

COATINGS OF PAINTINGS
MEASURE OF GOOSE FLESH AND CLEARNESS OF IMAGE
ASPECT MEASUREMENT DUAL WAVE SCAN Erreur ! Signet non défini.

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No use restriction*This is a translation, the French original shall be used in all cases of litigation**Date of draft translation : 05/12/2008***FOREWORD****WARNING**

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*This document, as an experimental standard, is applicable and submitted for observations for a duration of **5 months**. If no comments are received by 31/12/2007 at the address : normesExp@mpsa.com the content of this document shall be confirmed.*

DRAFT TRANSLATION

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RECORDS

Indice	Date	Nature des modifications
OR	28/06/2007	CREATION OF THE NORM.
A	27/07/2007	SUPPRESSION OF THE PP AND PN PARAMETERS IN THE WHOLE OF THE STANDARD. EVOLUTION OF THE VALUES OF UNCERTAINTIES (§ 11.).

PARTICIPANTS

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1.OBJECT AND FIELD OF D'APPLICATION

The purpose of this method is to describe the measurement of the aspect (goose flesh, clearness of image,...) of a film of finished painting or a sub-layer (cataphoresis, basecoat powders...).

It applies to plane surfaces or convex whose radius of curvature is higher than 500 millimetres.

2.REFERENCE DOCUMENTS

2.1.NORMS

[A10 0156](#)

TEST REPORTS - REDACTION

2.2.REGLEMENTATIONS

Not applicable.

2.3.OTHERS DOCUMENTS

MXP_PEI07_0103 PLANS NAP VEHICULE WSC DUAL (Exemple : Plan NAP C3 WSC Dual)

MXP_PEI07_0302 MODE D'EMPLOI WAVE SCAN DUAL

MXP_PEI07_0308 MODE D'EMPLOI LOGICIEL AUTOCHART RAPPORT QC

3.TERMINOLOGY AND DEFINITION

A dictionary (glossary) of the main terms and their definitions used within the activities of the Department "Amont Technico-Industriel" can be consulted in-house via the glossary [Nectar](http://nectar.inetpsa.com) (<http://nectar.inetpsa.com>). This glossary is constantly up-dated.

3.1.DEFINITIONS

For the requirements of this norme, the following terms are defined. :

LW (Long Wave) : Range of big wavelengths. They are determining in the perception of the goose flesh.

SW (Short Wave) : Range of little wavelengths entering in the perception of the clearness of image.

Dullness (Du) : Measure quantity of opening diffused by surface.

Wa, Wb, Wc, Wd and We are decompositions of the frame of painting by wavelength.

Wa : Scale of wavelength going from 0,1 to 0,3 mm.

Wb : Scale of wavelength going from 0,3 to 1 mm.

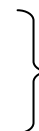


Microstructure of the film painting

Wc : Scale of wavelength going from 1 to 3 mm.

Wd : Scale of wavelength going from 3 to 10 mm.

We : Scale of wavelength going from 10 to 30 mm.



Macrostructure of the film painting

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3.2.ACRONYMS

For the requirements of this norme, the following acronyms are defined. :

LW	: Long Wave
SW	: Short Wave
Du	: Dullness

4.PRINCIPLE

The test is carried out with an apparatus with rollers provided with a laser profilometer and a camera enabling him to take measurements on a profile of 5,10 or 20 cm.

A receiver measures the variation of quantity of reflected light according to the topology of surface.

One thus obtains an optical profile of surface.

5.EQUIPMENT

5.1.WAVE SCAN DUAL

See appendix 1.

It allows the measurement of aspect of a painted surface.

It is provided by limited-liability company BYK GARDNER, Lausitzer Strasse 8 D-82538 Geretsried, Germany.

A cary case is delivered with the tester. It includes/understands the following elements:

- 1 Station of reception of the apparatus as well as a mount of protection,
- 1 Pad of assembly reference parts with certificate (réf N° WGB-4843),
- 1 software Car-chart (CD) for handling and data analysis (réf N° WGB-4809),
- 1 Station of connection with a cord of interface USB for connection with a PC (réf N° WGB-4841),
- 2 Packs of refillable batteries Li-Ion (réf N° WGB-4842),
- 1 Battery tray support for alkaline piles (Type AA) or battery refillable Li-Ion,
- 2 Instruction manuals (Appareil and Logiciel Car-Chart).

