AUTOMOTIVE EQUIPMENT MATERIALS AND PARTS AGEING FOLLOWING A GIVEN CLIMATIC CYCLE

No use restriction

This is a translation, the French original shall be used in all cases of litigation *Date of draft translation : 20/07/2007*

FOREWORD

This document is equivalent to the document from the RENAULT SAS Group of reference D47 1309.

It must not be modified without prior consultation with the Standards Department of this Group. It is in conformity with the agreement reached between this Group and PSA PEUGEOT CITROEN in ***February 2007****.*

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RECORDS

Index	Date	Nature of modifications
OR	01/11/1981	CREATION OF THE PSA STANDARD. REPLACES THE ASSOCIATION STANDARD N° 1309
A	01/03/1985	2. EDITION: COMPLETE REVISION.
B	27/08/1996	3. EDITION: COMPLETE REVISION WITH ELIMINATION OF THE FOREWORD
C	18/10/2006	SETTING WITH THE NEW FORMALISM OF STANDARDS D. EVOLUTION OF THE TITLE AND THE § 1. , 5. AND 9.
D	18/10/2006	CORRECTION OF PROCEDURE CYCLES (§ 9.).
E	23/02/2007	ADDITION OF PRECISE DETAILS ON THE SIGNIFICANCE OF THE HYPHEN IN THE HUMIDITY BOX, IN PARAGRAPH 9

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1.OBJECT AND FIELD OF APPLICATION

The object of this method is to define the ageing climatic cycles to subject to with automotive equipment materials or parts.

2.REFERENCE DOCUMENTS

Specific chapter for the tests for PSA PEUGEOT CITROËN.

2.1.STANDARDS

A10 0153	MATERIAL TEST METHODS - DRAFTING
A10 0156	TEST REPORT - DRAFTING

2.2.REGULATIONS

Not applicable.

2.3.OTHER DOCUMENTS

Not applicable

2.4.EXPRESSION ON DOCUMENTS

Not applicable.

3.TERMINOLOGY AND DEFINITION

Specific chapter for the tests for PSA PEUGEOT CITROËN.

A dictionary (glossary) containing the main terms and their definitions used within the Division of Platforms, Techniques, and Purchases can be consulted internally via the DPTA glossary (Nectar: http://nectar.inetpsa.com). This glossary is permanently enriched.

3.1.DEFINITIONS

Not applicable.

3.2.ABBREVIATIONS

Not applicable.

4.PRINCIPLE OF THE TEST METHOD

To subject materials or the parts to be tested to one of the ageing cycles described in the procedure and to check then if there is a degradation of the mechanical, physical or appearance characteristics.

5.EQUIPMENT

5.1.CHAMBER

Allowing to carry out the cycle(s) concerned with a capacity of ± 2 °C and ± 5% of relative humidity.

5.2.CONTROLLED ENVIRONMENT CHAMBER

At 23 °C ± 2 °C and 50 % ± 5 % relative humidity.

6.PREPARING THE SOLUTIONS

Not applicable.

7.SAMPLE REPRESENTATIVENESS

Specific chapter for the tests for PSA PEUGEOT CITROËN.

The samples must be representative of the variable to be characterized. To ensure this representativeness it is necessary to know the fundamental characteristics of the studied population. The criteria of selection of samples must be specified in the Test Report (TR), in compliance with the standard A10 0156.

Contact the service PSA *DPTA/DITV/PMXP/MXP/EMR/GHTD* in order to find out the directives to be followed.

8.PREPARING THE TEST SPECIMENS

Dimensions and the number of specimens are those indicated for the determination of the characteristics before ageing.

In the absence of particular indications, the plastic parts must be tested, fixed in “vehicle” position.

