



Coatings for Balance Weights for Wheels

1 Scope

1.1 Material Description. This specification defines the basic requirements for coatings for weights used to balance tire and wheels assemblies. The coatings consist of a powder epoxy basecoat and powder polyester topcoat. The specification also defines the requirements for corrosion coatings for the balance weight clips.

1.2 Symbols. Not applicable.

1.3 Applicability. All coated balance weights used on aluminum or steel wheels.

2 References

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

2.1 External Standards/Specifications.

ISO 2028 SAE J1976

2.2 GM Standards/Specifications.

GMW3059 GMW3359 GMW15891 GMW15919
GMW3286 GMW14270

2.3 Additional References.

Engineering Drawing
GM Appearance Standard

3 Requirements

3.1 Qualification Requirements.

3.1.1 The topcoat paint shall be qualified for exterior usage by the paint supplier. Each formulation shall be evaluated in one (1) year of Florida exposure at 5 degree from horizontal, facing south per SAE J1976 procedure A. There shall be minimal gloss and color change or any other deleterious effect when subjected to this weathering. The paint supplier is required to have documentation showing that the topcoat paint has been evaluated in this manner.

3.1.1.1 Test data shall be kept current, i.e., data must be no more than two (2) years old from the end of the exposure period. All topcoat paints shown on the GM Approved Materials Source List (see GMW14270) must have undergone this test.

3.1.2 The coating clips shall conform to the requirements of GMW3359 Type B, except without the topcoat sealer. The clips shall be tested without the balance weight coatings, and the balance weight supplier shall retain qualification data and material certifications on each batch of clips.

3.1.3 The balance weight assembly shall be evaluated with a Neutral Salt Spray test per GMW3286 for 1000 h (not scribed), with no corrosion allowed. Only one side of the weight can be tested per this requirement, therefore, multiple weights should be used to qualify both sides of the balanced weight. These tests shall be run on coated weight/clip assemblies. Weight segments used for stick-on weights can be tested with or without the adhesive backing.

3.1.4 The balanced weight assembly shall be evaluated with a Thermal Shock Paint Adhesion test per GMW15919 with no visible corrosion or degradation. The test shall be run with a scribed coating.

3.1.5 The balance weight assembly shall be evaluated with a Cure test per GMW15891. Cure test solvents can be selected based upon the product literature of the raw material supplier. The number of rubs for pass/fail

criteria must be established by the applicator and documented in the process control plan. (Meaningful pass/fail criteria can only be established after the number of rubs to coating breakdown is determined for the system).

3.1.6 The total powder paint thickness on the weight shall be a minimum of 38 μm , as measured using a weight pick-up method as described in ISO 2028. The weight pick-up method shall be Statistical Process Control (SPC) controlled per the specifications on the Engineering Drawing, and shall be correlated to measurements made with microstructural cross sections.

3.1.7 The coating shall meet the required GM Appearance Standard distributed by GM Design Quality.

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.

5.2 Language. In the event of conflict between the English and domestic language, the English language shall take precedence.

5.3 Inspection and Rejection. Samples of components or materials released to a GM material specification shall be tested for conformity with the requirements of this material specification and approved by the responsible Engineering department prior to commencement of delivery of bulk supplies.

A new approval must be received for any changes, e.g., properties, manufacturing process, location of manufacture, etc. If not otherwise agreed, all testing and documentation normally required for initial release must be completed.

It is the responsibility of the supplier to inform the customer in a timely manner, without solicitation, and to include documentation of all modifications of materials and/or processes and to apply for a new release.

5.4 Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS). For new product submissions, or when a change in chemical composition of an existing product has occurred, a complete copy of the Material Safety Data Sheet/Safety Data Sheet must be submitted in compliance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) requirements or other country-specific MSDS/SDS requirements.

5.5 All materials supplied to this standard must comply with the requirements of the International Material Data System (IMDS) and GMW3059, **Restricted and Reportable Substances**.

6 Approved Sources

Materials supplied to this specification must be approved by General Motors.

A list of approved materials can be found in the GM Materials Approved Source List. This GM Material File is provided to third parties to reduce redundant testing of materials. If approved material already listed is used, the part supplier can use GM Material File reference for Production Part Approval Process (PPAP) material approval. If the decision is made to use a not yet approved material, contact Materials Engineering for details on the approval process. The material approval process must be completed prior to PPAP start date of the part supplied to General Motors.

Engineering qualifications of an approved source are required for this standard. Only sources listed in the GM Materials File (i.e., GM SupplyPower) under this standard number have been qualified by engineering as meeting the requirements of this standard. To access this list, reference GMW14270 for latest location.

For other GM locations, the responsible engineering group should be contacted to obtain the approved source in that individual country.

7 Notes

7.1 Glossary. Not applicable.

7.2 Acronyms, Abbreviations, and Symbols.

GHS Globally Harmonized System of Classification and Labeling of Chemicals

IMDS International Material Data System