

Yieh Phui PVDF

Finest Steel at **Yieh Phui**

Yieh Phui
Fluorocarbon (PVDF)
Pre-Painted Steel Sheets



YP-VF-2010E1

ColorZinc VF-20

Pre-Painted Galvanized Steel Sheet

ColorFan® VF-20F

Pre-Painted 5% Al-Zn Coated Steel Sheet

ColorLume® VF-20L

Pre-Painted 55% Al-Zn Coated Steel Sheet

Yieh Phui Fluorocarbon (PVDF) Pre-Painted Steel Sheets

Description

Yieh Phui PVDF (Fluorocarbon) color sheets, including ColorZinc VF-20, ColorFan® VF-20F and ColorLume® VF-20L, all use a 2 coat-2 bake system (2C2B) and Fluorocarbon with over 70% of KYNAR500® or HYLAR5000® as the topcoat. As for the substrate, it can be chosen from hot-dip zinc, 5% Al-Zn alloy and 55% Al-Zn alloy coated steel sheets. In other words, those are the superior pre-painted steel sheets with the same paint coating system but different base metals.

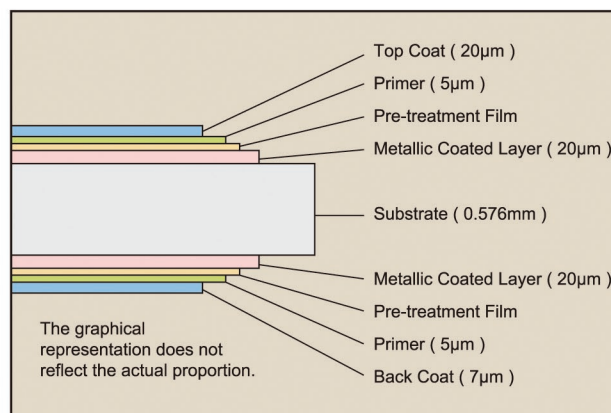
The three categories of **Yieh Phui Fluorocarbon Pre-Painted Steel Sheets** (hereinafter called **Yieh Phui PVDF**) not only provide excellent resistance to weathering, corrosion, chemical corrosion, heat, ultraviolet ray and pollution, but also outstanding formability and excellent color durability.

The three categories of **Yieh Phui PVDF** can resist city grime, acid rain, solarization and frigid sandstorm. Under those severe conditions, the steel sheets are able to preserve its pleasing appearance and completeness. Its life span will perform for a period of 20 years(*) minimum prior to perforation when exposed to normal atmospheric conditions.

Recommended End Uses

Building Industry

The three categories of **Yieh Phui PVDF** are suitable to be used in the severe open-air field, such as roofing and outdoor walls, especially for those high slope roofing structure and huge buildings which require resistance against atmospheric pollution, durability, fridity, heat and strong sunlight. The three above-mentioned categories of **Yieh Phui PVDF** are the ideal selections.



Transportation Industry

For automotive exterior panels and highway guideposts.

Others

For any panel which requires durability. Purifying lab and partition of hospital, electronic factory and laboratory where require resistance against corrosion, mildew, dirt or static.

Replacement for PVDF Pre-Painted Steel

The three categories of **Yieh Phui PVDF** are suitable to be used in the tough environment. However, for coastline areas where severe sea wind carries sands, ColorEmboss® EV-200 or **Yieh Phui High Build PVDF Pre-Painted Steel Sheets** are recommended.

Standard Specifications

The following order specifications for **Yieh Phui PVDF** products differ in the types of substrate used: ColorZinc VF-20, ColorFan® VF-20F and ColorLume® VF-20L. The inspection and testing processes are in accordance with the regulations in this catalogue.

Remarks:

All the dry film thickness shown in this catalogue is "Nominal Dry Film Thickness".



Substrate

- ColorZinc VF-20 uses hot-dip galvanized steel sheets as its substrate. According to ASTM A653M standard, coating mass is Z275 (total both sides, 275g/m² min.)
- ColorFan^R VF-20F uses 5% Al-Zn alloy coated steel sheets as its substrate. According to ASTM A875M standard, coating mass is ZGF 275 (total both sides, 275g/m² min.)
- ColorLume^R VF-20L uses 55% Al-Zn alloy coated steel sheets as its substrate. According to ASTM A792M standard, coating mass is AZM150 (total both sides, 150g/m² min.)

Standard thickness of substrate is 0.576mm. Other thickness is also available subject to customers' needs.

Coating System

Two-sided 2C2B (2 Coat 2 Bake) coating system is used.

