

1.0 Scope

This specification shall apply to hot dip metallic coated sheet steel prefinished with colours of proven durability suitable for exterior and interior exposure as delivered from ArcelorMittal Dofasco Inc. (not steel embossed). The paint systems have been designed for garage and residential entry door applications whose surfaces are exposed vertically in non-aggressive environments.

Exterior Polyester Series are 2-coat paint systems. The topcoat paint system chemistry consists of a standard exterior polyester resin designed for end-uses that require greater flexibility. The standard backer on the riverside side is compatible for foam adhesion.

Standard finishes for garage and residential entry doors applications are colours that have good weathering characteristics and are recommended for applications that are not intended to be painted immediately after installation. Additional colours can be developed and approved upon request. For black finishes, the Exterior Polyester Series, Granite® Cool Black, shall be specified (See Granite® Cool Black Quality and Performance Specification data sheet at <https://dofasco.arcelormittal.com/what-we-do/markets/construction/publications.aspx>)

This specification does not apply to material which is ordered as customer specified.

2.0 Base Metal

The base metal furnished before painting shall conform to the requirements of ASTM A653 / ASTM A653M for zinc coated steel (galvanized).

Deep Drawing Steel shall be specified for embossed doors and Commercial Steel for flat doors. The steel's mechanical properties have been designed specifically for embossed doors to provide strength and dent resistance while maintaining the shape requirements after stamping.

This specification does not apply to material which is ordered as ASTM A653 Grade 80 and Grade 50.

3.0 Paint Qualification Tests

3.1 Film Thickness

The paint film thickness will vary as required to achieve the final product colour. The exposed surface shall have a minimum dry film thickness of 0.80mil (20.3 micrometers) measured by Bore Analysis.

Reverse side dry film thickness will vary in accordance with customer requirements.

Test Method: ASTM D5796 - 10

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 minimum hardness of F 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

The coating surface shall withstand a reverse impact of 60 inch pounds when applied to 0.021 in hot dip galvanized steel. Following impact there shall be no paint film removal using #610 scotch cellophane tape.

Test Method: ASTM D2794

3.4 Gloss

The specular gloss shall be +/- 5 gloss units of the agreed upon specified target when measured with a Gardner 60° gloss meter. The typical gloss range will be from 20 to 50 gloss units as measured by a 60° gloss meter.

Test Method: ASTM D523

4.0 Exterior Exposure (Weathering)

Each proven colour of Exterior Polyester Series shall meet the following weathering standards in the absence of aggressive fumes and/or other chemicals and/or salt water not normally encountered in rural and urban atmospheres for applications located in Canada and in the continental United States.

The following weathering performance specification does not apply in the case of defects or failures sourced from mechanical damage incurred to the coating during the transportation, storage, processing, embossing or forming operations, installation, or service life of the product.

4.1 Film Integrity

During the first ten (10) years of exterior exposure, the paint film shall have no evidence of cracking, flaking, chipping, peeling or loss of adhesion to an extent that is apparent on ordinary outdoor visual observation.

4.2 Chalking

Within the first ten (10) years after application, the degree of chalking will not exceed rating #6 for vertical applications.

Test Method: ASTM D4214, Method A

4.3 Colour Change

Within the first ten (10) years after application the change in colour will not be greater than seven (7) delta E colour units for vertical applications. Colour measurements are to be made only on clean surfaces after removing surface deposits and chalk per ASTM D3964.

Colour change shall be measured using any accepted colour spectrophotometer designed to produce reflectance readings in the Tristimulus Filter System on X, Y and Z axes based on the CIE values of illuminant C at 2° and measured in Hunter L, a and b units.

Test Method: ASTM D2244

5.0 Job Site Storage, Maintenance and Re-coatability

Avoid contact with wet wood, pooled water or chemical agents. Regular washing of prefinished steel can extend the life and maintain the appearance of the finish. Solvents and abrasive cleaners should not be used.

Sheets or parts made from Exterior Polyester should be kept dry in transit and covered during storage at the job site. Bundles should be stored above ground at a slight angle, to prevent rain water or condensation from ponding between adjacent sheets.

The standard finish paint systems are designed to be suitable for re-coating without extensive surface preparation such as solvent washing or abrasive cleaning. However the surface must be free of dirt, oil or foreign substances and may require washing with a mild detergent or sanding. Post paint systems such as water based acrylics can be used to re-coat any of the standard finishes. For best results, follow the paint manufacturers recommended application procedures.

The specifications and other information contained in this document are provided for information purposes only, and do not substitute a warranty by ArcelorMittal Dofasco or Baycoat, including, without limitation, with respect to the fitness, performance or merchantability of any product described herein. Upon the purchase of any of the products, the buyer shall be solely entitled to the benefit of the warranty contained in the seller's standard conditions of sale.