| | |
|---|---|
| **LABEL PERFORMANCE, NO ADHESIVE** | **WSS-M99P41-A10** |
| **LABEL PERFORMANCE, SEWN IN** | **WSS-M99P41-A11** |
| **LABEL PERFORMANCE, REMOVABLE** | **WSS-M99P41-A20** |
| **LABEL PERFORMANCE, PSA, INTERIOR** | **WSS-M99P41-A31** |
| **LABEL PERFORMANCE, PSA, EXTERIOR** | **WSS-M99P41-A32** |
| **LABEL PERFORMANCE, PSA, UNDERHOOD** | **WSS-M99P41-A33** |
| **LABEL PERFORMANCE, PSA HIGH ABRASION, INTERIOR** | **WSS-M99P41-A34** |
| **LABEL PERFORMANCE, PSA, HIGH ABRASION, EXTERIOR** | **WSS-M99P41-A35** |
| **LABEL PERFORMANCE, PSA, SECURITY FEATURE, INTERIOR** | **WSS-M99P41-A41** |
| **LABEL PERFORMANCE, PSA, SECURITY FEATURE, EXTERIOR** | **WSS-M99P41-A42** |
| **LABEL PERFORMANCE, PSA, SECURITY FEATURE, UNDERHOOD** | **WSS-M99P41-A43** |
| **LABEL PERFORMANCE, HEAT APPLIED, INTERIOR** | **WSS-M99P41-A51** |
| **LABEL PERFORMANCE, HEAT APPLIED, EXTERIOR** | **WSS-M99P41-A52** |
| **LABEL PERFORMANCE, HEAT APPLIED, UNDERHOOD** | **WSS-M99P41-A53** |
| **LABEL PERFORMANCE, HEAT APPLIED, HIGH ABRASION, INTERIOR** | **WSS-M99P41-A54** |
| **LABEL PERFORMANCE, HEAT APPLIED, HIGH ABRASION, EXTERIOR** | **WSS-M99P41-A55** |
| **LABEL PERFORMANCE, HEAT APPLIED, VERY HIGH ABRASION** | **WSS-M99P41-A56** |
| **LABEL PERFORMANCE, IN MOLD, POST MOLD, INTERIOR** | **WSS-M99P41-A61** |
| **LABEL PERFORMANCE, IN MOLD, POST MOLD, EXTERIOR** | **WSS-M99P41-A62** |
| **LABEL PERFORMANCE, IN MOLD, POST MOLD, UNDERHOOD** | **WSS-M99P41-A63** |
| **LABEL PERFORMANCE, PSA LABELS AND TAPES, PRODUCTION PART IDENTIFICATION, TRACKING AND ASSEMBLY** | **WSS-M99P41-A72** |

## 1. SCOPE

These specifications define the performance requirements for all Ford Motor Company vehicle labels. The base materials and adhesive types that make up the particular label are selected by the supplier to meet the intended application. The information is documented in Supplement A, of this specification.

## 2. APPLICATION

These specifications were released originally for labeling requirements of various automotive components. Applications include (but are not limited to) warning labels, bar code labels, instructional labels, and “patches” having no printing.

| Date | Action | Revisions | Rev. 05 |
|---|---|---|---|
| 2018 02 26 | Revised | See Summary of Revisions | L. Rice / A. Wedepohl, FNA |
| 2014 11 25 | Revised | See Summary of Revisions | G. Eaton, FNA |
| 2006 11 30 | Released | L. Hess, FNA | |


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## 2.1 DEFINITIONS OF LABEL APPLICATION TYPES

**No Adhesive**: Informational or instructional labels, located interior, exterior, or underhood, which are hung on the vehicle. The label must remain legible until the vehicle reaches the consumer.

**Sewn In**: Informational or instructional labels, interior only, and sewn into a vehicle component such as a seat, seatbelt webbing, or head rest. These labels must remain intact for the life of the vehicle.

**Removable**: Informational or instructional labels or protective films located interior, exterior or underhood. Removable labels are not intended to remain intact for the life of the vehicle. Removable labels are considered to be temporary for convenience inventory or process management. Protective films containing no printed information are considered removable labels Removable labels are intended to be easily removed by hand and leave the substrate they are applied to unaltered. The labels are hand applied at room temperature and must remain legible and in place until they are removed by the consumer or manufacturing facility.

**Pressure Sensitive Adhesive (PSA**): Informational or instructional labels located interior, exterior or underhood. PSA labels are intended to remain legible and in position for the life of the vehicle. PSA labels are NOT approved for seatbelt webbing. Maximum bond strength is reached after 72 hours, but within 20 minutes initial strength makes them difficult to remove. The labels are hand applied in the assembly plant or at the Tier One supplier facility.

