ASTM Stds Comparison - Physical Properties, Roof Coatings, from RCMA

		Section 118 from California Energy Commission Title 24	Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course	Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane With Integral Wearing Surface	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing	Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing	Standard Specification for Asphalt Roof Cement, Asbestos-Free	Standard Specificiation for Liquid Applied Coating Used in Roofing	Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethan Foam Roofing	Standard Specification for Aluminum-Pigmented Asphalt Roof Coatings, Nonfibered, Asbestos Fibered and Fibered without Asbestos	Standard Specification for Aluminum-Pigmented Emulsified Asphalt Used in Protectibe Coating for Roofing
	Method	Table 118-C	ASTM C836	ASTM C957	ASTM D1227*	ASTM D3468*	ASTM D4586	ASTM D6083	ASTM D6694	ASTM D2824	ASTM D6848
Tensile											
Max Stress at 23°C	D2370	100 psi, min.						200 psi, min.			
Max Stress at -18°C	D2370	200 psi, min.									
Tensile retention after aging (Carbon Arc)	C957			80%, min.							
Tensile Strength at 23°C	D412					700 / 1600 psi, min.			150 psi		
Tensile Strength at -18°C	D412								150 psi		
Tear Resistance	D624							21.0 kN/m, min.	3.5 kN/m, min.		
Elongation											
Break at 23°C	D2370	200%, min.						100%, min.			
Break at -18°C	D2370	60%, min.									
Break after 1000 hours Aging (Xenon Arc) at 23°C	D2370	100%, min.						100%, min.			
Break after 1000 hours Aging (Xenon Arc) at -18°C	D2370	40%, min.									
Low Temperature Crack Bridging	C1305		No Cracking								
Extensibility After Heat Aging	C1522		6.4 mm, min. - No Cracking	No Cracking							
Recovery from elongation				90%, min.							
Elongation retention after aging (Carbon Arc)	C957			90%, min.							
Flexibility at 0°C	D2939				No cracking or flacking						
Elongation at 23°C	D412					350 / 450 %, min.			100%, min.		
Elongation at -18°C	D412					120%, min.			100%, min.		
Elongation after aging (oven)	D412					100 / 200 %, min.					
Permanent Set at Break	D412					50%, max					
Elongation after 1000 hours aging (QUV) at 23°C	D412								100%, min.		
Elongation after 1000 hours aging (QUV) at -18°C	D412								100%, min.		
Behavior at 60°C	D6511						No blistering, sagging or slipping				
Pliability at 0°C							No cracking or separation from metal				
Low Temperature Flexibility after aging 1000 hrs. (Xenon Arc)	D522							-26°C, pass	-26°C, pass		
Permeance/Permeability											
Permeance	D1653	50 Perms, max.						50 Perms, max.	2.5 US Perms, min.		
Water Vapor Permeability	E96					0.010 perm-inches, max.					
Aging											
1000 hours Aging (Xenon Arc)	D4798	No Cracking or checking						No Cracking or checking			
Ozone Resistance	D1149					No cracks under 10X magnification					
5000 hours Aging (QUV)									No Cracking or checking		
Adhesion Testing											
Adhesion in Peel After Water Immersion	C794		175 N/m, min.	875 N/m on concrete and 525 N/m on plywood, min.				350 N/m, min.	350 N/m to SPF, min.		
Adhesion	D429					1.8 / 3.5 kN/m, min.					
Optical Test for Adhesion in Peel	C836		No Seperation at Interface								

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Chemical/Exposure Resistance											
Chemical Resistance	C957			Tensile Retention 70% in water, 70% in ethylene glyco, 45% in mineral spirits, min.							
Water Absorption/Swelling	D471					4.0%, max.		20%, max.			
Fungi Resistance	G21							Zero Rating			
Resistance to Water	D2939										No blistering or reemulsification
Solids/Weight per Gallon/Composition											
Weight Loss	C1250		20%, max.	40%, max.							
Weight per Gallon	D2939				8.2 - 9.5 lb						8.4 - 10.0
Weight per Litre	D2939				980 - 1140 g						1008 - 1200
Residue by Evaporation	D2939				40 - 60 %						25%, min.
Solids	D1644							60%, min.	As listed by manufacturer		
Ash Content	D2939				nil - 50 %						
Water Content	D2939				nil - 60 %						75%, max.
Solids Volume	D3468					20%, min.					
Volume Solids	D2697							50%, min.	57%, min.		
Moisture	D6511						3.0%, max.			0.3%, max.	
Nonvolatile Matter	D6511						70%, min.			40%, max.	
Mineral and/or other stabilizers	D6511						15 - 40 %				
Asphalt	D6511						35 - 65 %				
Uniformity	D4586						As described			As described	As described
Workability	D4586						As described				
Consistency	D2824									As described	As described
Viscosity	D562							85 - 141 KU			50 - 125 KU
Viscosity	D2196							12,000 - 85,000 cPs	3,500 - 50,000 cPs		
Stability	C836		6 months	6 months							
Insoluble in Carbon Disulfide	D6511									40 - 50%, max	
Metallic Aluminum	D6511									9 - 11 %, min.	
Cure Rates											
Firm Set / Drying Time	D2939				24 hr., max.						48 hours, max.
Dry to Touch	D3468					4 - 12 hr., max.					
Dry to Hard	D3468					16 - 24 hr., max.					
Miscellaneous Testing											
Heat Test	D2939				No blistering, sagging or slipping						
Flammability	D2939				No tendency to flash or ignite						
Hardness, Type OO	D2240		50								
Film Thickness (vertical surface)	C836		1.5 mm, min.								
Reflectance	D6511									50%, min.	50%, min.
Reflectance post Aged 1000 hours (Xenon Arc)	D6511									50%, min.	
Reflectance post Aged 500 hours (Xenon Arc)	D6511										90% retained
	Method	Table 118-C	ASTM C836	ASTM C957	ASTM D1227*	ASTM D3468*	ASTM D4586	ASTM D6083	ASTM D6694	ASTM D2824	ASTM D6848
		Section 118 from California Energy Commission Title 24	Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course	Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane With Integral Wearing Surface	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing	Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing	Standard Specification for Asphalt Roof Cement, Asbestos-Free	Standard Specification for Liquid Applied Coating Used in Roofing	Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethan Foam Roofing	Standard Specification for Aluminum-Pigmented Asphalt Roof Coatings, Nonfibered, Asbestos Fibered and Fibered without Asbestos	Standard Specification for Aluminum-Pigmented Emulsified Asphalt Used in Protectibe Coating for Roofing

*note multiple "types" are defined by this specification, ranges are listed to provide general performance requirments for the products.