



LABEL PERFORMANCE, RADIO FREQUENCY IDENTIFICATION (RFID), THERMAL TRANSFER PRINTABLE

WSS-M99P49-A1

1. SCOPE

The materials defined by this specification are calendered insulation paper with high inherent dielectric strength and radio frequency identification (RFID) inlay laminate transponder which communicates vehicle information to the plant and transportation readers. The RFID label is thermal transfer printable and is resilient to the production environment from body shop through paint, final trim, and shipping to the dealer.

2. APPLICATION

This specification was released originally for materials used for tracking vehicles within production control and management by Radio Frequency Identification (RFID) technology. The label is mechanically fastened to the vehicle body structure and remains with the body through the cleaner, phosphate, electrocoat, and paint processes. The RFID label is intended to be removed by the dealer prior to delivery to the final customer. In addition to the RFID transponder, the label will contain visible identification numbers or characters / marks / barcodes.

3. REQUIREMENTS

3.1 APPROVED SOURCES

This specification is performance based and does not have approved sources.

3.2 SYSTEM COMPATIBILITY

Initial label approval was based on a specific material system which included calendered insulation paper (covering material), RFID transponder and adhesives. Material selection, processing conditions and assembly plant processing conditions may affect label performance. If any of these parameters are changed, the label performance must be validated using the new parameters.

3.3 DIMENSIONS

As specified on
engineering drawing

3.4 INITIAL ACCEPTANCE CRITERIA

Labels must meet radio frequency transponder requirements as defined on the engineering drawing. The thermally printed labels shall be clearly legible and void of any surface imperfections that will make them unsuitable for the intended usage. Any numbers or identification characters / marks / barcodes shall be readable by line operators and electronic scanners (if required).

Date	Action	Revisions	Rev. 0
2016 04 05	Released		



3.5 EXPOSURE CONDITIONS

Expose labels to paragraph 3.5.1 through 3.5.7 and then evaluate.

- 3.5.1 Resistance to Production Cleaners No change

Test Method:

Expose six thermally printed labels with RFIDs to production cleaners utilized prior to phosphate for 1 minute at 70 ± 2 °C. Immerse the labels so that none of them are touching and they are completely covered by the cleaner solution. Remove the labels from the cleaner solution, rinse with deionized water, and inspect the labels within 1 hour at 23 °C.

- 3.5.2 Resistance to Production Phosphate No change

Test Method:

Expose the six labels tested in para 3.5.1 to production phosphate utilized prior to the electrocoat for 3 minutes at 50 ± 2 °C. Immerse the labels so that none of them are touching and they are completely covered by the phosphate solution. Remove the labels from the phosphate solution, rinse with deionized water, and inspect the labels within 1 hour at 23 °C.

- 3.5.3 Resistance to Production Electrocoat No change and no damage to the ecoat film

Test Method:

Expose the six labels tested in para 3.5.2 to production electrocoat for 5 minutes at 40 ± 2 °C. Immerse the labels so that none of them are touching and they are completely covered by the electrocoat solution. After 5 minutes of soak, electrocoat a phosphated steel panel utilizing the ecoat bath solution containing the labels per FLT M BV 119-01. Remove the labels and the ecoated panel from the electrocoat solution and rinse with deionized water.

Bake the ecoated panel and labels for 30 minutes metal temperature at 200 ± 2 °C and inspect after cool down to 23 °C.

Examine the ecoated panel for evidence of paint damage or craters and report results.

- 3.5.4 Paint Bake Exposure No change

Primer surfacer bake:

Expose the labels from 3.5.3 to a primer surfacer bake of 30 minutes at 177 ± 2 °C.

Base Coat/ Clear Coat bake:

Expose the labels to a base coat / clear coat bake of 30 minutes at 155 ± 2 °C.

- 3.5.5 Thermal Cycle Test No change

Condition 3 labels from 3.5.4 for 24 to 48 h at 23 ± 2 °C, and then expose the labels to the following cycle two times:

4 h at 38 ± 2 °C and 98 ± 2 % R.H

4h at -20 ± 1 °C

16 h min at 23 ± 2 °C