

Results of ASTM E1795-12 Testing

Performance Property	Minimum Performance Requirement	Tested in Accordance with Section	Minimum Number of Tests	ASTM Referenced	Result	Pass / Fail Requirement	
Impact Resistance	9 J (80 in-lbf) without cracking to the substrate	10.2	2 panels	D2794	Passes 100 in-lbf with no cracking	Pass	
Adhesion	5A rating	10.3	2 panels; each tested at 3 locations	D3359	<i>Panel 1</i>	<i>Panel 2</i>	Pass
					5A	5A	
					5A	5A	
Dry Abrasion Resistance	Film thickness loss: <20%	10.4	2 panels	D4060	<i>Panel 1</i>	<i>Panel 2</i>	Pass
					12% loss	14% loss	
Water Vapor Transmission	No minimum; report test result	10.5	3 cups	D1653	1.786 perms	N/A	
Water and Chemical Resistance – Spot Test	After 1-hour recovery: no evidence of blistering, cracking, or delamination	10.6/10.6.1	2 tests per reagent	D1308	Ethyl Alcohol: No blistering, cracking, or delamination	Pass	
					Acetic Acid: No blistering, cracking, or delamination		
					Sodium Hydroxide: No blistering, cracking, or delamination		
					Hydrochloric Acid: No blistering, cracking, or delamination		
					Citric Acid: No blistering, cracking, or delamination		
Corn Oil: No blistering, cracking, or delamination							

Results of ASTM E1795-12 Testing, Continued

Performance Property	Minimum Performance Requirement	Tested in Accordance with Section	Minimum Number of Tests	ASTM Referenced	Result	Pass / Fail Requirement	
Water and Chemical Resistance – Spot Test	After 1-hour recovery: no evidence of blistering, cracking, or delamination	10.6/10.6.1	2 tests per reagent	D1308	Phosphoric Acid: No blistering, cracking, or delamination	Pass	
					Trisodium Phosphate: No blistering, cracking, or delamination		
					Distilled Water: No blistering, cracking, or delamination		
	After 24-hour recovery: indistinguishable hardness of the exposed and unexposed surfaces				Ethyl Alcohol: No softening	Pass	
					Acetic Acid: No softening		
					Sodium Hydroxide: No softening		
					Hydrochloric Acid: No softening		
					Citric Acid: No softening		
					Corn Oil: No softening		
					Phosphoric Acid: No softening		
					Trisodium Phosphate: No softening		
					Distilled Water: No softening		
Water and Chemical Resistance – Immersion Test	After 2 hour drying period, adhesion rating: 5A	10.6/10.6.2	2 panels; each tested at 3 locations	D1308	<i>Panel 1</i>	<i>Panel 2</i>	Pass
					5A	5A	
					5A	5A	
					5A	5A	
Volatile Organic Compound (VOC) Content	No minimum; report test result	10.8	N/A	D3960	0.20 lb/gal = 25 g/L	N/A	

Results of ASTM E1795-12 Testing, Continued

Performance Property	Minimum Performance Requirement	Tested in Accordance with Section	Minimum Number of Tests	ASTM Referenced	Result		Pass / Fail Requirement
					Panel 1	Panel 2	
Post Weathering – Chalking	8 rating	10.9	2 panels; each tested at 3 locations	D4214	Panel 1	Panel 2	Pass
					8	8	
					8	8	
Post Weathering – Adhesion	5A rating	10.9	2 panels; each tested at 3 locations	D3359	Panel 1	Panel 2	Pass
					5A	5A	
					5A	5A	
Post Weathering – Flexibility	No cracking or other visual defects	10.9	3 panels	D522	No cracking or other visual defects		Pass
					No cracking or other visual defects		
					No cracking or other visual defects		
Post Weathering – Tensile Properties	<35% change from initial value	10.9	10 specimens	D2370	101.4%	Pass	
Post Aging – Adhesion	After 6-hour recovery: 5A rating	10.10.1	2 panels; each tested at 3 locations	D3359	Panel 1	Panel 2	Pass
					5A	5A	
					5A	5A	
Post Aging – Flexibility	After 6-hour recovery: no cracking or other visual defects	10.10.1	3 panels	D522	No cracking or other visual defects		Pass
					No cracking or other visual defects		
					No cracking or other visual defects		
Post Aging – Tensile Properties	After 6-hour recovery: <35% change from initial value	10.10.1	10 specimens	D2370	109.4%	Pass	

