

Vandal-resistance of Interpretive Panel Materials

Independently Tested by Schmeckle Reserve, November 14, 2007

	High Pressure Laminate: Regular finish			High Pressure Laminate: iZone ICE Finish			Fiberglass Embedment			Porcelain Enamel			Color-Embed Anodized Aluminum			Etched Anodized Aluminum			Routed Wood			Laminated Prints		
Surface Graffiti	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F
Pen	4	4	4	5	5	4	4	4	4	3	5	5	5	4	4	5	5	4	4	5	4	2	2	4
Crayons	2	4	4	3	4	4	3	5	4	2	5	5	2	3	4	4	5	4	2	5	4	1	2	4
Lipstick	2	3	5	2	3	5	2	3	5	2	4	5	2	3	5	2	4	5	3	3	5	2	3	5
Permanent Marker	1	2	3.5	1	3	4	1	2	3	1	2	5	1	2	3.5	1	3	3.5	2	2	4	1	2	3.5
Spray Paint	1	2	3.5	1	2	2	1	2	3.5	1	2	3.5	1	2	3	1	2	3	1	2	4	1	2	3
Notes	Lip stick: Wipe Crayons/Pen: Scrub Marker/spray paint: Goo Gone Citrus			Lip stick: Wipe Crayons/Pen/Marker: Scrub Spray paint: Difficult to remove. Mineral spirits			Lip stick: Wipe Crayons/Pen: Scrub Marker: Smooth Max Paint: Goo Gone Citrus			Lip stick/Pen/Crayons/Marker: Wipe Paint: Goo Gone Citrus			Lip stick: Wipe Crayons/Pen: Scrub Marker: Goo Gone Citrus Paint: Smooth Max			Lip stick: Wipe Crayons/Pen: Scrub Marker: Goo Gone Citrus Paint: Smooth Max			Lip stick: Wipe Sanding can fix all other graffiti, but surface may need repainting or finishing			Lip stick: Wipe Crayons/Pen: Scrub Marker/spray paint: Goo Gone Citrus		
Burns	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F
Lighters	2	2	2	4	2	2	3	2	2	5	4.5	4.5	5	5	5	5	5	5	1	1	3	1	1	1
Notes	5 seconds to burn. Scorch and bubble surface.			15 seconds to burn. Scorch and bubble surface.			10 seconds to burn. Scorch and bubble surface.			Soot mark forms, but can easily be wiped off under 20 seconds.			Soot mark forms, but can easily be wiped off over 20 seconds.			No mark forms, even after 20 seconds.			Depending on dryness, burns almost instantly.			Burns almost instantly.		

R = Resistance. How resistant is the material to being marked, disfigured, burned, or broken? 5 (most resistant) to 1 (least resistant)
 U = Usability. Can the sign still communicate its message with this type of vandalism? 5 (still communicates well) to 1 (doesn't communicate)
 F = Fixable. How easy is it to fix the sign with cleaning or restoration agents? 5 (easy to fix-cleans quickly) to 1 (impossible to fix-needs replacement)
 [D] = Durable. How durable is the sign after it is broken? 5 (most durable, will resist the elements) to 1 (least durable, will deteriorate quickly)

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Disfigurement	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F	R	U	F
Sandpaper	4	5	5	5	5	5	3	4	5	3	3	1	4	5	2	5	5	5	3	3	4	3	3	1
Keys	4	4	5	4.5	5	5	4	4	5	5	5	5	5	5	5	5	5	5	3	3	4	4	4	1
Razor Blades	3	3	2	4.5	4	2	3	4	2	5	5	1	4	4	2	3	3	1	2	3	4	3	3	1
Rock/Brick	3	3	1	4	5	2	3	2.5	1	4	3	1	3	4	1	3	4	1	2	4	3	2	2	1
Hammer	4.5	5	3	3	4	2	4	3	1	3	3	1	3	5	2	4	4	2	3	4	3	3	4	1
Notes	Sandpaper/ keys: Wax out Rock: Small dents Hammer: Little effect			Sandpaper/ keys: Wax out Rock: Small dents Hammer: Large dent with cracks			Sandpaper/ keys: Wax out Rock: Shatters at impact point Hammer: Cracks form around impact point			Keys: No effect Rock: Surface chips Hammer: Larger surface chips			Keys: Leave mark but can be wiped off Rock: Dent surface Hammer: Dent surface			Keys: Leave mark but can be wiped off Rock: Chips surface at impact point Hammer: Dents surface			Wood is easily disfigured. Minor cuts can be sanded out. Major gouges can be filled. Repainting and finishing may be necessary.			Weak surface easily disfigured. Rock: Tears at impact point Hammer: Dents		
Breakage	R	U	D	R	U	D	R	U	D	R	U	D	R	U	D	R	U	D	R	U	D	R	U	D
Hand/Foot	3	3	5	3	3	5	3	2	3	5	3	2	3	5	3	5	5	5	4	4	5	2	3	1
Hammer	3	3	5	3	3	5	3	2	3	4	3	2	3	4	3	5	5	5	4	4	5	3	3	1
Rock/Brick	3	3	5	3	3	5	3	2	3	4	3	2	3	4	3	5	5	5	4	4	5	2	3	1
Firearms	2	4	5	2	4	5	2	2	3	3	2	2	3	4	5	3	2	5	4	5	5	2	4	1
Notes	Resistance depends on panel thickness. Surface still intact after breakage. No further deterioration. Firearms: Clean holes through surface. Crumbles on back.			Surface still intact after breakage. No further deterioration. Firearms: Clean holes through surface. Crumbles on back.			Surface shatters around break point. Firearms: Shatters area around penetration.			Breakage chips surface and material begins to rust on inside. Deteriorates over time. Firearms: Does not penetrate but chips surface			When material is bent, breaks the anodized layer which can lead to deterioration. Firearms: Does not penetrate, but dents surface.			Thick panels resist breakage well. Firearms: Although not tested, likely would not penetrate, but rather chip surface where bullet/pellet hits.			Resistance depends on panel thickness. Firearms: Gunshot is absorbed by wood. Hardy noticeable from a distance.			Once laminate is broken, paper inside exposed to elements and deteriorates. Firearms: Clean holes through surface and back, but would deteriorate.		

