



Topcoat System – Flexible Solventborne Basecoat/2K Etch Resistance Clearcoat

1 Scope

This specification covers the qualification and performance requirements for a flexible, exterior, solventborne, one-component (1K) basecoat/two-component (2K), solventborne, etch-resistant, clearcoat topcoat system with a bake latitude of approximately 115 °C to 135 °C (240 °F to 275 °F).

1.1 Material Description. Basecoat components of these systems are typically one-component (1K) solventborne technologies. Clearcoat components of these systems are flexible, two-component (2K) solventborne urethane or urethane blends. Each combination of specific basecoat and clearcoat must be tested and approved as a basecoat/clearcoat system. The individual components are not interchangeable and are approved for use only with combinations of basecoat/clearcoat of the total paint system which was used in the qualification testing. It must also be compatible with specific adhesion promoters and/or primers used with specific plastics.

1.1.1 This specification shall be used in conjunction with the Approved Paint on Plastic System (APOPS), a section of the GM Materials Approval Source List, which lists the approved substrate, cleaning, priming, and topcoat combinations. APOPS test requirements are defined in GMW14797.

1.2 Symbols. Not applicable.

1.3 Applicability. These topcoats are designed to be applied over an adhesion promoter or a baked primer. These topcoats are typically used over Thermoplastic Polyolefin (TPO) or Reaction Injection Molded (RIM) Polyurethane. All Thermoplastic Polyolefin substrates using topcoats approved to this specification must be applied over an adhesion promoter (9984808 or 9984810) or flame treatment per GMW16133.

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
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2.2 GM Standards/Specifications.

9984801	GMW3059	GMW14797	GMW17434
9984808	GMW14124	GMW14829	
9984810	GMW14270	GMW15777	
GMW3005	GMW14729	GMW16133	

2.3 Additional References.

 None.

3 Requirements

3.1 Submission. The submission requirements of GMW3005 must be completed prior to approval of the topcoat (basecoat/clearcoat) 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 Two (2) topcoat as described in GMW3005. The topcoat Type B and/or Type C testing requirements shall be determined by the targeted usage.

3.3 Etch Resistance. Coatings approved under this specification are expected to provide to the customer a finish that will prevent or minimize environmental etch and water spot damage. Minimum etch rating is six (6) per the Jacksonville Rating Scale, or equal to typical Original Equipment Manufacturer (OEM) body system controls for a given exposure test.

3.4 Processing Requirements. These topcoats are designed to be applied over an adhesion promoter or a baked primer. Any wet-on-wet applications over primer must be evaluated as a separate paint system per this specification and applicable primer specification.

3.5 Appearance. The topcoat system (basecoat/clearcoat) must meet or exceed requirements as designated in GMW15777.

Table 1: In-Line Reprocess Matrix

Original Equipment Manufacturer Film and Bake	Aging Before Recoat	Adhesion Promoter Before Recoat	Recoat Film and Bake	Initial Adhesion GMW14829	96 h Humidity Plus 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

3.6 Compatibility. Compatibility with associated materials is evaluated for Type B and/or Type C usage per GMW3005.

3.7 Panel Preparation. Panels are to be prepared for Type B and Type C materials per GMW3005.

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

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

3.7.2 Film Build (ISO 2808). The clearcoat must meet all specified appearance and durability requirements at a minimum film of 38 µm (1.5 mil). Individual basecoat colors may have higher minimum film builds than the technology minimum due to hiding or Ultraviolet (UV)/Visible (VIS) transmission requirements. The acceptable range for a color will be established during annual pigmentation evaluation (GMW17434) and will be released by GM Vehicle Systems Engineering - Paint as the GMW17434 Approved Color Source List, available by model year from the paint source.