

Technical Data Sheet

FORCE DALLE FLAME FREE Top Layer

Description	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.
Use	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.
Application method	<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>

Storage	Rolls to be stored upright and away from heat.
Composition	(indicative)

Reinforcement (g/m²) :	Stabilised polyester	180
Binder (g/m²) :	SBS elastomer	4,600
Surface finish (g/m²) :	Macro-perforated film + sand	100
Under surface finish (g/m²) :	Peel-off silicone film	40

Characteristics		Standard	Units	Value	Tolerance	
					Min	Max
Dimensions	Length	EN 1848-1	m	8	-1%	
	Width		m	1	-1%	
	Straightness		-	Pass		
	Nominal roll weight		kg	39.2		
	Thickness (on finished product)	EN 1849-1	mm	4.00	3.80	4.20
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/50 mm	700	600	
	Cross direction			600	500	
Tensile properties: elongation	Longitudinal	EN 12311-1	%	35	25	
	Cross direction			35	25	
Peel resistance of joint	Maximum force	EN 12316-1	N/50mm	Selvage	NA	
				End joint	NA	
	Average force			Selvage	NA	
				End joint	NA	
Shear resistance of joint	Maximum force	EN 12317-1	N/50mm	Selvage	600	500
				End joint	600	500

Characteristics		Standard	Units	Value	Tolerance	
					Min	Max
Flexibility at low temperature	Surface	EN 1109	°C	-16	≤	
	Undersurface			-16	≤	
Flow resistance at elevated temperature	Before ageing	EN 1110	°C	100	≥	
	After ageing to EN 1296			NA	-	-
Dimensional stability		EN 1107-1	%	0.3	≤	
Resistance to impact		EN 12691	mm	2000	≥	
Resistance to static loading		EN 12730 (A)	kg	20	≥	
Form stability under cyclic temperature change		EN 1108	%	NA		
Water vapour transmission	Before ageing	EN 1931	-	μ=20000		
	After ageing to EN 1296		-	NA		
Watertightness	Before ageing	EN 1928	-	Pass	<10 kPa	
	After ageing to EN 1296		-	NA		
Watertightness after stretching at low temperatures		EN 13897	%	NA		
Reaction to fire		EN 13501-1	-	PND		
Resistance to root penetration		EN 13948	-	Pass		
Dangerous substances consult : http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm		-	-	None		

NA=not applicable due to use of product. PND=Performance not determined.

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