

ENVIRONMENTAL TEST CYCLES**Application**

This method is used to determine the resistance of automotive components, interior and exterior, to environmental cycling.

Apparatus Required for Method 1**Mechanical Convection Oven**

Capable of maintaining temperatures of 80 +/- 2 °C; 90 +/- 2 °C; 122 +/- 2 °C; and 140 +/- 2 °C.

Cold Box

Capable of maintaining temperatures of -38 +/- 2 °C; and -40 +/- 2 °C.

Humidity Cabinet

Capable of maintaining temperatures of 38 +/- 2 °C, and 95 to 98 % R.H.

CASS Cabinet

Refer to FLTM BQ 105-01.

Apparatus Required for Method 2**Environmental Test Cabinet**

Microprocessor-controlled, capable of maintaining the following conditions: temperature of 80 +/- 2 °C and 90 +/- 2 °C; low temperature of -30 +/- 2 °C and -40 +/- 2 °C; 95 to 98 % R.H at 38 +/- 2 °C.

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure for Method 1 - Manual Method**Procedure 1**

1. Subject a complete part or section of a part mounted either in car position or unmounted, as defined in the applicable Engineering Materials Specification, to three cycles to the following program:

3 h at 80 +/- 2 °C
1 h at 23 +/- 2 °C and 50 +/- 5 % R.H.
3 h at -40 +/- 2 °C
1 h at 23 +/- 2 °C and 50 +/- 5 % R.H.
16 h at 38 +/- 2 °C, and 95 to 98 % R.H.

Date	Action	Revisions
2000 11 10	Revised	Editorial – no technical change A. Cockman
1991 08 22		

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Page 1 of 4

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2. After the part/specimen has cooled to room temperature, examine as defined in the applicable Engineering Material Specification.

Procedure 2

Follow the steps in Procedure 1 except that the oven temperature shall be 90 +/- 2 °C.

Procedure 3

Follow the steps in Procedure 1 except that the oven temperature shall be 90 +/- 2 °C, and the cold box temperature shall be -30 +/- 2 °C.

Procedure 4

Follow the steps in Procedure 1 except that the cold box temperature shall be -30 +/- 2 °C.

Procedure 5

Follow the steps in Procedure 1 except that the parts/specimen shall be subjected to four subsequent cycles in the following sequence:

16 h at 38 +/- 2 °C, and 95 to 98 % R.H.

4 h at -40 +/- 2 °C

4 h at 90 +/- 2 °C

Procedure 6

Follow the steps in Procedure 5 except that the cold box temperature shall be minus 30 +/- 2 °C, and the oven temperature shall be 80 +/- 2 °C.

Procedure 7

1. Subject a complete part or section of a part mounted either in car position or unmounted, as defined in the applicable Engineering Materials Specification, to three cycles to the following program:

2 h at 80 +/- 2 °C

1 h at 23 +/- 2 °C and 50 +/- 5 % R.H.

2 h at -35 +/- 2 °C

1 h at 23 +/- 2 °C and 50 +/- 5 % R.H.

16 h CASS test per FLTM BQ 105-01

2. After the part/specimen has cooled to room temperature, examine as defined in the applicable Engineering Materials Specification.

Procedure 8

Follow the steps of Procedure 7 except follow the prescribed three cycles with an additional 48 h continuous CASS test.