Results of ASTM E1795-12 Testing, Continued

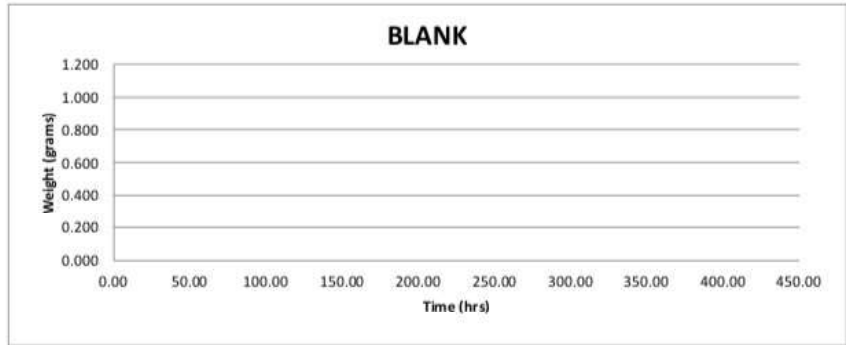
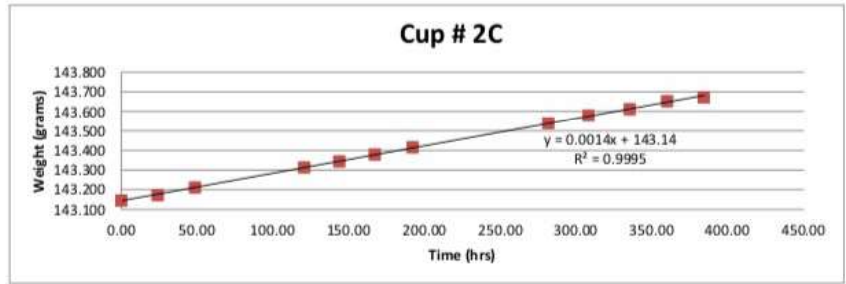
Performance Property	Minimum Performance Requirement	Tested in Accordance with Section	Minimum Number of Tests	ASTM Referenced	Result	Pass / Fail Requirement	
Scrub Resistance	No erosion of the encapsulant to the substrate after 1,200 cycles	10.11	2 panels	D2486	No erosion of encapsulant at 1,200 cycles	Pass	
					No erosion of encapsulant at 1,200 cycles		
Mildew Resistance	Mildew resistance rating: 8	10.12	3 panels	D3273/D3274	10	Pass	
					10		
					10		
Paintability	Adhesion rating: 5A	10.13.1	2 panels; each tested at 3 locations	D3359	<i>Panel 1</i>	<i>Panel 2</i>	Pass
					5A	5A	
					5A	5A	
					5A	5A	
Repairability	Adhesion rating: 5A	10.13.2	2 panels; each tested at 3 locations	D3359	<i>Panel 1</i>	<i>Panel 2</i>	Pass
					5A	5A	
					5A	5A	
					5A	5A	
Flexibility	No cracking or other visual defects	10.14	3 panels	D522	No cracking or other visual defects	Pass	
					No cracking or other visual defects		
					No cracking or other visual defects		
Tensile Properties	No minimum; report test result	10.15	10 specimens	D2370	109.2%	N/A	

Permeability (g-cm/day-m ² -mm Hg)	3.8E-02	4.4E-02	4.6E-02	
Permeability (g/Pa-s-m)	3.3E-11	3.9E-11	4.0E-11	
WVT (grains/h-ft ²)	0.650	0.763	0.805	
WVP (perm)	1.536	1.801	1.902	
Permeability (perm inch)	2.2E-02	2.7E-02	2.7E-02	
Permeability (perm mil)	22.46	26.56	27.34	