**PSA High Abrasion**: Same as PSA but for labels located in a high abrasion environment such as the seat, carpet, or unprotected exterior.

**PSA Label Security Feature**: PSA labels described above but with unique characteristics designed to show evidence that a part on a vehicle or its information has been tampered with, altered and/or counterfeit. The label security feature(s) could include, but are not limited to, UV foot print, self-destruction upon attempted removal, infra red traceable ink or adhesive or anti-counterfeit printing. The intent of the security feature is to allow field investigators the ability to authenticate genuine security labels.

**Heat Applied**: Informational or instructional labels that are located anywhere in the vehicle. They are intended to remain legible for the life of the vehicle. There are two types of heat applied labels:

1. Heat transfer which is an ink base with a protective coating and adhesive.
2. Heat seal which is a multi-layer film consisting of a heat-activated adhesive.

The labels are applied at the Tier One supplier facility per the label supplier process instructions.

**Heat Applied High Abrasion**: Same as heat applied but with a different construction that resists abrasion and is applied to the carpet, seat or unprotected exterior locations.

**Heat Applied Very High Abrasion**: Heat applied labels to seatbelt webbing.

**In Mold/Post Mold**: Instructional or informational labels that are applied at the Tier One supplier facility. For in mold, the label is placed into the injection molding tool prior to molding the part. In Post mold or pad print, silkscreen paint is applied to the part. They are intended to remain legible for the life of the vehicle.

**PSA Labels and Tapes, Production Part Identification Tracking and Assembly:** Printable PSA labels or roll tape for identification labeling of parts. The labels or tape are required to remain intact prior to and during assembly. They have no requirement to be legible for the life of the vehicle or to be removed. They have no requirement to remain intact, except for frame labels applied prior to E-coat which must remain in place for corrosion resistance.

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## 2.2 APPLICATION TESTING

Label test requirements depend on their type, location, and unique properties. Table 1 outlines the test requirements necessary for approval.

Note: All labels located in a protected exterior location do not require exterior weathering outlined in paragraph 3.16.2. All other exterior test requirements apply.

