

# Technical Data Sheet

## FORCE 4000 FLAME FREE Capsheet

<b>1. Description</b>	Force 4000 Flame Free is a stabilised polyester reinforced, SBS elastomeric modified bitumen waterproofing membrane. The membrane has a self protected mineral finish and a self adhesive under surface. Minimum selvedge width is 8cm.
<b>2. Use</b>	Capsheet in Force Neo-Bitumen® warm roof, self adhesive, multi-layer bitumen membrane roof waterproofing system. Suitable for use on inaccessible flat roofs and self protected flat roofs with plant. Also on profiled metal decks and decks made from timber and timber derivatives, concrete and cellular concrete roof slabs and non-torchable insulation boards; for new and refurbishment projects.
<b>3. Application Method</b>	<p>Fully bonded, with fully sealed joints, by flame free self adhesive hot air welding techniques, to form a continuous, watertight layer. Force 4000 Flame Free must be laid loose and positioned prior to removal of the protective silicone release film from the underside of roll.</p> <p>Simultaneously unroll the membrane and remove the protective silicone release film exposing the Neo-Bitumen® self adhesive surface and ensure full adhesion to the membrane/prepared surface below, using hot air activation/flame-free tooling as necessary. A heavy metal roller should be used to remove any air bubbles and ensure full bonding is achieved.</p> <p>Lap joints are secured using flame free self adhesive hot air tooling and a 2mm bead of bitumen should be visible along the selvedge.</p> <p>At head laps mineral granules should be heated and removed using flame free hot air tooling techniques ensuring a black to black bond is achieved and a 2mm bead of bitumen is visible along the head lap.</p>
<b>4. Storage</b>	Rolls to be stored upright and away from heat.

<b>Reinforcement (g/m<sup>2</sup>) :</b>	Non-woven polyester reinforced with glass-fibre	180
<b>Binder (g/m<sup>2</sup>) :</b>	SBS elastomer (self adhesive on under surface)	
<b>Surface finish (g/m<sup>2</sup>) :</b>	Mineral chippings, with silicone film on selvedge	
<b>Under surface finish (g/m<sup>2</sup>) :</b>	Peel-off silicone film	

Characteristics		Standards (BS)	Units	Value	Tolerance	
					Min	Max
Dimensions	Length	EN 1848-1	m	8	MLV	
	Width		m	1	MLV	
	Straightness		mm	20mm x 10m	Pass	
Visible defects		EN 1850-1	-	Without defects		
Adhesion of granules		EN 12039	%	30 max.	MDV	
Self adhesion properties		ASTM D 1000	N/10mm	20	-5	
Resistance to tearing (nail shank)	Longitudinal	EN 12310-1	N	190	-30%	
	Cross direction			190		
Shear resistance	Longitudinal	EN 12317-1	N/50mm	850	± 20%	
	Cross direction			600		
Tensile properties: maximum tensile force	Longitudinal	EN 12311-1	N/50mm	900	±20%	
	Cross direction			650		
Tensile properties: elongation	Longitudinal	EN 12311-1	%	40	-15 absolute	
	Cross direction			45		
Shear resistance of joint	Maximum force	EN 12317-1	N/50mm	850	±20%	
				End joint		
Flexibility at low temperature	New product	EN 1109	°C	-25	MLV	
	After ageing to EN 1296	EN 1297 / EN 1296		-15	+15	
Flow resistance at elevated temperature		EN 1110	°C	100	MLV	
Resistance to impact		EN 12691	mm	900	MLV	
Resistance to static loading		EN 12730 (A)	kg	15	MLV	

<b>Dimensional stability</b>	Longitudinal	EN 1107-1 (A)	%	±0.3	MLV
	Cross direction				
<b>Watertightness (A)</b>		EN 1928	kPa	60	MLV
<b>External fire performance</b>		EN 13501-5	Class	F Roof	NPD
<b>Reaction to fire</b>		EN 13501-1	Class	E	Pass

NA=not applicable due to use of product.

NPD=Performance not determined.

MLV=Manufacturer limiting value.

MDV=Manufacturer declared value.

The manufacturer reserves the right to modify, at any time, the characteristics of this product.

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