



Bee Line
Consulting and Electric

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Since 1980 Serving the Enclosure Industry

Date: 06-16-21

Client: MHS Legacy Group

Operation: CI Metal Fabrication

Project: Picklex 20 Paint Testing

Location: Meridian MS

Purpose of Testing ; To check PPG Amerilock 400/2 Air Dry Epoxy adhesion to Picklex 20 Pretreatment applied to 10 gauge sheet steel and .250 plate 4 Samples

Samples : Hot Rolled Steel - – remove any loose rust or debris - air blow off – dry rag wipe – apply Picklex 20

Testing and Requirements

Test A: Coating Cure Test MEK Solvent Rub and Solvent Resistance Rub Test – ASTM D4752- AAMA 2605 Evaluation for Solvent Resistance by Solvent Rub Test - ASTM D4752 and NCCA 11-18. This test method is used to determine the degree of cure of a baked film by the paint film resistance to a specified solvent. 50double rubs no breakthru of painted surface

Test B: Dry Film Thickness Min Required Per AAMA 2605 2.0mil over 85% no reading lower than 1.2 mil
Paint Manufacture PPG Min dry Film Recommended 4.0 mil DFT Max 8.0 mil DFT

Dry Film Testing: with Quanix Keyless 1023928-2

ASTM B499 D1400 – Standard Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Ferrous Metal Base

Test C: Dry Cross Hatch Tape Adhesion ASTM D3359 1/16 AAMA 2605 7.4.1.1 Test Device Elcometer Cross Hatch Tool Perm cell Tape or Equal No lift or film removal allowed at squares - RF Macroscope 25 8x30 magnification of cross hatch for lift Test to prove paint adhesion to substrate No removal of film under the tape within or outside of the cross-hatched area

Test D :Boiling Water Cross Hatch Adhesion AAMA 2605 7.4.1.3 20min 210 f Distilled Water 5 min recovery Elcometer Cross Hatch Tool Permacell Tape or Equal
No lift or film removal allowed at squares - RF Macroscope 25 8x30 magnification of cross hatch

Additional Testing Durabilty (Not Required for Interior Exposure) Samples #1 and #3

Test E :Boiling Water Cross Hatch Adhesion AAMA 2605 7.4.1.3 40min 210 f Distilled Water 5 min recovery Elcometer Cross Hatch Tool Permacell Tape or Equal
No lift or film removal allowed at squares - RF Macroscope 25 8x30 magnification of cross hatch
Testing E on Sample # 1 and # 3 only after Test D

Test F: Salt Spray Testing ASTM A1003/ASTM A1004 indicate that metallic-coated, nonstructural cold-formed steel framing members should undergo 75 hours of ASTM B117 exposure. Using ASTM D1654 (scribing), a scratch is placed in the coating to the underlying metal to see how corrosion develops. Additionally, using ASTM D3359 (adhesion by tape), it can be determined how well a coating adheres to metal and how far the corrosion crept. The test specimen panels #1 and #3 were mounted inside the salt spray test chamber and subjected to 1000 hours of salt spray at a chamber temperature range of 92-97 degrees F. The salt solution was prepared to 5 parts by mass of sodium chloride (salt) in 95 parts of water (a 5% salt solution). The solution pH remained in a neutral range of 6.5 to 7.2. Upon completion of the 1000 hours salt spray exposure, the samples were removed from the test chamber, gently washed under running water, and immediately dried. Each test panel specimen was inspected for corrosive undercutting of the film from the scored lines. The test panel specimens each scored a maximum 7 rating; a 'pass' rating must be greater or equal to a 7 rating. Slight picking of rust is allowed

Sample # 1 .250 plate steel PPG Amerlock 400/ 2 on Picklex 20 Conversion Coating
 Applied 05-21-21 Picklex and Amerlock 400/2
 DFT 4.5mil

Test A : Coating Cure Solvent Rub	Pass
Test B: Dry Film Thickness	Pass
Test C: Dry Cross Hatch Adhesion	Pass
Test D: Boiling Water Cross Hatch Adhesion	Pass
Test E: Boiling Water Cross Hatch Adhesion	Extended Pass
Test F: Salt Spray ASTM 1000 hr	Pass

Sample # 2 .250 plate steel PPG Amerlock 400/ 2 on Picklex 20 Conversion Coating
 Applied 05-21-21 Picklex and Amerlock 400/2
 DFT 4.7mil

Test A : Coating Cure Solvent Rub	Pass
Test B: Dry Film Thickness	Pass
Test C: Dry Cross Hatch Adhesion	Pass
Test D: Boiling Water Cross Hatch Adhesion	Pass 20min

Sample # 3 10 guage sheet steel PPG Amerlock 400/ 2 on Picklex 20 Conversion Coating
 Applied 05-21-21 Picklex and Amerlock 400/2
 DFT 5.9mil

Test A : Coating Cure Solvent Rub	Pass
Test B: Dry Film Thickness	Pass
Test C: Dry Cross Hatch Adhesion	Pass
Test D: Boiling Water Cross Hatch Adhesion	Pass
Test E: Boiling Water Cross Hatch Adhesion	Extended Pass
Test F: Salt Spray ASTM 1000 hr	Pass