**TABLE 1**
**TEST REQUIREMENTS FOR SPECIFIC LABEL TYPES**

| LABEL TYPE | Property | Location | Suffix | Tests Required |
|---|---|---|---|---|
| No Adhesive | | All | A10 | 3.1 - 3.10.2, 3.12.2.1, 3.12.4, 3.12.5.1, 3.13, 3.14, 3.16.1, 3.17.1 |
| Sewn In | | Interior | A11 | 3.1 - 3.10.2, 3.12.2.1, 3.12.4, 3.12.5.1, 3.13 - 3.15, 3.16.1, 3.17.1, 3.19 - 3.26 |
| Removable | | All | A20 | 3.1 - 3.10.2, 3.11.1, 3.12.2.1, 3.12.4, 3.12.5.1, 3.12.5.2, 3.1**3** - 3.15 (Interior.), 3.16.1, 3.16.2, 3.17.1 |
| PSA | General | Interior | A31 | 3.1 - 3.10.2, 3.11.2, 3.12.2.2, 3.12.3.1, 3.12.4, 3.12.5.1, 3.13-3.15, 3.16.1, 3.17.1, 3.18-3.23, 3.25 |
| | | Exterior | A32 | 3.1 - 3.10.2, 3.11.2, 3.12.2.3, 3.12.3.1, 3.12.4, 3.12.5.2, 3.16.2, 3.17.1, 3.26 - 3.28, 3.30, 3.31 |
| | | Underhood | A33 | 3.1 - 3.10.2, 3.11.2, 3.12.2.3, 3.12.3.2, 3.12.4, 3.12.5.3, 3.15, 3.17.1, 3.26, 3.27, 3.29 – 3.33 |
| | High Abrasion | Interior | A34 | 3.1 - 3.10.2, 3.11.2, 3.12.2.2, 3.12.3.1, 3.12.4, 3.12.5.1, 3.13-3.15, 3.16.1, 3.17.2, 3.18-3.23, 3.25 |
| | | Exterior | A35 | 3.1 - 3.10.2, 3.11.2, 3.12.2.3, 3.12.3.1, 3.12.4, 3.12.5.2, 3.16.2, 3.17.2, 3.26 - 3.28, 3.30, 3.31 |
| PSA | Security Feature | Interior | A41 | 3.1 - 3.10.2, 3.11.3, 3.12.2.2, 3.12.3.1, 3.12.4, 3.12.5.1, 3.13-3.15, 3.16.1, 3.17.1, 3.18-3.23, 3.25 |
| | | Exterior | A42 | 3.1 - 3.10.2, 3.11.3, 3.12.2.3, 3.12.3.1, 3.12.4, 3.12.5.2, 3.16.2, 3.17.1, 3.26 - 3.28, 3.30, 3.31 |
| | | Underhood | A43 | 3.1 - 3.10.2, 3.11.3, 3.12.2.3, 3.12.3.2, 3.12.4, 3.12.5.3, 3.15, 3.17.1, 3.26, 3.27, 3.29 – 3.33 |
| Heat Applied | General | Interior | A51 | 3.1 - 3.10.2, 3.11.5, 3.12.2.2, 3.12.3.1, 3.12.4, 3.12.5.1, 3.13 - 3.15, 3.16.1, 3.17.1, 3.18 - 3.23, 3.25 |
| | | Exterior | A52 | 3.1 - 3.10.2, 3.11.5, 3.12.2.3, 3.12.3.1, 3.12.4, 3.12.5.2, 3.16.2, 3.17.1, 3.26 - 3.28, 3.30, 3.31 |
| | | Underhood | A53 | 3.1 - 3.10.2, 3.11.5, 3.12.2.3, 3.12.3.2, 3.12.4, 3.12.5.3, 3.15, 3.17.1, 3.26, 3.27, 3.29 – 3.33 |
| | High Abrasion | Interior | A54 | 3.1 - 3.10.2, 3.11.5, 3.12.2.2, 3.12.3.1, 3.12.4, 3.12.5.1, 3.13 - 3.15, 3.16.1, 3.17.2, 3.18 - 3.23, 3.25 |
| | | Exterior | A55 | 3.1 - 3.10.2, 3.11.5, 3.12.2.3, 3.12.3.1, 3.12.4, 3.12.5.2, 3.16.2, 3.17.2, 3.26 - 3.28, 3.30, 3.31 |
| | Very High Abrasion | Interior Seatbelt | A56 | 3.1 - 3.10.2, 3.11.5, 3.12.2.2, 3.12.3.1, 3.12.4, 3.12.5.1, 3.13 - 3.15, 3.16.1, 3.17.3, 3.18 - 3.25 |
| In Mold/Post Mold | | Interior | A61 | 3.1 - 3.10.2, 3.12.2.2, 3.12.3.1, 3.12.4, 3.12.5.1, 3.13 - 3.15, 3.16.1, 3.17.1, 3.18, 3.19, 3.21 |
| | | Exterior | A62 | 3.1 - 3.10.2, 3.12.2.3, 3.12.3.1, 3.12.4, 3.12.5.2, 3.16.2, 3.17.1, 3.18, 3.19, 3.21, 3.26 - 3.28, 3.30, 3.31 |
| | | Underhood | A63 | 3.1 - 3.10.2, 3.12.2.3, 3.12.3.2, 3.12.4, 3.12.5.3, 3.15, 3.17.1, 3.26, 3.27, 3.29 - 3.33 |
| PSA Labels and Tapes | Only for Production Tracking and Assembly | ALL | A72 | 3.1 – 3.10.2, 3.11.4, 3.12.2.1, 3.12.4, 3.12.5.2, 3.16.3, 3.17.1, 3.27 |

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# 3. REQUIREMENTS

## 3.1 APPROVED SOURCES

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

## 3.2 LABEL SUBSTRATE COMPATIBILITY MANAGEMENT

All labels meeting performance specifications A10-A63 must have Supplement A completely filled out and signed by Ford Materials Engineering, the label supplier, and the Tier One supplier. Compatibility of the label adhesive with substrate material is the responsibility of the Tier One supplier. The Tier One shall have the label tested on any additional substrates against the applicable performance specification requirements. If the requirements are met, a new Supplement A shall be signed and documented with the addition/change in substrate material.

Completed Supplement A's are stored on the Ford Materials Engineering shared drive under the specification number.

## 3.3 CONDITIONING AND TEST CONDITIONS

Unless otherwise noted, the test specimen consists of a label affixed to the production substrate material. The labels must be applied to the production representative substrate using a production representative process. The substrate material may be taken from the actual part or may be a production-representative plaque (having grain if appropriate.)

## 3.4 REPORTING REQUIREMENTS ON SUPPLEMENT A – All Labels

Requirements apply for all specifications.

### 3.4.1 Thickness

Report (if applicable) label cover stock, face stock, adhesive, and release liner thickness on Supplement A.

### 3.4.2 Material Type

Report basic material type for each layer of the label on Supplement A. if applicable**.**

### 3.4.3 Label Print Color and Print Method

Report ink color(s) used on the label and print method on Supplement A.

### 3.4.4 Application Substrate

Report the material the label was affixed to for testing. Unless prior authorization is obtained from Materials Engineering, the label must be tested on the substrate(s) it will be adhered to in production. The substrate (Ford Material Specification or Industry Standard and Grade or Supplier Name and Product Code) and substrate color(s) must be recorded on Supplement A. Management of substrate changes is the responsibility of the Tier One supplier, per para 3.2.

