



Topcoats, Accent Enamel for Rigid Plastics

1 Scope

This specification covers the qualification and performance requirements for exterior, solventborne two (2) component (2K) accent enamel topcoat for use on rigid plastics that performs over bake latitude of 82 °C to 135 °C (180 °F to 275 °F).

1.1 Material Description. These topcoats are part of a total painted product system and must meet the requirements set forth in this specification and those shown on engineering drawings. This specification shall be used in conjunction with GMW14797, Painted Plastic Parts Performance Requirements.

1.2 Symbols. Not applicable.

1.3 Applicability. These topcoats are designed to be applied over a baked primer or directly to plastic substrate.

1.4 Remarks. Not applicable.

2 References

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

2.1 External Standards/Specifications.

ISO 2808 ISO/TS 16949

2.2 GM Standards/Specifications.

9984801	GMW14124	GMW14797	GMW17434
GMW3005	GMW14270	GMW14829	
GMW3059	GMW14729	GMW15777	

2.3 Additional References. None.

3 Requirements

3.1 The submission requirements of GMW3005 must be completed prior to approval of the topcoat system. The supplier must clearly define the usage target.

3.1.1 Additional Submission Requirements. Table 1 of this specification must be completed prior to approval of the product.

3.2 Durability Performance. Systems approved under this specification must meet the minimum performance requirements of a Class Four (4) Topcoat as described in GMW3005. Topcoat Type B or Type C testing requirements shall be determined by the targeted usage.

Note: Class Four (4) designates three (3)-year Florida durable topcoat.

3.3 Processing Requirements. These topcoats are designed to be applied over a baked primer or directly over plastic substrate. Any wet on wet applications over primer must be evaluated as a separate paint system per this specification and applicable Primer Specification.

3.4 Compatibility. Compatibility with associated materials is evaluated for Type B or Type C usage per GMW3005.

3.5 Processability. General processability must be demonstrated per GMW3005. The process used to create the test panels must be production capable.

3.6 Appearance. The topcoat system must meet or exceed the GM specification as designated in GMW15777.

3.7 Gloss Level. Testing must be completed at three (3) gloss levels; 20 units, 30 units and 50 units on a sixty-degree meter.

3.8 Colors. Testing must be completed with a range of colors from black to light gray, including a metallic such as an Argent. Specific color must be agreed upon with the approving paint engineer.

Table 1: In-Line Reprocess Matrix

Original Equipment Manufacturer Film Build and Bake	Aging Before Recoat	Adhesion Promoter Before Recoat	Recoat Film Build and Bake	Initial Adhesion GMW14829	Humidity + Adhesion GMW14729 GMW14829	Environmental Cycle A GMW14124 GMW14729 GMW14829
L/H	72 h	No	T/T			
L/H	72 h	Yes	T/T			
H/L	72 h	No	T/T			
H/L	72 h	Yes	T/T			
L/H	2 weeks	No	T/T			
L/H	2 weeks	Yes	T/T			
H/L	2 weeks	No	T/T			
H/L	2 weeks	Yes	T/T			

Key:

h = hours

H = High

L = Low

T = Target

3.9 Panel Preparation. Panels are to be prepared for Type B or Type C materials per GMW3005.

Note: Power washing per 9984801 is required. Deviation must be approved by the GM Vehicle Systems - Paint Engineer.

3.10 Film Build (ISO 2808). The enamel must meet all specified appearance and durability requirements at a minimum film of 38 µm (1.5 mil). The acceptable range for a color will be established during annual pigmentation evaluation (GMW17434) and will be released by GM Vehicle Systems - Paint as the GMW17434 Approved Color Source List, available by model year from the paint source.

3.10.1 Film Build Latitude. The specific topcoat film build range for individual technologies must be established by designed experiment or a matrix ranging from 25.4 µm to 63.5 µm (1.0 mil to 2.5 mil).

3.10.1.1 Performance criteria are Xenon Weatherometer, Florida exposure, humidity adhesion and chip resistance. Values will be noted on the Approved Source List for the specific technology.

3.11 Flash. A flash time of one (1) minute to three (3) minutes between coats of enamel application is typical. Six (6) minutes of flash is typical prior to oven entrance. Refer to the approving paint engineer for additional information regarding exceptions to the typical processing flash time ranges.

3.12 Bake. Products that are approved to this standard have a typical bake range of 82 °C to 135 °C (180 °F to 275 °F). Time at substrate temperature typically varies from 20 minutes to 90 minutes. Refer to the approving paint engineer for additional information in regards to exceptions for the typical processing bake temperature and time ranges.

3.13 Bake Window. Cure charts must be developed as specified in GMW3005 to define technology limits for each product. Once developed and approved, the bake chart is signed by GM Vehicle Systems - Paint and is the only acceptable document for defining cure.

3.14 Chemical Requirements. All two (2)-component enamel reducers must be urethane grade or equivalent.