



PERFORMANCE, RUBBER PARTS, EXTERIOR

WSS-M9P14-A1

1. SCOPE

The performance characteristics defined by this specification may be used to evaluate the environmental resistance of visible rubber parts on the vehicle exterior. The parts may be flock or anti-friction coated on areas specified on the engineering drawing.

2. APPLICATION

This specification was released originally for exterior, visible rubber parts, including but not limited to boots, gimps and seals. Material selection must be reviewed and approved by Ford Materials Engineering.

2.1 LIMITATIONS

This performance specification excludes belt weatherstrips (WSS-M9P10-Latest), glass run weatherstrips (WSS-M9P10-Latest), and/or dynamic sealing components (WSS-M9P9-Latest) integral to CPSC 01.07.01, 01.07.02, 01.07.08, 01.07.09, 01.07.10, 01.08.04, 01.11.19, 01.11.20

3. REQUIREMENTS

3.1 APPROVED SOURCES

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

3.2 FINISHED PARTS

Testing must be conducted at Design Verification (DV) and Product Validation (PV) per Table 1.0 (including Supplement A), unless otherwise agreed to by Materials Engineering, and on actual production parts or a section of the part whenever possible. Where part dimensions limit testing equipment access, representative test samples may be substituted. DV Testing must follow the Process Window DOE, paragraph 3.6. PV Testing must be conducted on actual production processed parts. No change in material, facility, or processing is permitted without written approval from Ford Materials Engineering Activity, via SREA.

All test values are based on parts conditioned in a controlled atmosphere of 23 +/- 2 °C and 50% R.H. for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

3.3 APPEARANCE: COLOR, FINISH, SURFACE (FLTM BI 109-01)

The part shall be generic black (GAXA) in color and have, unless otherwise specified on the engineering drawing or PDL. The gloss level should also be noted on the engineering drawing. The color shall be uniform (no change in color less than Rating 5 of the Gray Scale, AATCC Evaluation Procedure 1/ISO 105-A02) along the entire length of the part, including molded or mitered corners and splices.

The surface shall be free of blisters, voids and any bloom unless otherwise specified on the engineering drawing.

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3.4 RESISTANCE PROPERTIES

The following requirements shall be assessed on whole parts and must include all materials and constructions found within the parts.

Parts shall be tested to the exterior requirements as shown on the engineering drawing.

Separate specimens are required for each test.

The parts as received and after being subjected to the tests listed below shall conform to the following requirements:

- (a) No evidence of color or gloss change less than Rating 4 of the Gray Scale (AATCC Evaluation Procedure 1/ISO 105-A02).
- (b) No cracking, chalking, wrinkling, crazing, discoloration, iridescence, bloom, milkiness, separation, loss of adhesion (coating), or loss of embossment allowed (as defined in ASTM D1566) with the unaided eye unless otherwise noted in the test method.
- (c) No evidence of shrinkage or incompatibility between materials of construction. (Examples: coating to substrate, co-extruded materials, etc.)
- (d) Any successful attempt to separate the components of coated and/or composite parts must result in cohesive failure only. Any adhesive failure will be cause for rejection.

After exposure, the loss of pull-off effort shall not exceed 25% of the original requirement specified on the engineering drawing or part performance specification. Record the original and after exposure pull-off efforts.

All samples must be conditioned for 1 h +/- 5 minutes at 23 +/- 2 °C and 50% R.H. prior to all assessments, unless otherwise specified.

3.4.1 Humidity Exposure (ASTM D2247, 14 d at 38 +/- 2 °C, 95 – 100% R.H.) (a), (b), (c), (d)

3.4.2 Environmental Cycling Test (FLTMBQ 104-07, method 1, without CASS cabinet) (a), (b), (c), (d)

4 cycles, each cycle shall consist of the following:

4 h at 100 +/- 2 °C
4 h at 38 +/- 2 °C, 95% to 100% R.H.
16 h at -40 +/- 2 °C
4 h at 38 +/- 2 °C, 95% to 100% R.H.
4 h at 100 +/- 2 °C
16 h at -40 +/- 2 °C

3.4.3 Cold Flexibility (FLTMBP 106-03, 4 h at -40 +/- 2 °C) (a), (b), (c), (d)

3.4.4 Laboratory Accelerated Cyclic Corrosion (only for parts containing metals) (Test Method 00.00-L-467, see materials engineering for exposure time)

3.4.5 Ozone Resistance (FLTMBP 101-01, Procedure B) Rating 0 max, (a), (b), (c), (d)