex easily conjoins, we are able to offer a complete service. This includes initial survey of sites, design by our engineers, including fluid dynamic calculations, 3D drawings all for approval prior to manufacture, Method Statements, Risk Assessments through to installation and pressure testing.





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