Pre-treatment

Based on different production equipment, Yieh Phui uses proper pre-treatment to achieve good adhesion of the paint film. Yieh Phui uses Bonderite made by Chemetall S. A., France or Surfcoat made by Nippon Paint, Japan, to form a precise conversion film on the steel surface.

Top Primer

Polyurethane (PU) is recommended.

Top Coat

High performance Polyvinylidene Fluoride (abbr. PVDF or PVF2, or called Fluorocarbon) with 70% and above of KYNAR500^R or HYLAR5000^R are used, with 20µm nominal dry film thickness.

Top Color & Gloss

For color selection, please refer to Yieh Phui's standard

sample panels or availability subject to inquiry. Generally, top gloss is 25~30 G.U.(Gloss Unit, 60° reflection angle, base on ASTM D 523 standard).

Back Primer

Polyurethane (PU) with high anti-corrosion function is used as back primer, with 5µm nominal dry film thickness.

Back Coat

Epoxy resin with anti-corrosion function or polyester coating with excellent formability are used as back coat, both with 7µm nominal dry film thickness.

Back Color & Gloss

Selections of back coat colors are beige, grayish white and gray. For more information, please refer to Yieh Phui's standard color panels. General back coat gloss is ≤ 25~30 G.U.(Gloss Unit, 60° reflection angle, based on ASTM D 523 standard).

Strippable Film

The strippable film can be stuck on the surface of these three categories of **Yieh Phui PVDF** subject to customers' requirement. The strippable film can decrease the mechanical damages caused during transporting, storing or the forming processes. The film has to be taken off within 1 month if it is installed outdoors, or within 9 months if it is stored/installed indoors, otherwise, it will become harder to peel off in warm conditions.

Performance – Typical Properties

Pencil Hardness – ASTM D 3363

F and harder

The surface hardness of the paint can be assessed using equivalent calibrated wood pencils meeting the following scale of hardness:

6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H.
Softer ← → Harder

Impact Test – ASTM D 2794

A 500g hammer is used to punch a 12.7mm or 15.9mm diameter impact object from 50cm height. The impact material then hits right on the steel sheet underneath. Stick the tape onto the impact point tightly and then peel off rapidly in 180°. The film adheres well without any flakes.

Erichsen Test – ASTM E 643

Forming a depth of 7 mm shape deformation with 12±6 mm/min. velocity, and peel off rapidly in 180° with 3M #600 tape. The film adheres well without any flakes.

Bending Test – ASTM D 4145

Take a sample and bend it in 180° so that the inner diameter is 3 times or 4 times of the sheet thickness (3T or 4T). Then stick the tape tightly and peel off rapidly in 180°. The film adheres well without any flakes.

Abrasion Resistance, Falling Sand – ASTM D 968

Amount of sand drops is over 30 litres. (25µm nominal DFT on top side)

Solvent Resistance – ASTM D 5402

Take a cotton and moisten it with M.E.K. solvent, then press 1kg force and wipe – back and forth more than 100 times (Conventional paint). The substrate won't be revealed.

Accelerated Corrosion and Weathering Test

Salt Spray Test – ASTM B 117 or JIS K5600-7-1

After 1,250 hours, no red rust, blisters (over 6F) and corrosions can be seen in the unscribed area.

Note: 300 hours for un-guaranteed side (back-side)

Weathering Test – QUV ASTM G 154 or JIS K5600-7-8

- After 2,000 hours, no apparent color changes or chalking.

Chemical Resistance – Spot Test ASTM D 1308

- After 30 days of dropping 5% HCl on the surface, there are no apparent changes.
- After 30 days of dropping 5% H₂SO₄ on the surface, there are no apparent changes.
- After 30 days of dropping 5% NaOH on the surface, there are no apparent changes.

Handling and Forming

In order not to damage the surface of the steel, it must be handled cautiously during transporting, forming, processing and packaging. Any improper lubricants used will affect the function of steel sheets and pollute their surface. We strongly recommend not to do so.

Storage

Under any circumstances, do not store steel coils in a humid environment. The capillarity may cause mist or water inhaling into the surface and unable to evaporate normally. This can easily deteriorate steel properties, affect its appearance and shorten its life span. The storage methods foresaid are recommended for sheared steel sheets likewise.

* Note :

1. The life span of **Yieh Phui PVDF** depends on individual atmospheric conditions. For more information, please contact our sales representatives or Customer Technical Service Division.
2. Suggestions for, or descriptions of, the end use or application of products or methods of working contained in this catalogue are for information only and Yieh Phui accepts no liability thereof.
3. Before using products supplied or manufactured by Yieh Phui, the customer should satisfy themselves of their suitability of the products for the proposed end use.



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