

# Technical Data Sheet

## FORCE DALLE FLAME FREE

<b>1. Description</b>	Force Dalle Flame Free is a stabilised polyester reinforced, SBS elastomeric modified bitumen waterproofing membrane with anti-root additive. The under surface (peel-off film) and lap joints are self-adhesive. On the upper surface there is a marker line along the selvedge indicating the 100mm lap width.
<b>2. Use</b>	Top layer of Force Dalle Neo-Bitumen® flame free single or multi layer waterproofing system with anti-root additive, for inverted, warm and cold roofs, green roofs and blue roofs.
<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.</p> <p>The Force Dalle flame free membrane 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.</p> <p>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>
<b>4. Storage</b>	Rolls to be stored upright and away from heat.
<b>5. Composition</b>	(Indicative). See below.

Reinforcement (g/m <sup>2</sup> ) :	Stabilised polyester	180
Binder (g/m <sup>2</sup> ) :	SBS elastomer	4,600
Surface finish (g/m <sup>2</sup> ) :	Macro-perforated film + sand	100
Under surface finish (g/m <sup>2</sup> ) :	Peel-off silicone film	40

Characteristics		Standards (BS)	Units	Value	Tolerance		
					Min	Max	
Dimensions	Length	EN 1848-1	m	8	-1%		
	Width		m	1	-1%		
	Straightness		-	Pass			
	Nominal roll weight	EN 1849-1	kg	39			
	Thickness (on finished product)		mm	4	±5%		
Visible defects	New product	EN 1850-1	-	None			
	After ageing to EN 1297		-	NA			
Adhesion of granules		EN 12039	%	NA	-	-	
Resistance to tearing (nail shank)	Longitudinal	EN 12310-1	N	NA	-	-	
	Cross direction			NA	-	-	
Tensile properties: maximum tensile force	Longitudinal	EN 12311-1	N/50mm	700	600	900	
	Cross direction			600	500	750	
Tensile properties: elongation	Longitudinal	EN 12311-1	%	35	25	60	
	Cross direction			35	25	60	
Peel resistance of joint	Maximum force	EN 12316-1	N/50mm	Selvage	Not tested	-	-
				End joint	Not tested	-	-
	Average force			Selvage	Not tested	-	-
				End joint	Not tested	-	-
Shear resistance of joint	Maximum force	EN 12317-1	N/50mm	Selvage	Not tested	-	-
				End joint	Not tested	-	-
Flexibility at low temperature	Surface	EN 1109	°C	NA	≤		
	Under surface			-16	≤		
Flow resistance at elevated temperature	New product	EN 1110	°C	100	≥		
	After ageing to EN 1296			NA	-	-	

<b>Resistance to impact</b>		EN 12691	mm	700	≥
<b>Resistance to static loading</b>		EN 12730 (A)	kg	20	≥
<b>Dimensional stability</b>		EN 1107-1	%	0.5	≤
<b>Form stability under cyclic temperature change</b>		EN 1108	%	NA	
<b>Water vapour transmission properties</b>	New product	EN 1931	-	μ=20000	
	After ageing to EN 1296		-	NA	
<b>Watertightness</b>	New product	EN 1928	-	Pass	<10kPa
	After ageing to EN 1296		-	NA	
<b>Watertightness after stretching at low temperature</b>		EN 13897	%	NA	
<b>Reaction to fire</b>		EN 13501-1	-	NPD	
<b>Resistance to root penetration</b>		EN 13948	-	Pass	

NA=not applicable due to use of product.

NPD=No performance determined.

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

Axter Ltd reserves the right to modify and update this data at any time without prior notice. Only the latest version of this document is valid, available for download at [www.axter.co.uk/downloads](http://www.axter.co.uk/downloads). Once downloaded, documents are uncontrolled. Users should always confirm they are referring to the latest version prior to use. Further assistance is available from Axter Ltd's Technical Support Team, email: [technical@axterltd.co.uk](mailto:technical@axterltd.co.uk), telephone: 01473 935008.

The intended use of this product should be verified with Axter Ltd prior to adoption to ensure its suitability and compliance with specifications, project requirements, industry regulations, legislation, good practice, installation techniques and all other relevant guidance. Axter Ltd accepts no liability for non-compliant use of this product.