



深圳市卓宝科技股份有限公司
SHENZHEN JOABOA TECHNOLOGY CO.,LTD.

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JOABOA TECH--Test Report of 1.5mm Thickness PVC Waterproofing Membrane(Unexposed, Homogenous Type)

No.	Test Items			Chinese Standard GB 12952-2011	Actual Measurement	Test Result
1	Tensile Properties	Tensile Strength, MPa	Longitudinal Direction	≥10.0	19.7	Approval
			Horizontal Direction		17.4	Approval
		Elongation at Break, %	Longitudinal Direction	≥200	320	Approval
			Horizontal Direction		318	Approval
2	Dimension Change Rate after Heat Treatment, %		Longitudinal Direction	≤2.0	1.4	Approval
			Horizontal Direction		0	Approval
3	Low Temperature Flexibility			-25℃, no cracking	-25℃, no cracking	Approval
4	Watertightness			0.3MPa, 120min	Impermeable	Approval
5	Anti-impact Property			0.5kg • m	Impermeable	Approval
6	Peel Strength of Overlapping Parts, N/mm			≥4.0 or membranes are damaged	5.4	Approval
7	Right-angled Tearing Strength, N/mm		Longitudinal Direction	≥50	71	Approval
			Horizontal Direction		62	Approval
8	Water Absorption(70℃, 168h), %		After Immersed in Water	≤4.0	1.8	Approval
			Get Dry	≥-0.40	1.66	Approval



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9	Chemical Resistance (Salt Treatment)	Visual Test		No bubbling, cracks, delamination, bonding and holes	No bubbling, cracks, delamination, bonding and holes	Approval
		Retention Rate of Tensile Strength, %	Longitudinal Direction	≥ 85	101	Approval
			Horizontal Direction		100	Approval
		Retention Rate of Elongation, %	Longitudinal Direction	≥ 80	102	Approval
			Horizontal Direction		103	Approval
		Low Temperature Flexibility		-20°C, no cracking	-20°C, no cracking	Approval
10	Chemical Resistance (Alkali Treatment)	Visual Test		No bubbling, cracks, delamination, bonding and holes	No bubbling, cracks, delamination, bonding and holes	Approval
		Retention Rate of Tensile Strength, %	Longitudinal Direction	≥ 85	102	Approval
			Horizontal Direction		100	Approval
		Retention Rate of Elongation, %	Longitudinal Direction	≥ 80	95	Approval
			Horizontal Direction		93	Approval
		Low Temperature Flexibility		-20°C, no cracking	-20°C, no cracking	Approval
11	Chemical Resistance (Acid Treatment)	Visual Test		No bubbling, cracks, delamination, bonding and holes	No bubbling, cracks, delamination, bonding and holes	Approval
		Retention Rate of Tensile Strength, %	Longitudinal Direction	≥ 85	101	Approval
			Horizontal Direction		102	Approval
		Retention Rate of Elongation, %	Longitudinal Direction	≥ 80	94	Approval
			Horizontal Direction		94	
		Low Temperature Flexibility		-20°C, no cracking	-20°C, no cracking	Approval



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		Low Temperature Flexibility		-20°C, no cracking	-20°C, no cracking	Approval
12	Thermal Aging Treatment (80°C, 672h)	Visual Test		No bubbling, cracks, delamination, bonding and holes	No bubbling, cracks, delamination, bonding and holes	Approval
		Retention Rate of Tensile Strength, %	Longitudinal Direction	≥85	98	Approval
			Horizontal Direction		99	Approval
		Retention Rate of Elongation, %	Longitudinal Direction	≥80	92	Approval
			Horizontal Direction		92	Approval
		Low Temperature Flexibility		-20°C, no cracking	-20°C, no cracking	Approval