

The qualities of

POLYDURE®

500

Performance specifications for oil free polyester finishes



AkzoNobel
Tomorrow's Answers Today

Application Characteristics

General	Substrates: Hot-Dipped Galvanized, Galvalume, Galfan and Aluminum. Application: Roll coating of two-coat system. System: AkzoNobel recommended Proprietary Solvent or Waterborne Primer and POLYDURE® 500 topcoat, over properly cleaned and pre-treated substrate.
Surface Appearance	Smooth and free of streaks, blistering and other imperfections.
Film Thickness	Topside finish: Primer (dry) = 0.20 - 0.25 mil; Topcoat (dry) = 0.55 - 0.65 mil for medium and dark colors; 0.60 - 0.70 mil for clean whites and clean light colors. Reverse side finish: Primer (dry) 0.15 - 0.25 mil; Pigmented polyester backer (dry) = 0.35 - 0.45 mil. Total DFT for system = 0.75 - 0.90 mils for dark colors; 0.80 - 0.95 for clean whites and clean light colors. All measurements per ASTM D 1005 or D 5796.
Topside Color	Controlled to the Master Standard by an approved Color Difference Meter or Spectrophotometer, and by visual match under daylight and horizon light of a Macbeth Daylight Booth per ASTM D 1729.

Physical Properties

Specular Gloss	Determined per ASTM D 523 at a glossmeter angle of 60°. Gloss rating per customer nominal specification, ±5% specular reflectance. POLYDURE® 500 systems are 35% ±5%, but can be made available in both higher and lower gloss ranges upon special request.
Hardness	Minimum pencil hardness, using Eagle Turquoise Pencils per ASTM D 3363, is "F".
Cure Test	Cured in baking oven to withstand 100 double rubs of a MEK soaked cloth, per ASTM D 5402, to expose primer.
Cross-Hatch Adhesion	No paint removal with Scotch #610 cellophane tape after cross-scoring with eleven horizontal and eleven vertical lines 1/8" apart, per ASTM D 3359.
Direct and Reverse Impact Adhesion	No visible paint removal with Scotch #610 cellophane tape after direct and reverse impact of 80-inch pounds on 26 gauge galvanized steel, using 5/8" steel ball on a Gardner Impact Tester (not to include Zinc coating failures) per ASTM D 2794.
Bend Adhesion	Per ASTM D 4145-83, no loss of adhesion when taped with Scotch #610 cellophane tape when subjected to a 2T diameter 180° bend test on 0.017" G-90 (grade D) galvanized steel or fabricator's roll-forming operation. (Not to include Zinc failures.) A forming operation using a "Butler Jig" may be substituted for this test to more closely simulate the roll forming operation. Per ASTM D 522, an 1/8" mandrel bend may also be used to evaluate flexibility, with the same results in flexibility and adhesion.

Testing Data

Humidity Resistance	No blistering, cracking, peeling, loss of gloss or softening of the finish after 1000 hours of exposure to 100% humidity at 100° F ± 5° F, per Federal Test Method Standard 141, Method 6201 or ASTM D 2247.
Cleveland Condensing Cabinet Water Immersion Resistance	No blistering or white rust after 240 hours at 140°F, with a 15 - minute dry off period every 6 hours, per ASTM D 4585.
Salt Spray Resistance	Samples immersed in distilled water at 100°F per ASTM D 870 will exhibit no loss of gloss, blistering, cracking, color changing or softening of finish after 500 hours. After 1000 hours, samples will exhibit no loss of gloss, color change, cracking, and no blistering greater than medium #6 over 20% of test area per ASTM D 714. Slight softening of the finish may be observed when first removed from immersion; original hardness will be regained after 24 hours at room temperature.
Chemical Resistance	Samples diagonally scored and subjected to 5% neutral salt spray for 1000 hours, per ASTM B 117, then taped 1 hour after removal from the test cabinet with Scotch #610 cellophane tape, exhibit no blistering and no loss of adhesion greater than 1/8" from score line.
Chemical Resistance	No significant color change after 24 hours exposure to 10% solutions of hydrochloric and sulfuric acids, per ASTM D 1308-87, Procedure 6.2 (spot test).
Kesternich Test	No significant color change after 10 cycles in an SO2 chamber (Kesternich Cabinet or equivalent), per ASTM G-87.
Weatherometer Test	No checking, blistering or adhesion loss of coating system after 2000 hours of accelerated weathering, per ASTM D 822, G 152 and G 153.
Color Change	Finish coat color change not to exceed 7 NBS units per ASTM D 2244 test procedure, after 2000 hour weatherometer test.
Chalking Resistance	Florida exposure (45° South) and EMMAQUA testing, per ASTM D 4141, Procedure C, both confirm satisfactory exposure characteristics of POLYDURE® 500 systems.
Exterior Weathering	No chalking greater than #6 rating per ASTM D 4214, Method D, after a 2000 hour weatherometer test.
Abrasion Resistance	Per ASTM D 968, Method A, POLYDURE® 500 will pass 30 liters/mil, minimum, of falling sand.
Flame Spread Rating	POLYDURE® 500 displays a flame spread classification of A (Class 1), when tested in accordance with ASTM E 84.

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