

PAINT COATINGS

DETERMINATION OF THE COLORIMETRIC INDEX

FINISHED VEHICLE

Page 1/4

NO USE RESTRICTION

This is a translation, the French original shall be used in all cases of litigation

Date of translation : 15/11/2004

1.OBJECT AND FIELD OF APPLICATION

The object of this method is to describe the mode of operation allowing the determination of the colorimetric index of the complete coating of the finished vehicle.

2.PRINCIPLE

The colorimetric index of the finished vehicle (ICV) is calculated from the colorimetric variation measured on an element of a finished vehicle and takes into account the following:

- the colour coefficient which characterises the difficulty in producing the same colour several times,
- The severity class which is representative of the appearance quality to be obtained for a considered area, it integrates the vehicle severity level in terms of the vehicle type and the area function severity level for the area considered.

3.DEFINITIONS

3.1.COLOUR COEFFICIENT (CT)

This coefficient characterises the paint coating, it does not take into account:

- the difficulty in producing the master panel several times (master panel standard deviation),
- the difficulty in duplicating the master panel colour by different suppliers (suppliers standard deviation),
- the influence of the application conditions on the colorimetric results obtained from one batch of paints (application standard deviation).

Note: *the colorimetric determination of these standard deviations allows the colour coefficient to be defined. This coefficient must be mentioned in the documents defining paint for a given colour.*

3.2.TOTAL COLORIMETRIC DEVIATION (ΔE)

The total colorimetric deviation ΔE is determined according to test method D15 5084 between the specific approved master panel and an element of the finished vehicle (or a representative test specimen).

3.3.SEVERITY CLASS (CS)

There are 3 severity classes associated with the 2 ICV thresholds giving 4 requirement levels, as defined by this method.

These requirement levels are defined by norme B15 5050 and mentioned in the SPA (see technical specifications B20 0150) corresponding to the approved paints.

DETERMINATION OF THE COLORIMETRIC INDEX	D25 5136	2/4
---	----------	-----

4.MODE OF OPERATION

Determine on an element of the vehicle the value ΔE according to test method D15 5084.

5.EXPRESSION OF RESULTS

The colorimetric index of the finished vehicle (ICV) is given by the expression:

$$ICV = CT - (CS \cdot \Delta E)$$

in which: CT is the colour coefficient (requirement fixed in the documents).
CS is the severity class (requirement fixed in the documents).
 ΔE is the total colorimetric deviation measured.

Note:

- *This procedure must be applied to a minimum of 3 different areas of the element considered. Take the average of the results obtained.*
- *In the appendix, a table giving the total colorimetric deviation of finished vehicles (ΔE) as a function of the different requirement levels as well as two examples of calculations.*

6.TEST REPORT

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

- the reference to this method,
- the severity class,
- the reference of the element examined,
- operational details not specified in the method as well as any incidents likely to have affected the results.

DETERMINATION OF THE COLORIMETRIC INDEX	D25 5136	3/4
--	-----------------	-----

APPENDIX**COLORIMETRIC TOLERANCE TABLE**

This is defined as a total colorimetric deviation (ΔE) in relation to the definition of the colour.

REQUIREMENT LEVELS	COLORIMETRIC INDEX FINISHED VEHICLE	3	3	6	6
	SEVERITY CLASSES	1	2	2	4
COLOUR COEFFICIENT (CT)		ΔE LIMIT (As a function of CT and of the requirement levels)			
	8	5	2,5	1	0,5
	9	6	3	1,5	0,75
	10	7	3,5	2	1
	11	8	4	2,5	1,25
	12	9	4,5	3	1,5
	13	10	5	3,5	1,75
	14	11	5,5	4	2
	15	12	6	4,5	2,25

CALCULATION EXAMPLES

EXAMPLES	REQUIREMENT	ΔE (MERCURY)	ICV (CALCULATED)	OBSERVATIONS
1	CT = 10 CS = 2 ICV \geq 6	1,63	ICV = 10 - (2.1,63) = 6,74	This colour is in conformity with the requirements
2	CT = 12 CS = 2 ICV \geq 6	3,25	ICV = 12 - (2.3,25) = 5,5	This colour is not in conformity with the requirements

7.RECORDS AND REFERENCE DOCUMENTS

7.1.RECORDS

7.1.1.CREATION

- OR: 01/05/1984 – CREATION OF THE NORME

7.1.2.SUBJECT OF THE MODIFICATION

- A: 18/04/1997 – INTRODUCTION TO IDEM (French only)
-

7.2.REFERENCE DOCUMENTS

7.2.1.PSA DOCUMENTS

7.2.1.1.Normes

B15 5050, B20 0150, D15 5084.

7.2.1.2.Others

7.2.2.EXTERNAL DOCUMENTS

7.3.EQUIVALENT TO:

7.4.CONFORMS TO:

7.5.KEY-WORDS