



Anti-Corrosion Coating For Frames

1 Scope

1.1 Material Description. This specification covers the pretreatment paint materials and some processing requirements for a waterborne black, electrodeposition primer used on frames. Access, vent and drain holes may have to be added to frame rails and cross members to assure adequate paint film coverage is applied to the enclosed cavity. The material shall be applied to a minimum film thickness of 25 µm on exterior surfaces and 15 µm on all interior surfaces.

1.2 Symbols. Not applicable.

1.3 Applicability. Coating of frames and cradles.

1.4 Remarks. None.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

ASTM D6886 ISO 2808

2.2 GM Standards/Specifications.

9984001	GMW3286	GMW14700	GMW14872
GMW3008	GMW14270	GMW14829	GMW15282
GMW3059			

2.3 Additional References.

 None.

3 Requirements

3.1 Process Requirements. The approved coating shall be applied in accordance with the supplier's recommendations. Frames should be processed in vehicle position. Surface condition of metal to be painted shall meet requirements of 9984001.

3.1.1 Chemical Surface Treatment.

3.1.1.1 Applications required to meet a GMW14872 Duration D durability shall be caustic cleaned and zinc phosphated prior to Electrocoat (e-coat) application.

3.1.1.2 Applications constructed with all bare, non galvanized steel and required to meet a GMW14872 Duration E durability shall be caustic cleaned, acid descaled and zinc phosphated prior to electrocoat application. Acid descale shall be completely rinsed prior to phosphate.

3.1.1.3 Applications constructed with galvanized steel and required to meet a GMW14872 Duration E durability shall be caustic cleaned, acid descaled in a solution with a Power of Hydrogen (Ph) of five (5) to six (6) and zinc phosphated prior to electrocoat application. Acid descale shall be completely rinsed prior to phosphate. Galvanized steel construction includes mixed construction of galvanized and non galvanized steels.

3.1.2 Electrocoat Application. Frames shall be immersed in electrocoat bath for sufficient time at the specified voltage to obtain the required film build. The tank should be designed such that the parts exit from the bath free of residue and excessive foam. It is recommended that the parts enter the electrocoat tank with the exterior surface completely dry or completely wet with deionized water to avoid appearance defects. Electrocoat application systems shall be designed to eliminate entrapped air in internal cavities.

3.1.3 Rinsing. Rinse systems shall insure no unreacted paint remains on the frame prior to cure.

3.1.4 Cure. The parts shall be baked for a minimum of 20 minutes at 190 °C (375 °F) metal temperature (all areas of the frame).

3.2 Properties. See Table 1.

Table 1: Properties

Properties	Values	Test Methods
Color	Black	Visual
Thickness	25 µm Exterior Surface 15 µm Interior Surface	ISO 2808
Volatile Organic Compound (VOC)	< 84 g/L	ASTM D6886
Hazardous Air Pollutants (HAP)	0	ASTM D6886
Surface Quality	Must be a smooth, uniform surface. No blisters, runouts, rinsing residues or other surface defects which could require serious repair.	Visual

3.3 Performance Requirements (see Table 2). Test panels for all the performance tests are 2 mm to 3 mm thick by 75 mm x 300 mm of hot rolled steel, pickled and oil frame stock and hot rolled steel Hot Dipped Galvanized (70G/70GU). All test panels are to be aged 72 h before tests are performed. Testing should be performed before and after heat soak of 48 h at 204 °C (400 °F).

Table 2: Performance Requirements

Properties	Test Values	Test Methods
Gravelometer	5 to 6	GMW14700 Method A or B
Throwpower	300 mm minimum	GMW3008
Neutral Salt Spray	1000 h < 1% Face Rust No Blisters	GMW3286
Corrosion Creepback	3 mm maximum Creep	GMW15282
Crosshatch Tape Adhesion	< 1% loss	GMW14829 Method A or B
Cycle Corrosion	3 mm maximum Creep and < 1% Face Rust	GMW14872, Underbody (UB), All, Four (4) Salt Sprays, Method 1/2, Exposures 0, A, and D

4 Manufacturing Process

Not applicable.

5 Rules and Regulations

5.1 Legal Regulations. All materials must satisfy applicable laws, rules, regulations and recommendations valid in the country of usage.