

**MATERIALS AND PARTS IN THE PASSENGER COMPARTMENT
PLASTIC COATED TEXTILES, PLASTICS, HIDE TRIM
COLOUR FASTNESS TO PERSPIRATION**

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PROHIBITED FOR NEW DESIGN AND REPLACED IN THIS CASE BY NORME D47 1020*This is a translation, the French original shall be used in all cases of litigation**Date of translation : 22/11/1999***FOREWORD**

This document is in technical conformity with RENAULT méthode d'essai D47 1025.

It must not be modified without prior consultation with RENAULT.

It is in conformity with the agreement reached between the Normalisation Services of PEUGEOT S.A. and RENAULT in MARCH 1994.

1. OBJECT AND FIELD OF APPLICATION

The object of this méthode is to determine the colour fastness resistance of materials and parts in the passenger compartment to the action of perspiration from the human body.

It applies to materials such as plastic coated textiles, plastic in sheet form, hide trim as well as plastic parts in the passenger compartment.

It does not apply to textiles for which méthode d'essai D47 1022 is recommended.

It is extracted from norme NF ISO 105-E04.

2. PRINCIPLE

A test specimen of the material to be tested and a non coloured reference woven textile soaked with an acid or basic solution of perspiration are left in contact under pressure for a given time. The test specimen and non coloured reference woven textile are dried separately. The deterioration on the test specimen and the dye transfer onto the non coloured reference woven textile are assessed against the grey scale.

3. EQUIPMENT AND REAGENT**3.1. RIGID PLATES IN GLASS OR ACRYLIC PLASTIC,**

120 mm x 120 mm.

3.2. TEST APPARATUS CONSISTING OF A STAINLESS STEEL FRAME,

120 mm x 120 mm basic dimensions in which a 50 newton load is placed so that a pressure of approximately 12,5 kPa may be applied to test specimens 100 mm x 40 mm placed between two plates (3.1).

3.3. NON COLOURED REFERENCE WOVEN TEXTILES

Non coloured reference woven textiles in wool or polyacrylic or polyester or polyamide or cotton or acetate 100 mm x 40 mm, or non coloured reference woven textiles in multifibres from the same materials (6 times 17 mm) x 40 mm.

Non coloured reference woven textiles must have a canvas backing, 100 g/m² to 125 g/m² in weight and contain no dressing or residual chemical products, or chemically damaged fibres, or optical bluing.

Cotton must be bleached, other woven textiles must be cleaned but not bleached (see norme NF ISO 105-A01).

3.4 GREY SCALE,

to assess the deterioration and dye transfers onto non coloured reference woven textiles in half point steps in conformity with normes NF ISO 105-A02 and NF ISO 105-A03.

Note : *Textiles (3.3.) and grey scale (3.4.) may be obtained through ADSOL 37-39, rue de Neuilly - 92110 CLICHY.*

3.5 VENTILATED OVEN,

at $37^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

3.6 BASIC SOLUTION, FRESHLY PREPARED,

containing per litre of distilled water:

- 0,5 gram of L(+) - histidine monochlorohydrate to 1 molecule of water ($\text{C}_6\text{H}_{10}\text{ClN}_3\text{O}_2, \text{H}_2\text{O}$),
- 5 grams of sodium chloride (NaCl),
- 5 grams of disodium hydrogenphosphate to 12 molecules of water ($\text{Na}_2\text{HPO}_4, 12\text{H}_2\text{O}$).

The solution is brought to pH 8 using a decinormal solution of sodium hydroxide (NaOH).

3.7 ACID SOLUTION, FRESHLY PREPARED,

containing per litre of distilled water:

- 0,5 gram of L(+) - histidine monochlorohydrate to 1 molecule of water ($\text{C}_6\text{H}_{10}\text{ClN}_3\text{O}_2, \text{H}_2\text{O}$),
- 5 grams of sodium chloride (NaCl),
- 2,2 grams of sodium dihydrogenphosphate to 2 molecules of water ($\text{NaH}_2\text{PO}_4, 2\text{H}_2\text{O}$).

The solution is brought to pH 5,5 using a decinormal solution of sodium hydroxide (NaOH).

4. PREPARATION OF TEST SPECIMENS

Take one test specimen 100 mm x 100 mm from the material to be examined.

- For materials in sheet form (plastic coated textiles, hide trim, plastic sheets, coating, etc.), the thickness of the test specimen is that of the material.
- For bulky materials, cut the test specimen to a thickness of 1 mm to 2 mm so that the reverse side is flat and parallel to the right side.

5. METHOD OF OPERATION

- Place the test specimen on a plate (3.1.) the right side upwards.
- Immerse the piece of non coloured reference woven textile in the basic solution (3.6.).
- Remove this piece of textile from the basic solution and place in the centre of the test specimen carefully avoiding moistening the reverse of the material (textile backing, cellular material, etc. . . .).
- Place a second plate (3.1.) on the assembly then the 50 N load.
- Place the assembly in the oven (3.5.) and leave for 4 hours.
- Remove the composite test specimen from the oven, separate the test specimen from the non coloured reference woven textile and dry them in the air at a temperature lower than 60°C .

Carry out the same operations on a second test specimen with the acid solution (3.7.).

6. EXPRESSION OF RESULTS

- Assess the deterioration of the test specimen and the dye transfer onto the non coloured reference woven textile using the grey scale (3.4.) according to the details given in normes NF ISO 105-A02 and NF ISO 105-A03.
- For the test with the non coloured reference multifibre woven textile, take the worst result. If in doubt, carry out a test for confirmation with a non coloured reference woven textile (100 mm x 40 mm) of the same composition as the fibre on which an anomaly has been detected.
- Express the indices for deterioration and dye transfer from the various colours of the material (background colours, print, etc.) on the type of fibre subjected to the test.

7. TEST REPORT

As well as the results obtained, the test report must indicate:

- the reference to this méthode,
- the material references and the name of the supplier,
- the special conditions of the test,
- the operating details not specified in the method as well as any possible incidents likely to have affected the results.

8. RECORDS AND REFERENCE DOCUMENTS**8.1. RECORDS****8.1.1. CREATION**

- OR : 01/10/1978 - CREATION OF THE PSA NORME.

8.1.2. SUBJECT OF THE MODIFICATION

- G:05/10/1999 : PROHIBITED FOR NEW DESIGN AND REPLACED BY D47 1020.
- F:30/12/1997 - LONG TITLE AMENDED TO 132 CHARACTERS, FOR GEODE

8.2. REFERENCE DOCUMENTS**8.2.1. PSA DOCUMENTS****8.2.1.1. Normes**

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8.2.1.2. Others**8.2.2. EXTERNAL DOCUMENTS**

ISO 105-A01, ISO 105-A02, ISO 105-A03, ISO 105-E04

8.3. EQUIVALENT TO:

REN D47 1025

8.4. CONFORMS TO:**8.5. KEY-WORDS**