Technical Data Sheet

EXCEL SOLAR

1.	**Description**	EXCEL SOLAR is a polyester reinforced ALPA® polymer modified bitumen waterproofing membrane. The undersurface is a thermofusible film and the surface is a peel-off silicone film. Minimum selvedge width is 80mm.
2.	**Use**	Top layer in EXCEL SOLAR PV FLEX waterproofing system on new build and refurbishment projects. Axter SOLAR PV FLEX CIGS* flexible photovoltaic modules are adhered in situ to the membrane surface, into the ALPA® binder, when the peel off silicon film has been removed. EXCEL SOLAR is designed for multi or single layer applications. With exceptional ageing and bond strength characteristics, it has been developed to be flexible and durable and is suitable for use on new build and refurbishment Solar PV projects. **CIGS=Copper Indium Gallium Selenide.*
3.	**Application Method**	Installed fully or partially bonded, with fully sealed joints, using flame free hot air welding or torch-on techniques to form a continuous layer.
4.	**Storage**	Rolls to be stored upright and away from heat.
5.	**Composition**	(indicative)

Reinforcement (gm/m²) :	Polyester	180
Binder (gm/m²) :	Alpa FC	4500
Surface finish (gm/m²) :	Peel-off silicone film	40
Under surface finish (gm/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		
	Roll weight			kg	42.1		
	Thickness (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	200	180	300
	Cross direction				250	230	360
Tensile properties: maximum tensile force	Longitudinal		EN 12311-1	N/50 mm	600	500	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	Selvedge	EN 12316-1	N/50mm	NA	-	-
		End joint			NA	-	-
	Average force	Selvedge			NA	-	-
		End joint			NA	-	-
Shear resistance of joint	Maximum force	Selvedge	EN 12317-1	N/50mm	600	500	750
		End joint			600	500	900
Flexibility at low temperature	Surface		EN 1109	°C	-14	≤	
	Under surface				-14	≤	
Flow resistance at elevated temperature	New product		EN 1110	°C	120	≥	
	After ageing to EN 1296				120	110	130
Resistance to impact			EN 12691	mm	1750	≤	
Resistance to static loading			EN 12730	kg	20	≥	
Dimensional stability			EN 1107-1	%	0.3	≤	
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	Sd(m)	μ=20000		
	After ageing to EN 1296		Sd(m)	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	-	NA		
Dangerous substances consult : http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm		-	-	None		

NA=not applicable due to use of product.
NPD=No Performance determined.

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