

Technical Data Sheet

FORCE DALLE

1. Description	Force Dalle is a 4mm thick stabilised polyester reinforced, SBS elastomeric modified bitumen waterproofing membrane. Both surfaces have a film finish and on the upper surface there is a red marker line along the selvedge indicating the 100mm lap width on this anti-root membrane.
2. Use	Top layer in single or multi layer waterproofing system with anti-root additive for use in inverted, warm and cold flat roofs, green roofs and blue roofs.
3. Application Method	Top layer in single or multi layer waterproofing system with anti-root additive for use in inverted, warm and cold flat roofs, green roofs and blue roofs.
4. Storage	Rolls to be stored upright and away from heat.
5. Composition	(Indicative). See below.

Reinforcement (g/m²)	Stabilised polyester	180
Binder (g/m²)	SBS elastomer	5,000
Surface finish (g/m²)	Thermofusible film	10
Under surface finish (g/m²)	Thermofusible film	10

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	42			
	Thickness (on finished product)		mm	4	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/50mm	750	600		
	Cross direction			750	530		
Tensile properties: elongation	Longitudinal	EN 12311-1	%	50	25	60	
	Cross direction			50	30	60	
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	750	-	-
				End joint	750	-	-
Flexibility at low temperature	Surface	EN 1109	°C	NA	≤		
	Under surface			-15	≤		
Flow resistance at elevated temperature	New product	EN 1110	°C	100	≥		
	After ageing to EN 1296			NA	-	-	
Resistance to impact		EN 12691	mm	700	≥		
Resistance to static loading		EN 12730 (A)	kg	20	≥		
Dimensional stability		EN 1107-1	%	0.5	≤		
Form stability under cyclic temperature change		EN 1108	%	NA			

Water vapour transmission properties	New product	EN 1931	-	μ=20000	
	After ageing to EN 1296		-	NA	
Watertightness	New product	EN 1928	-	Pass	<10kPa
	After ageing to EN 1296		-	NA	
Watertightness after stretching at low temperature		EN 13897	%	NA	
Reaction to fire		EN 13501-1	-	NPD	
Resistance to root penetration		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.

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