

PVDF Coated Hot-Dipped Galvanized Steel Flat Sheet

Product Description

Metal Sales PVDF pre-painted, Galvanized Steel provided in Flat Sheet and Slit Coil is intended for general sheet metal use in building construction. Common uses include field-formed roof panels, wall panels, trims and flashings.

The steel is coated with Zinc by the hot-dip process in accordance with ASTM A 653. The Zinc coating designation is G90 (Z275).

The top coat paint film is PVDF (polyvinylidene fluoride), two-coat, roll-coated system containing 70% Kynar 500® or Hylar 5000® resin. The surface is streak-free and smooth with no blistering or other imperfections.

The back coat paint film is polyester.

Strippable film can provide protection from scratches and abrasion during transportation, forming and installation.

Applications

In addition to roof and wall panels and trim, this material is commonly used in various application such as sign construction and fence applications. It is appropriate for general sheet metal uses.

Fabricate and install roof and wall products in accordance with standards such SMACNA, Metal Sales published details and good roofing practices.

For cutting this material, use shears or nibblers that are sharp and in good working order. Do not use grinders or circular saws as they can damage the paint finish.

Common means of forming this material includes a hand folder, break press and roll-former. Ensure the contact surfaces of this equipment is clean and smooth.

The recommended minimum bend radius is 2T.

Storage

Store these materials indoors, out of the weather. If these materials must be stored outside, they should be high enough off the ground to allow air to circulate underneath and covered with a tarp. One end should be elevated to allow water to run off.

If covered with strippable film, this material should not be stored in direct sunlight, as it will damage the strippable film and make it difficult to remove.

In no case should strippable film remain on this material more than 6 months.

Mechanical Properties

Material Thickness	20 ga, 18 ga
Steel Grade	33 (230)
Min Yield Strength	33 ksi (230 MPa)
Min Tensile Strength	45 ksi (310 MPa)
Min Elongation, in 2"	20% (in 50 mm)

Weight: 20 ga is 1.50 psf
18 ga is 1.96 psf

Material Availability

Standard thicknesses are 20 ga and 18 ga.

Contact local Branch for gauge / color availability.

Flat Sheet

Standard size is 4' x 10'.
Custom lengths and widths are available.
No minimum quantity.
Bundles contain up to 50 sheets per bundle.
Inquire about other sizes.
Strippable film is standard.

Cautions

Always use safety equipment and safe working practices.

Do not transport open bundles. Rebundle before transporting.

Protect this material during fabrication, transportation and installation from abrasion and scratches that can damage its appearance and promote corrosion.

Avoid walking on this material. Foot traffic is a common source of unsightly scratches and damage to the paint finish. If walking on this material is necessary, be sure to wear clean rubber-soled shoes.

Avoid incidental contact of tools with the paint finish as they may cause scratches and dents.

This material is not appropriate for use in corrosive environments such as those that contain saltwater, copper, lead and animal waste.

For roof products, install this material only in applications that maintain adequate slope to allow water to run off. Continuously standing water will damage this product.

Properties of PVDF

SALT SPRAY RESISTANCE **ASTM B 117**

Samples diagonally scored and subjected to 5% neutral salt spray for 1000 hours - no blistering or loss of adhesion more than 1/8" from score line. Samples taped within 1 hour of removal from cabinet.

SPECULAR GLOSS **ASTM D 523**

Standard gloss range is 20 to 35, low gloss range is 8 to 15, low sheen is a maximum of 10 when determined at a gloss-meter angle of 60°.

CHALK RESISTANCE **ASTM D 4214, Method A**

No chalking greater than #8 after 1000 hours of weathering per ASTM D 3361.

WEATHEROMETER TEST **ASTM D 3361**

No checking, blistering or adhesion-loss after 1000 hours of accelerated weathering.

ABRASION RESISTANCE **ASTM D 968**

PVDF will pass a minimum of 65 +/- 5 liters of falling sand per mil of paint thickness.

FILM THICKNESS **ASTM D 1005**

The primer thickness on each side is 0.20 to 0.30 mils.
The top coat is 0.70 to 0.80 mils (0.90 to 1.10 mils total).
The back coat is 0.30 to 0.40 mils (0.50 to 0.70 mils total).

CHEMICAL RESISTANCE **ASTM D 1308**

No significant color change after 24 hours exposure to 10% solutions of hydrochloric and sulfuric acids.

COLOR CHANGE **ASTM D 2244**

Top coat color change does not exceed 5 Hunter units after 1000 hours of weathering per ASTM D 3361.

HUMIDITY RESISTANCE **ASTM D 2247**

No blistering, cracking, peeling, loss of gloss or softening of the finish after 2000 hours exposure to 100% humidity at 100°F +/- 5°F.

DIRECT & REVERSE IMPACT ADHESION **ASTM D 2794**

No visible paint removal with Scotch 610 tape after direct and reverse impact of 3x the metal thickness in inch-pounds using 5/8" steel ball.

CROSS-HATCH ADHESION **ASTM D 3359**

No paint removal with Scotch 610 tape after cross-scoring with eleven horizontal and eleven vertical lines 1/8" apart.

HARDNESS **ASTM D 3363**

The minimum pencil hardness is HB to 2H using Eagle Turquoise pencils.

BEND ADHESION **ASTM D 4145**

No loss of adhesion when taped with Scotch 610 tape and subjected to 0T to 2T, 180° bend test on 0.017", G90 galvanized steel sample.

Properties of PVDF (cont.)

CURE TEST **ASTM D 5402**

PVDF will withstand 100 double rubs of an MEK-soaked cloth before exposing the primer coat.

FLAME SPREAD RATE **ASTM E 84**

PVDF has a flame spread classification of A (Class 1).

PVDF Warranty Summary

Under normal atmospheric conditions, PVDF will not:

- crack, flake, chip or peel for 45 years.
- chalk in excess of #8 rating for 35 years.
- fade in excess of 5 Hunter units for 35 years.

Products exposed to corrosive environments such as those that contain standing water, saltwater, dissimilar metals and animal waste do not have warranty coverage.

See the PVDF warranty for complete details of coverage and exclusions.

Energy Performance

ENERGY STAR®

Practically all stocked colors are listed for steep slope applications. Select colors are listed for low slope applications.

CRRC (Cool Roof Rating Council)

All colors on the 24 ga Color Guide are listed for steep slope applications. Select colors are listed for low slope applications.

LEED v4

MR Credit - Sourcing of Raw Materials
Typically the steel contains 30% recycled content.
Pre-consumer Recycled Content is 7%.
Post-consumer Recycled Content is 23%.

SS Credit - Heat Island Reduction

See the Color Guide for Solar Reflectance Index (SRI).