

# Metallic PVDF

## Quality and Performance Specification

Metallic PVDF is a premium prepainted system, ideal for high-end roofing and cladding applications with the most demanding aesthetic performance and finish.

### 1.0 Scope

This specification shall apply to hot dip metallic coated sheet steel prefinished with colours of proven durability and suitable for exterior exposure as delivered from the coil coater.

Metallic PVDF is a fluoropolymer 2-coat system comprised of a PVDF colour topcoat on a corrosion inhibiting primer. The paint system is optimal for sidewall (vertical) and roofing (non-vertical) applications in the construction market that are the most demanding for aesthetic performance.

Typical end-uses for Metallic PVDF includes storefronts, building panels, curtain walls and other building features requiring long lasting unique architectural finishes.

The paint system is based on licensed polyvinylidene fluoride (PVDF) Kynar 500® or Hylar 5000® (trade names for equivalent PVDF resins) technology. The coatings are formulated with a minimum of 70% Kynar 500 or Hylar 5000 PVDF resins with proven pigmentation for maximum colour retention, and is available in smooth finishes in a wide range of standard colours.

### 2.0 Base Metal

The base metal furnished prior to painting shall conform to one of the following specifications:

- (a) ASTM A653/A653M Specification for Sheet Steel, Zinc-Coated (Galvanized) by the Hot-Dip Process
- (b) ASTM A792/A792M Specification for Sheet Steel, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process (Galvalume™).

The recommended minimum coating mass designations for use in exterior building applications are stated in ASTM A755/A755M.

### 3.0 Paint Qualification Tests

#### 3.1 Film Thickness

The exposed surface shall have a minimum dry film thickness of 23 microns (0.9 mil). The unexposed (reverse) side shall have a dry film thickness which will vary in accordance with customer requirements.

Test Method: ASTM D5796

#### 3.2 Formability/Adhesion Test

When using a representative sample at 25°C +/-2°C (77°F) and using #610 scotch cellophane tape, the paint system shall show zero loss of adhesion when subjected to a 2T 180° bend test.

Test Method: ASTM D4145

This requirement is not applicable for material ordered to ASTM A653/A792 Grade 80 or ASTM A653M/A792M Grade 550.

#### 3.3 Gloss

The specular gloss shall be 20 +/- 5 gloss units when measured with a 60° Glossmeter. Due to the metallic pigments, only standard gloss may be ordered for Metallic PVDF.

Test Method: ASTM D523

### 3.4 Accelerated Corrosion Tests

#### 3.4.1 Prohesion (Modified Cyclic Salt Spray)

After 500 hours, typical average cut-edge corrosion of production samples shall not exceed 3 mm.

Test Method: ASTM G85, Method A5.

#### 3.4.2 Salt Spray Resistance

After 1000 hours the surface shall show only a few #8 blisters, and less than 3 mm creep from the scribe line.

Test Method: ASTM B117

### 3.5. Humidity Resistance

After 1000 hours of exposure to 100% relative humidity at a temperature of 38°C (100°F) the surface may show only a few scattered blisters no larger than No. 8 per ASTM D714.

Test Method: ASTM D2247

### 4.0 Exterior Exposure (Weathering)

Each proven colour of Metallic PVDF will meet the following weathering standards. Standards are applicable in the absence of aggressive fumes and/or other chemicals not normally encountered in the atmosphere. Weathering standards are limited to installations (residential, commercial, institutional) located in Canada and the continental United States and are reduced for industrial or marine exposure.

#### 4.1 Film Integrity

During the first 40 years on vertical (walls) and non-vertical (roofs) applications, the paint film shall have zero evidence of cracking, flaking or checking to an extent that is apparent in ordinary outdoor visual observations.

#### 4.2 Chalking

Within the first 40 years after application, the degree of chalking shall not exceed rating #8 for vertical and non-vertical applications when measured per ASTM D4214, Method A.

#### 4.3 Colour Change

Within the first 40 years after application, the change in colour shall not be greater than 5 colour units for vertical and non-vertical applications. Colour measurements are to be made per ASTM D2244 and only on clean surfaces after removing surface deposits and chalk as per ASTM D3964.

Colour change shall be measured using an acceptable colour spectrophotometer designed to produce reflectance readings in the Tristimulus Filter System on X, Y and Z based on the CIE values of illuminant C and measured in Hunter L, a and b units.

### 5.0 Product Attributes & Colour Match

Metallic PVDFs have excellent flexibility to withstand roll-forming operations, and are abrasion resistant for transportation, installation and general handling. Use of chrome plated tooling is recommended when processing to prevent metal marking.

Metallic PVDFs may not be recommended for installations where corrosion protection is the principal concern.

Metallic PVDFs will meet the performance requirements of AAMA 621-02.

It is commercially impossible for each lot of prefinished steel to be an identical visual match due to the coil coating process. In addition, the orientation of the metallic pigments during application of the colour coat may result in directional appearance variation. Therefore, this product requires the application of directional chevrons on the reverse side.

Matching issues can be minimized by the following practices:

- Planning and care must be taken during installation to ensure all pieces are consistently positioned with respect to the rolling direction indicated on the interior side (backer).
- To avoid slight colour variation during installation, orders should be placed such that the finished building products are from the same production lot.
- Orders for large projects which could involve more than one production order must be discussed with your ArcelorMittal sales representative.




**Metallic PVDF is available in several standard colours, please refer to the colour card at link below**

[dofasco.arcelormittal.com/media/xcpdgmwz/baycoat-metallic.pdf](https://dofasco.arcelormittal.com/media/xcpdgmwz/baycoat-metallic.pdf)

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