

# PRE-COAT 10000 SERIES

## Quality and Performance Specification



### 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. 10000 Series paint systems are 2-coat systems designed for sidewall and roofing applications in the construction market that are more demanding for aesthetic performance. The paint system is based on licensed polyvinylidene fluoride (PVDF) Kynar 500® or Hylar 5000® (trade names for equivalent PVDF resins) technology.

### 2.0 Base Metal

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

- (a) ASTM A653 / ASTM A653M for Zinc coated steel (galvanized)
- (b) ASTM A792 / ASTM A792M for 55% Aluminum-Zinc alloy coated steel (Galvalume™).

### 3.0 Paint Qualification Tests

#### 3.1 Film Thickness

Paint film thickness shall be measured by analysis of a precisely cut shallow angled crater. The exposed surface shall have a minimum topcoat dry film thickness of 18microns (0.7 mils) and 5microns (0.2 mils) primer. The unexposed (reverse) side shall have a dry film thickness which will vary in accordance with customer requirements.

Test Method: ASTM D5796

#### 3.2 Film Hardness

The hardness of the paint film may be measured by means of Eagle/Berol turquoise T-2375 or equivalent pencils using a flat round head applied at a 45° angle to the paint film. A hardness of HB-2H shall be obtained. Pencil hardness is specified as the first pencil number that will not rupture the paint when tested as described above.

Test Method: ASTM D3363

#### 3.3 Formability/Adhesion Test

When using a representative sample at 25°C +/-2°C (77°F) and using #610 scotch cellophane tape, the paint system will show no loss of adhesion when subjected to a 2T 180° bend test.

Test Method: ASTM D4145

This requirement does not apply to material which is ordered as ASTM A653 or A792 Grade 80 and Grade 550.

#### 3.4 Gloss

The specular gloss shall be 25 +/- 5 gloss units when measured with a 60° Glossmeter. A lower gloss is available upon request. When other than the standard gloss is ordered, the gloss range shall be mutually agreed upon prior to purchase.

Test Method: ASTM D523

#### 3.5. Humidity Resistance

After 1500 hours of exposure to 100% relative humidity at a temperature of 38°C (100°F) the surface may show 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 10000 Series 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 located in Canada and the continental United States.

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### 4.1 Film Integrity

During the first 40 years on vertical (walls) and non-vertical (roofs) applications, the paint film shall have no evidence of cracking, flaking or checking to an extent that is apparent on ordinary outdoor visual observations.

### 4.2 Chalking

Within the first 30 years after application the degree of chalking will not exceed rating #8 for vertical and non-vertical applications when measured per ASTM D4214, Method A.

### 4.3 Colour Change

Within the first 30 years after application the change in colour will not be greater than five 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 per ASTM D3964.

Colour change is measured using any accepted 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 and Applications

10000 Series is a fluoropolymer 2-coat system comprised of a corrosion inhibiting primer and a PVDF colour coat. The colour layer is formulated with a minimum of 70% Kynar 500 or Hylar 5000 PVDF resins with proven pigmentation for maximum colour retention. The key to fluoropolymer performance can be found in its basic chemical foundation; the carbon/fluorine bond is one of the strongest chemical bonds known.

10000 Series therefore provides superior resistance in installations with extended exposure to solar radiation including roofing. 10000 Series is additionally resistant to chalking, colour fade and degradation from environmental stresses caused by chemicals including acid rain. 10000 Series is a premium prepaint product widely used in building design and recommended for demanding applications.

10000 Series is available in smooth finishes in a wide variety of customized colours in addition to standard colours. Due to the matte nature of PVDF resin, 10000 Series is not typically available in bright colours. Environmental dirt will tend to wash-off in rain to maintain colour of your 10000 Series products. For your next architectural building project, 10000 Series colour finishes will provide the best looking and longest lasting performance.

10000 Series paint films also have very good flexibility and will be resistant to cracking and crazing during forming. However precautions should be taken when processing due to an inherent softness of the PVDF resin that may result in metal marking. Use of chrome plated tooling is recommended.

The recommended minimum coating mass designations for use in exterior building applications are as stated in ASTM A755/A755M. 10000 Series also meets the performance requirements of AAMA 621-02.

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