5.2.RAGS

The rags must be soft, lint-free.

Example: nonwoven rags ESSUINET white 50 GR/m2 of pellet-size 610 X 320 mm (Assembly reference parts PSA: P935 851.982) - supplier: EIF street of Pierre, 93104 MONTREUIL Cedex.

6.PREPARATION OF THE SOLUTIONS

Not applicable.

7. REPRESENTATIVENESS OF SAMPLES

The test specimens or samples must be representative of the scale to be characterised. To provide this representativeness, it is necessary to find out the basic characteristics of the population studied. The selection criteria for the test specimens or samples must be specified in the Test Report (RE), in conformity with norme [A10 0156](#).

In case of doubt about sampling, contact PSA service *DTI/DITV/PMXP/MXP/PEI/DIPF* in order to know the directives to be followed.

8. PREPARATION OF THE TEST SPECIMENS

The test must be carried out on a clean surface, dry and of particle, score mark and any stain (dust, finger mark, ...).

Surface to be examined must have dimensions higher to 80 mm X 130 mm, to be planar or convex with a radius of curvature higher than 500 Misters.

In the case of test-tubes or of vehicles having undergone a deterioration of the surface quality after cooking of painting (example: sludge of dust, etc....), to wipe with a soft rag (5.2.) or fettle surface with a water-logged soft rag and to wipe with a dry soft rag (5.2.).

The temperature of surface to be measured must be included between 15 °C and 35 °C.

9. METHOD OF OPERATION

9.1. PREAMBLE

The apparatus Wave Scan Dual (5.1.) must be beforehand configured by the trade painting (PMXP) according to the object to measure (au préalable to read the directions for use of Wave Scan Dual Réf: MXP_PEI07_0302).

The screens described in this paragraph are posted on the screen of Wave Scan Dual.

- Put the apparatus (5.1.) moving while pressing on the roller (scroll wheel) or on the button of release device of measurement (operate short prop).



- The principal menu appears:

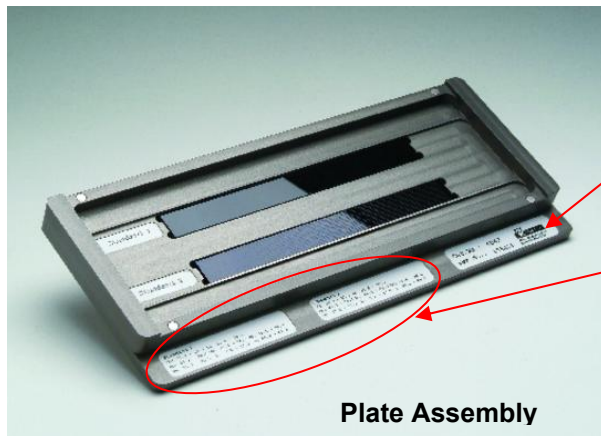


Note: Before any use of the apparatus for plug of measurement, it is IMPERATIF to make sure that control and the checking (9.2) were carried out.

9.2.CONTROL AND VERIFICATION OF THE TESTER

This handling is to be carried out **DAILY**.

- Take the pad of assembly reference parts provided (see photo below) by BYK Gardner.
- Check that the pad of selected assembly reference parts has the same serial number as the apparatus.



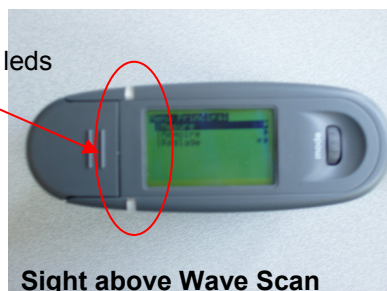
Number of the Pad of Assembly

Tolerances provided by BYK Gardner

Plate Assembly

- Start the tester (5.1.).
- Select "measurement" with the scroll/thumb wheel then to validate with the button Operate (9.1).
- Select the "standard" program then to validate.
- Check that surface to be measured is clean. So not, to wipe it with a soft rag (5.2.).
- Affix in a uniform way the apparatus on surface to be measured.
- Press on the button of release device of measurement (button Operate (9.1)).
- Wait until the 2 leds green located on both sides screen are lit.
- Make roll the tester (5.1.) with a pressure uninterrupted of the Operate button until the aural signal or the extinction of the 2 leds green.
- If warning light ignites, to remake measurement.
- Take all the measurements requested by the tester (5.1.).
- Check that the results obtained are in the tolerances provided by the manufacturer:
 - If so, the checking is in conformity and finished, you can carry out the measurement of the test-tubes.
 - So not, to start again this handling by cleaning the pad of assembly reference parts once again.
- If the second checking is not in conformity, to take IMPERATIVEMENT contact with Byk Gardner to know the procedure to follow.

