Insulated Metal Panels PVDF Cool Coatings

NUCOR® BUILDINGS GROUP

METL SPAN a NUCOR company

Metl-Span's insulated metal panels are finished with cool coating systems that feature vivid, fade-resistant color, incredible durability and environmentally friendly cool technology formulated to provide premium energy efficient solar reflectivity, making them the ideal choice for industrial and commercial markets.

Exterior Colors (PVDF)

IR: *Initial Reflectance* ***SRI:*** *Solar Reflectance Index*

Regal White IR .67 SRI 81

Reflective White IR .59 SRI 70

Warm White IR .59 SRI 70

Pearl Gray IR .45 SRI 51

Desert Sand IR .52 SRI 60

Surrey Beige ■ IR .46 SRI 52

Slate Gray IR .35 SRI 38

Royal Blue IR .26 SRI 25

Terra Cotta IR .31 SRI 32

Cypress Green IR .26 SRI 25

Dark Bronze IR .27 SRI 27

Charcoal IR .30 SRI 31

Galvalume* IR .77 SRI 72

Igloo White★ INTERIOR COLOR (POLYESTER)

★ When using field applied coatings always order Igloo White Polyester for the exterior coating. * Available on CFR-IMP Panels only. The Galvalume coating process is likely to result in variances in spangle (size, number, and reflection) from coil to coil which may result in noticeable shade variations. Galvalume is also subject to variable weathering and may appear to have different shades due to weathering characteristics. These shade variations are not cause for rejection. ■ Surrey Beige PVDF does not match the Surrey Beige Tuff Cote® color offering. Colors shown closely approximate actual coating colors. All standard PVDF colors have a 35-year finish warranty. The term "TBK" on the Order Document refers to "To Be Selected" from standard PVDF colors as shown on this chart. Please note that PVDF is a slight upcharge over SP.

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Product Specifications

Our environmentally friendly cool technology offers the highest quality materials to help you meet your unique requirements while maximizing the life of your building and saving on energy costs. PVDF is a revolutionary coating system that consists of PVDF resin, acrylic resin and ceramic pigments – giving your panels more vibrant, fade-resistant durability. Its photo-chemical resistance to ultraviolet light helps prevent breakdown from the sun's rays, reducing heat generation and increasing energy-efficient coolness.

Solar Reflectance, Thermal Emittance and Solar Reflectance Index (SRI)

Solar Reflectance
To be considered "cool," products must have a Solar Reflectance of at least .25. Solar Reflectance is the fraction of the total solar energy that is reflected away from a surface.

Thermal Emittance
Thermal Emittance is the measure of a panel's ability to release heat that it has absorbed.

Solar Reflectance Index (SRI)
Put Solar Reflectance and Thermal Emittance together and you get the Solar Reflectance Index (SRI). SRI is calculated by using the values of solar reflectance, thermal emittance and a medium wind coefficient. The higher the SRI value, the lower its surface temperature and consequently, the heat gain into the building. Metal roofs coated with pigmented PVDF resin achieve an SRI of 25-81, depending on the color.

Conventional roof surfaces have low reflectance (0.05 to 0.25) and high thermal emittance (typically over .85). Roof panels with both high reflectance and high emittance can reduce the surface temperature by as much as 30-50% based on color and geographic location, which will result in a reduced heat gain to the building, therefore reducing the energy demand.

WARRANTIES

At NBG, we proudly stand behind every product we make. That's why we offer a 35-year warranty on our PVDF insulated metal panels. It offers protection against:
Fading | Chipping | Peeling

PVDF COOL PANEL COLORS

PVDF Cool Color	Initial Solar Reflectance (IR)	Initial Thermal Emittance	Solar Reflectance Index (SRI)
Regal White	.67	0.87	81
Reflective White	.59	0.87	70
Warm White	.59	0.88	70
Pearl Gray	.45	0.88	51
Desert Sand	.52	0.88	60
Surrey Beige	.46	0.88	52
Slate Gray	.35	0.88	38
Royal Blue	.26	0.87	25
Terra Cotta	.31	0.88	32
Cypress Green	.26	0.87	25
Dark Bronze	.27	0.87	27
Charcoal	.30	0.87	31

PVDF COOL TECHNICAL INFORMATION

PVDF Performance Testing		
Industry Specifications Compliance	AAMA[1] 621-02 Requirements	Voluntary Specification, for High Performance Organic Coatings on Coil Coated Architetural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel
	AAMA 2605-17A Requirements	Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (Coil Coating appendix)
Substrates	Pretreated substrates: Galvalume®, Hot-Dipped Galvanized (HDG) steel and Aluminum.	
Dry Film Thickness	0.2 - 0.3 mil primer / 0.7 - 0.8 mil topcoat	
Specular Gloss 60°	20 - 35	

Physical Testing	Test Methods[2]	Test Result
Falling Sand Abrasion	ASTM D 968	65 ± 10 liters
Film Adhesion	ASTM D 3359	No removal of film under tape in the cross-hatched area (Dry, Wet, Boiling Water)
Surface Burning Characteristics	ASTM E 84	Flame Spread Index: Class A. Smoke Developed Index: Class A
Graffiti Resistance	ASTM D 6578/D 6578M	Meets and exceeds
Humidity Resistance	ASTM D2247 100% RH @ 100°F for 2000 hrs.	No field blisters
Impact Resistance (Direct)	ASTM D 2794	3x metal thickness inch-pounds, no loss of adhesion
Pencil Hardness	ASTM D 3363	HB to 2H
Salt Spray Resistance	ASTM B 117: 1,000 hrs.	Creep from scribe ≤ 1/16" (2mm), no field blisters.
T-Bends	ASTM D 4145[3]	T-3T, no loss of adhesion

South Florida Testing	Test Methods	Test Result
Color	ASTM D 2244	>5Δ Hunter units @ 20 yrs.
Chalk	ASTM D 4214	Rating no less than 8 @ 20 yrs.
Film Integrity	ASTM G7	25 years
Erosion Resistance	ASTM D 662	10% - 15%

[1]American Architectural Manufacturers Association. [2]American Society for Testing and Materials. [3]Fluropon is not designed to bridge cracks in the substrate. Fluropon coatings will generally meet the requirements for most post-painted fabrication processes. However, variations in metal quality, thickness or cleaning/pretreatment applications can lead to diminished flexibility.