

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 have been designed for sidewall (vertical) applications and roofing (non-vertical) applications in the construction market that are the most demanding for aesthetic performance. The paint system chemistry is a polyvinylidene fluoride (PVDF) based on Kynar 500® or Hylar 5000® resin technology and utilizes ceramic pigmentation. Applications are not recommended for aggressive exposures where corrosion protection is the primary concern.

2.0 Base Metal

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

- (a) Zinc coated (galvanized) sheet steel conforming to the requirements of ASTM A653 or A653M as applicable.
- (b) 55% Aluminum-zinc (Galvalume™) alloy coated steel sheet conforming to the requirements of ASTM A792 or A792M as applicable.

3.0 Paint Qualification Tests

3.1 Film Thickness

The exposed surface shall have a minimum topcoat dry film thickness of 0.7 mils (18 µm) and 0.2 mils (5 µm) primer. The unexposed or reverse side shall have a dry film thickness which will vary in accordance with the customer's requirements.

Test Method: ASTM D1005.

3.2 Film Cure

The baked film shall withstand one hundred (100) double MEK rubs in accordance with ASTM D5402.

3.3 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 minimum hardness of HB shall be obtained. Pencil Hardness is specified as the first pencil number that will not rupture the paint film when tested as described above.

Test Method: ASTM D3363.

3.4 Formability/Adhesion Test

When using a representative sample at 25°C +/- 2° and using #610 Scotch cellophane tape, the paint system will show no loss of adhesion when subjected to a 3T 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 ASTM A653M or A792M Grade 550.

3.5 Gloss

The specular gloss shall be +/- 5 gloss units of the agreed upon specified target when measured with a Gardner 60° Glossmeter.

Test Method: ASTM D523.

4.0 Accelerated Corrosion

4.1 Humidity Resistance

The humidity resistance test shall be conducted at 100% relative humidity at a temperature of 38°C (100°F). After 1000 hours of exposure, the surface may show a few scattered blisters no larger than No. 8 per ASTM D714.

Test Method: ASTM D2247.

5.0 Exterior Exposure (Weathering)

Each proven colour of 10000 Series will meet the following weathering standards (in the absence of aggressive fumes and/or other chemicals not normally encountered in the atmosphere) for applications located in Canada.

5.1 Film Integrity

During the first thirty (30) years of exterior exposure, the paint film shall have no evidence of cracking, flaking, or checking to an extent that is apparent on ordinary outdoor visual observations.

5.2 Chalking

Within the first thirty (30) years after application the degree of chalking will not exceed rating #8 for vertical (walls) and #6 for non-vertical (roofs) applications when measured per ASTM D4214.

5.3 Colour Change

Within the first thirty (30) years after application the change in colour will not be greater than five (5) colour units for vertical (walls) and eight (8) colour units for non-vertical (roofs) 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 on any accepted colourimeter 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.

Product Attributes and Applications

10000 Series is a two-coat (primer and top-coat) fluoropolymer system formulated with a minimum of 70% Kynar 500 or Hylar 5000 (PVDF) base resin. The combined use of high grade ceramic pigments for maximum colour retention and a fluoropolymer resin that resists degradation from UV light irradiation, gives 10000 Series the optimum properties for long-term weathering performance. Therefore, for cladding projects that demand the best in class for aesthetic properties, 10000 Series should be the prepaint system of choice.

10000 Series is offered in a variety of standard colours that represent the most common colours used in the building industry. For your next architectural project, 10000 Series colour finishes should be specified to provide the best looking and longest lasting performance. 10000 Series will provide resistance to dirt pick-up, chalking, colour fade and degradation from environmental stresses caused by normal pollution, acid rain, and UV irradiation. The paint film also has very good flexibility to resist cracking and crazing during forming. However, the paint's inherent soft texture that provides the good flexibility increases the risk of metal marking during roll forming. Added precautions should be taken when processing (use chrome plated tooling) and handling products coated with 10000 Series.

For bold accent and metallic luster appearance finishes, Dofasco offers special Metallic and Elite Series precoat finishes that are available in a limited number of colours. These systems are four-coat (primer, basecoat, colour coat and clear coat) paint products that are also based on fluoropolymer chemistry and provide vivid colours with the same excellent weathering properties as 10000 Series.

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