Positioning of the 2 leds



Sight above Wave Scan



Ignition of the 2 leds

9.3.MEASURE TEST-TUBES

- Start the tester (5.1.).
- Select "measurement" with the scroll/thumb wheel then to validate with the Operate button.
- Select the program appropriate to your measurements then to validate.
- Wipe with a soft rag (5.2.) the bracket to be measured (part of a vehicle or a slab).
- Affix in a uniform way your apparatus on surface to be measured.
- Press on the button of release device of measurement (Operate button).
- Wait until the 2 leds green located on both sides screen are lit.
- Make roll the tester (5.1.) with a pressure uninterrupted of the Operate button until the aural signal or the extinction of the 2 leds green.
- If warning light ignites, to remake measurement.
- Take all the measurements requested by the tester (5.1.) according to the selected program.
- Once measurements carried out, pose the tester (5.1.) on its station of reception (see photo attached).



Station of reception

The station of reception allows:

- The frequency response function of the programs of the software towards the apparatus.
- The frequency response function of measurements of the apparatus towards the software.
- Suppression of the measurements stocked in the apparatus.
- The recharging of the batteries.

Measurements are stocked in the apparatus (Storage capacity going up to 2000 measurements).

10.REMARKS

During a measurement carried out on a vehicle, it is important and IMPERATIF to refer to drawing NAP VEHICULE WSC DUAL of the vehicle measured (example: for the measurement of the vehicle CITROEN C3 to refer to drawing NAP C3 WSC Dual Réf: MXP_PEI07_0103).

It should be noted that the lid of the tiles (Pad of assembly reference parts) is used for cleaning of the castor of the measurement device.

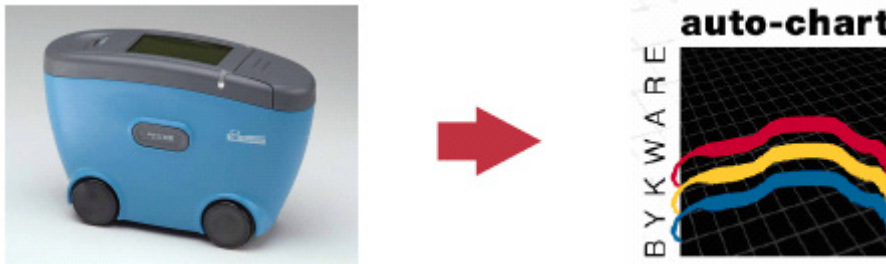
11.EXPRESSION OF THE RESULTS

The measured sizes are expressed by the figures given by the apparatus for a scan of 10 cm.

The parameters which one wishes to see appearing on the screen are LW and the SW.

The parameters of, Wa, Wb, WC, Wd, We, Longwave and Shortwave are recorded automatically in the apparatus.

The results are published by the means of the software Car-Chart (au préalable reading the directions for use of Logiciel Car-Chart Rapport QC Réf: MXP_PEI07_0308).



- The value of goose flesh is obtained by the value of LW.

The LW values are generally located between 0 and 100.

The lower the value of LW is, the more the aspect of measured surface is better.

U NCERTAINTIES

The values of uncertainty (reproducibility) concerning the measurement of LW are:

- ± 1 for $LW \leq 4$
- ± 2 for $LW > 4$

12.TEST REPORT

The format and minimum contents of the test report are defined in the norm [A10 0156](#).

In addition to the results obtained, the report/ratio of test must indicate:

- Assembly reference parts of this method,
- The complete identification of the measured sample (vehicle or pad),
- The name of the measured hue,
- The strand of setting in painting,
- The serial number of the vehicle,
- The measuring point (facility measured on vehicle or pad),
- The date of measurement, control,
- The name of the operator,
- Operational details not envisaged in the method as well as the possible incidents likely to have acted on the results

Note: Within the framework of the use of software NAP WSC Dual, all this information appears in it.

Appendix 1

Wave scan dual



Wave scan dual



Dual Wave scan



Wave scan dual sur son socle

Appendix 2

Adresse of supplier BYK Gardner