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3.4.5 Application Process

Any label application parameters that must be set during production must be documented on Supplement A. (e.g. heat applied labels must have a record of process temperature, time, recommendations, etc.)

3.4.6 Safety Labels, Scanned Labels and Security Feature Labels

Report on Supplement A. See para 3.10

3.4.7 Retain Supplement A Requirement Information

Supplement A is maintained by Materials Engineering and is required at PPAP. Contact the Materials Engineering Department for information.

3.4.8 Functional Requirements

Report on Supplement A any functional requirements and/or any limitations for the label.

## 3.5 RELEASE LINER

For labels with release liners, the label must be easily removed from the liner and must not tear, distort, or otherwise become illegible rendering the label unsuitable for intended application.

## 3.6 PRINT ADHESION

Place a strip of 24 mm wide 3M #898 or current equivalent tape (with a peel adhesion of 0.6 N/mm width) on the printed side of the label. Apply the tape with moderate thumb pressure to the label and substrate. Remove the tape by pulling one end at a 90° angle with a quick snap. There shall be no effect on legibility and no graphic delamination from the substrate.

## 3.7 SETTING TIME FOR NORMAL HANDLING, STORAGE STABILITY

The label shall set sufficiently to permit normal handling immediately after application and shall be free of streaks, blisters, wrinkles, ragged edges, and any other surface imperfections after storage for up to 30 days at temperatures up to 40 °C

## 3.8 LABEL STRENGTH

The label must not break, tear, or deface when removed from the release backing or tape roll.

## 3.9 GENERAL ACCEPTANCE CRITERIA

**Initial**

The labels or tapes shall be free of streaks, blisters, wrinkles, ragged edges, and any other surface imperfections that will make them unsuitable for the intended usage. The design, color, and gloss shall be as specified on the engineering drawing.

**After Exposure**

After each of the exposure conditions described for all label types the film or label must not show visual evidence of peeling, loss of printing or legibility, loss of adhesion, curling of edges, staining, blistering, checking, cracking, excessive shrinkage, or any other effect which would detract from its proper function or appearance. If the label is tamper-evident (A41-A43), the label features must retain the same quality after each exposure. Labels containing barcodes must remain scannable after each exposure.

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## 3.10 SAFETY LABELS, SCANNED LABELS, AND SECURITY FEATURE LABELS

These labels must be detailed on engineering drawings:

3.10.1 Safety Labels- Child seats, airbag warning, etc. must be noted on the engineering drawing. This label classification may convey safety information or governmentally mandated information that is considered permanent. Where applicable, the C/FMVSS regulation shall be noted on the engineering drawing.

3.10.2 Scanned Labels – (Only applicable to labels that are intended to be scanned with a barcode reader.) The scannability performance level must be documented on the Engineering drawing and Supplement A. The barcode pattern must be scannable by the type of scanner that will be used in production.

Original
The barcode pattern must be scannable by the type of scanner that will be used in production.

After Conditioning
If the label must be scannable for the life of the vehicle and/or service, scan the label after conditioning per the correct label type. The barcode pattern must be scannable after the conditioning periods.

3.10.3 Security Feature: Labels shall exhibit the required label security feature (Tamper-Evident and/or Alteration Resistant and/or Counterfeit Resistant) after being subjected to ALL test conditions. **VIN and antitheft labels must be constructed to meet all three security features listed below in para 3.10.3.1 - 3.10.3.3.** The label security feature shall be in compliance with the applicable regional governmental requirements (ex. NHSTA Part 541). The critical feature(s) shall be noted on the engineering drawing. **The specific method used to achieve the required label security property shall be documented in Supplement A.**

3.10.3.1 Tamper-Evident - Where required, the designed destruct mechanism, (for example, tell-tale evidence, UV Footprint, frangible window, or other Label Manufacturer method) that shows tamper evidence, even after Ford has added any variable data, the label must be evaluated by general visual examination after each test condition.

3.10.3.2 Alteration Resistant - Where required, the label manufacturer shall provide evidence to Ford Motor Company that sufficient effort has been made to produce a label and information that is resistant to alteration, even after Ford has added any variable data. (For example: Alteration of the number on the label must leave traces of the original number or otherwise visibly alter the appearance of the label material.)

3.10.3.3 Counterfeit Resistant – Where required, the label manufacturer shall provide evidence to Ford Motor Company that sufficient effort has been made to produce a label and information that is resistant to counterfeiting, even after Ford has added any variable data. The label manufacturer shall provide the method designed to make the label counterfeit resistant. (For example: print pattern; infrared analysis of cover material, ink or adhesive; embedded fibers; etc.)

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