

# Technical Data Sheet

## FORCE LINE 3VV

<b>Description</b>	FORCE LINE 3VV is a glass-fibre reinforced elastomeric modified bitumen membrane.
<b>Use</b>	Base, intermediate or top layer in a warm roof, multilayer flat roof waterproofing system.
<b>Application method</b>	Fully bonded, with fully sealed joints, by torch-on technique to form continuous layer.
<b>Storage</b>	Rolls to be stored upright and away from heat.
<b>Composition</b>	(indicative)

<b>Reinforcement (g/m<sup>2</sup>) :</b>	Glass-fibre	50
<b>Binder (g/m<sup>2</sup>) :</b>	SBS elastomer	3,440
<b>Surface finish (g/m<sup>2</sup>) :</b>	Sand	300
<b>Under surface finish (g/m<sup>2</sup>) :</b>	Thermofusible film	10

Characteristics		Standards (BS)	Units	Value	Tolerance		
					Min	Max	
Dimensions	Length	EN 1848-1	m	10	-1%		
	Width		m	1	-1%		
	Straightness		-	Pass			
	Nominal roll weight		kg	42.0			
	Thickness (on finished product)	EN 1849-1	mm	3.00	2.85	3.20	
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	450	200	700	
	Cross direction			250	120	380	
Tensile properties: elongation	Longitudinal	EN 12311-1	%	3	2	4	
	Cross direction			3	2	4	
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	NA	-	-
				End joint	NA	-	-
Flexibility at low temperature	Surface	EN 1109	°C	-16	≤		
	Under surface			-16	≤		
Flow resistance at elevated temperature	New product	EN 1110	°C	100	≥		
	After ageing to EN 1296			NA			
Resistance to impact		EN 12691	mm	NA	≤		
Resistance to static loading		EN 12730 (A)	kg	NA	≥		
Dimensional stability		EN 1107-1	%	0.1	≤		
Form stability under cyclic temperature change		EN 1108	%	NA			

Characteristics		Standards (BS)	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: <a href="http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm">http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm</a>		-	-	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.