

Technical Data Sheet

FORCE LINE 4.5

Description	FORCE LINE 4.5 is a polyester reinforced elastomeric (SBS) modified bitumen membrane. Its surface is finished with coloured mineral chippings. The minimum selvedge width is 6cm.
Use	Capsheet in a single or multi-layer roof waterproofing system.
Application method	Fully bonded, with fully sealed joints, using torch-on technique to form continuous layer.
Storage	Rolls to be stored upright and away from heat.
Composition	(indicative)

Reinforcement (g/m²) :	Stabilised polyester	180
Binder (g/m²) :	Elastomer	3900
Surface finish (g/m²) :	Mineral slates	1000
Under surface finish (g/m²) :	Thermofusible film	10

Characteristics		Standard	Units	Value	Tolerance		
					Min	Max	
Dimensions	Length	EN 1848-1	m	8	-0%		
	Width		m	1	-1%		
	Straightness		-	Pass			
	Nominal roll weight		kg	44.2			
	Thickness (selvedge)	EN 1849-1	mm	4.10	3.9	4.3	
Visible defects	New product	EN 1850-1	-	None			
	After ageing to EN 1297		-	NA			
Adhesion of granules		EN 12039	%	15	0	30	
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	690	400	850	
	Cross direction			540	400	700	
Tensile properties: elongation	Longitudinal	EN 12311-1	%	40	30	50	
	Cross direction			50	40	60	
Peel resistance of joint	Maximum force	EN 12316-1	N/50mm	Selvedge	NA	-	-
				End joint	NA	-	-
	Average force			Selvedge	NA	-	-
				End joint	NA	-	-
Shear resistance of joint	Maximum force	EN 12317-1	N/50mm	Selvedge	540	400	700
				End joint	690	400	850
Flexibility at low temperature	Surface	EN 1109	°C	-10	≤		
	Under surface			-10	≤		
Flow resistance at elevated temperature	New product	EN 1110	°C	100	≥		
	After ageing to EN 1296			100	90	110	
Resistance to impact		EN 12691	mm	1250	≥		
Resistance to static loading		EN 12730 (A)	kg	15	≥		
Dimensional stability		EN 1107-1	%	0.3	≤		
Form stability under cyclic temperature change		EN 1108	%	NA			

Characteristics		Standard	Units	Value	Tolerance	
					Min	Max
Water vapour transmission properties	New product	EN 1931	-	μ=20000		
	After ageing to EN 1296		-	NA		
Watertightness	New product	EN 1928	-	Pass	< 10 kPa	
	After ageing to EN 1296		-	NA		
Watertightness after stretching at low temperature		EN 13897	%	NA		
Reaction to fire		EN 13501-1	-	PND		
Resistance to root penetration		EN 13948	-	NA		
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 characteristics of this product.