9.PROCEDURE

Subject the parts or the specimens to one of the climatic cycles defined as follows:

Cycle	Duration (hours)	Temperature (°C)	Relative humidity (%)	Indications to give in documents
A	16 ± 1	40	95	D47 1309 - A
	+			
	6 ± 1	85	-	
AF	16 ± 1	40	95	D47 1309 - AF
	+			
	$3\ ^{+30\ \text{min}}_{-0\ \text{min}}$	- 20	-	
	+			
	6 ± 1	85	-	
B	16 ± 1	40	95	D47 1309 - B
	+			
	6 ± 1	100	-	
BF	16 ± 1	40	95	D47 1309 - BF
	+			
	$3\ ^{+30\ \text{min}}_{-0\ \text{min}}$	- 20	-	
	+			
	6 ± 1	100	-	
C	16 ± 1	85	95	D47 1309 - C
	+			
	6 ± 1	85	-	
CF	16 ± 1	85	95	D47 1309 - CF
	+			
	$3\ ^{+30\ \text{min}}_{-0\ \text{min}}$	- 20	-	
	+			
	6 ± 1	85	-	
D	16 ± 1	85	95	D47 1309 - D
	+			
	6 ± 1	100	-	
DF	16 ± 1	85	95	D47 1309 - DF
	+			
	$3\ ^{+30\ \text{min}}_{-0\ \text{min}}$	- 20	-	
	+			
	6 ± 1	100	-	
E	16 ± 1	40	95	D47 1309 - E
	+			
	6 ± 1	70	-	
EF	16 ± 1	40	95	D47 1309 - EF
	+			
	$3\ ^{+30\ \text{min}}_{-0\ \text{min}}$	- 20	-	
	+			
	6 ± 1	70	-	

Cycle	Duration (hours)	Temperature (°C)	Relative humidity (%)	Indications to give in documents
G	16 ± 1	40	95	D47 1309 - G
	+			
	6 ± 1	110	-	
GF	16 ± 1	40	95	D47 1309 - GF
	+			
	3 $^{+30\ min}_{-0\ min}$	- 20	-	
	+			
	6 ± 1	110	-	
H	16 ± 1	85	95	D47 1309 - H
	+			
	6 ± 1	120	-	
HF	16 ± 1	85	95	D47 1309 - HF
	+			
	3 $^{+30\ min}_{-0\ min}$	- 30	-	
	+			
	6 ± 1	120	-	
J	16 ± 1	40	95	D47 1309 - J
	+			
	6 ± 1	85	95	
JF	16 ± 1	40	95	D47 1309 - JF
	+			
	3 $^{+30\ min}_{-0\ min}$	- 20	-	
	+			
	6 ± 1	85	95	
K	240 ± 1	40	95	D47 1309 - K
	+			
	2 $^{+30\ min}_{-0\ min}$	23	50	
LF	15 ± 1	38	95	D47 1309 - LF
	+			
	5 ± 1	- 30	-	
	+			
	4 ± 1	70	-	

- To avoid the thermal shocks, the temperature change must be carried out at a speed of about 2 °C/min.
- When the water content is not specified (hyphen), the environment is without added humidity and consequently this one becomes dependent on ambient humidity (dry temperature, not controlled humidity).
- After the cycle(s), the specimens are left for 24 hours in the controlled environment chamber (5.2).
- The reference of the cycle to be made and the cycle count are given by the normative documents.
- Determine the characteristics of materials having undergone the given climatic cycles with the same methods as those used for materials as new (resistance, flexibility, elongation, bursting, etc).

10.NOTES

Specific chapter for the tests for PSA PEUGEOT CITROËN.

Not applicable.

11.EXPRESSION OF RESULTS

Note the degradation percentage (%), if it is necessary, and the possible variations in appearance.

12.TEST REPORT

Besides the obtained results, the test report must indicate:

- the reference to this method,
- the number of cycles executed,
- the references of the tested materials or parts,
- the possible degradation percentage,
- the appearance or dimension variations,
- the time before the occurrence of the observed faults,
- the procedure details that are not specified in the method, as well as the possible incidents that might have influenced the results.