RESULTS

METRIC AVERAGES:	
WVT(g/h-m ²)	0.5
WVT(g/day-m ²)	12
WVP (g/hr-m ² -mm Hg)	4.8E-02
WVP (metric perm)	1.2
WVP (g/Pa-s-m ²)	1.0E-07
Permeability (g-cm/hr-m ² -mm Hg)	1.8E-03
Permeability (g-cm/day-m ² -mm Hg)	4.3E-02
Permeability (g/Pa-s-m)	3.7E-11

ENGLISH AVERAGES:	
WVT(grains/h-ft ²)	0.7
WVP (perm)	1.7
Permeability (perm inch)	2.5E-02
Permeability (perm mil)	25



Analyst MAS

date 5/15/2018

QC Review by VDS

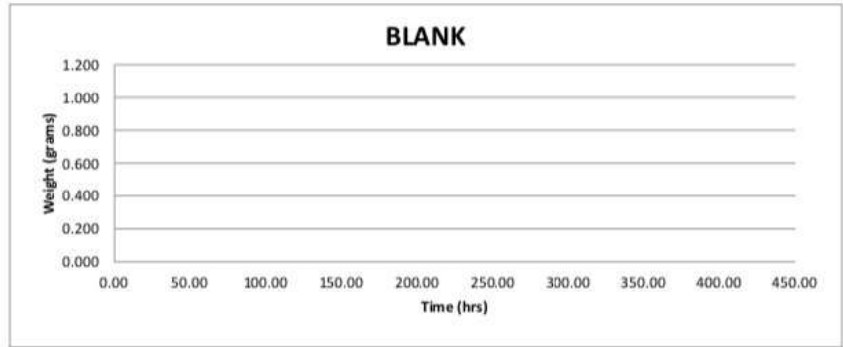
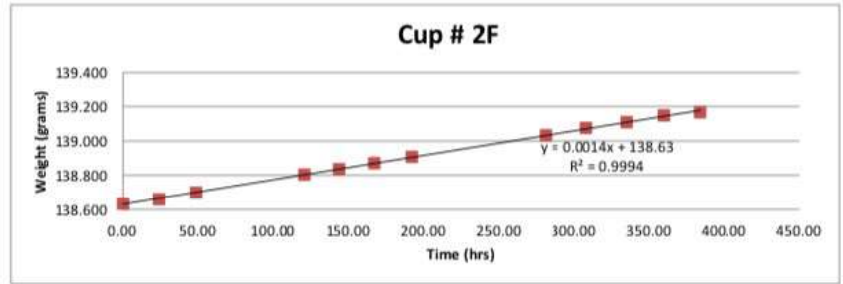
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Permeability (g-cm/hr-m ² -mm Hg)	1.9E-03	1.7E-03	2.1E-03	
Permeability (g-cm/day-m ² -mm Hg)	4.5E-02	4.1E-02	5.1E-02	
Permeability (g/Pa-s-m)	3.9E-11	3.6E-11	4.4E-11	
WVT (grains/h-ft ²)	0.807	0.694	0.819	
WVP (perm)	1.905	1.639	1.934	
Permeability (perm inch)	2.7E-02	2.5E-02	3.0E-02	
Permeability (perm mil)	26.91	24.59	30.45	

RESULTS

METRIC AVERAGES:	
WVT(g/h-m ²)	0.5
WVT(g/day-m ²)	13
WVP (g/hr-m ² -mm Hg)	5.0E-02
WVP (metric perm)	1.2
WVP (g/Pa-s-m ²)	1.0E-07
Permeability (g-cm/hr-m ² -mm Hg)	1.9E-03
Permeability (g-cm/day-m ² -mm Hg)	4.6E-02
Permeability (g/Pa-s-m)	4.0E-11

ENGLISH AVERAGES:	
WVT(grains/h-ft ²)	0.8
WVP (perm)	1.8
Permeability (perm inch)	2.7E-02
Permeability (perm mil)	27



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