



LAMP ASSEMBLY, EXTERIOR

WSK-M98P10-A

1. SCOPE

This specification defines the performance requirements for exterior lamp assemblies.

2. APPLICATION

This specification was released originally to define the performance requirements for exterior lamp assemblies such as front and rear lamps, licence plate lamps, heat lamps, etc.

3. REQUIREMENTS

Tests according to para 3.4, 3.6, 3.7, 3.9, 3.12, 3.16, 3.24 shall be carried out on the finished part mounted as assembled in the vehicle in a suitable device.

3.1 STATISTICAL PROCESS

Suppliers must conform to the requirements of Ford Quality System Standard Q-101. A mutually acceptable Control Plan as described therein is required for material/source approval. Appropriate statistical tools must be used to analyze process/product data so that variation in the final product is continuously reduced.

3.2 INFRARED SPECTROPHOTOMETRY AND/OR THERMAL ANALYSIS

Ford Motor Company, at its option, may conduct infrared and/or thermal analysis of material/parts supplied to this specification. The IR spectra and thermograms established for initial approval shall constitute the reference standard and shall be kept on file at the designated material laboratory. All samples shall produce IR spectra and thermograms that correspond to the reference standard when tested under the same conditions.

3.3 CONDITIONING AND TEST CONDITIONS

The part shall be conditioned for a minimum of 24 h at 23 +/- 2 C and 50 +/- 5 % relative humidity prior to test and tested under the same conditions unless otherwise specified.

Painted parts shall be aged 16 h at 45 +/- 2 C or 72 h at 23 +/- 2 C prior to above conditioning unless otherwise specified.

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1994 09 01	EP00E10348605000	Completely Revised	L. Rodigas
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3.4 ADHESION

Adhesion shall be tested on the original part and 15 to 30 min after the relevant ageing tests according to para 3.5, 3.6, 3.7, 3.9, 3.12, 3.16, 3.24.

Test Methods: One of the following test conditions shall be defined according to the application and shown on the Engineering Drawing.

3.4.1 Coating Adhesion No chipping
(FLTM BI 106-01, Method C)

3.4.2 Peel Strength, min 15 N/25 mm
(ASTM D 1000, Method A)

3.4.3 Visual Evaluation

The finished part shall show no evidence of blisters or delamination.

For painted, hot stamped, laminated and metallized areas on the finished part.

3.5 HEAT AGING

The finished part shall show no visible evidence of warpage, deformation, cracks, delamination or other failures to an extent that would affect its use in the ultimate assembly. There shall be no local shrinkage where the part has been gated which would interfere with assembly to related parts, or affect its appearance.

The finished part shall show no change in appearance when compared with the original part. In addition, there shall be no change in light reflectance and transmittance as specified on the Engineering Drawing.

Test Methods: One of the following test conditions shall be defined according to the application and shown on the Engineering Drawing.

3.5.1 Condition A

Mount the finished part according to vehicle installation on a suitable fixture and place it in car position in a mechanical convection oven maintained at 80 +/- 2 C for 7 days. Evaluate after conditioning for 24 h at 23 +/- 2 C.

3.5.2 Condition B

As under para 3.5.1, except use the unmounted part.



3.5.3 Condition C

As under para 3.5.1, except maintain part at test temperature as specified on the Engineering Drawing.

3.5.4 Condition D

As under para 3.5.1, except maintain the unmounted part at test temperature as specified on the Engineering Drawing.

3.6 PAINT REPAIR OVEN RESISTANCE

The finished part shall show no visible evidence of deformation or other failures which would interfere with assembly to mating parts or affect its appearance. The adhesion of painting shall meet the requirements to para 3.4.

In addition there shall be no change in light reflections and transmittance as specified on Engineering drawing shall occur.

The adhesion of the individual surface coating shall meet the requirements of para 3.4.

Test Methods: One of the following test conditions shall be defined according to the application and shown on the Engineering Drawing.

3.6.1 Condition A

As under para 3.5.1, except maintain the mounted part at 120 +/- 2 C for 30 minutes.

3.6.2 Condition B

As under para 3.5.1, except temperature as specified on Engineering drawing.

Above tests shall be omitted if parts are covered up or dismantled prior to repair oven passage.

3.7 ENVIRONMENTAL CYCLING
(FLTM BQ 104-07)

The finished part shall show no visible evidence of warpage, deformation, cracks, delamination or other failures to an extent that would affect its use in the ultimate assembly.

The finished part shall show no changes in appearance when compared with the original finished part. In addition there shall be no change in light reflectance and transmittance as specified on the Engineering Drawing.

The adhesion of the individual surface coating shall meet the requirements of para 3.4.



Test Methods: One of the following test conditions shall be defined according to the application and shown on the Engineering Drawing.

3.7.1 Condition A
(FLTM BQ 104-07, Procedure 1)

The finished part shall be mounted as assembled in the vehicle in a suitable device before testing.

For examination disregard the area of the reflex - reflector.

3.7.2 Condition B

Same as para 3.7.1, except forced ventilation oven temperature as specified on Engineering drawing.

3.8 RESISTANCE TO COLD IMPACT

After test the finished part shall show no breaks, cracks, delamination or other failures.

Test Methods: One of the following test conditions shall be defined according to the application and shown on the Engineering Drawing.

3.8.1 Condition A

The finished part shall be mounted as assembled in the vehicle in a suitable device and stored for 16 h at -40 ± 2 C. Remove part from cold box and within 5 s after removal drop a steel ball of 225 ± 5 g and approximately 38 mm in diameter onto the test sample from a height of 300 mm.

The impact shall be carried out on areas regarded as most vulnerable. Examination shall be done after conditioning to 23 ± 2 C.

3.8.2 Condition B

Same as para 3.8.1, except at 23 ± 2 C and a height of 200 mm.

3.8.3 Condition C

Same as para 3.8.2, except as specified on the Engineering Drawing.