



INSPECTION REPORT

Refers to QUALANOD Specifications clause 10 – Approval of new processes and products, and QUALANOD General Regulations VI – Procedure for the approval of new processes and products

Instructed by COMPANY
ADDRESS
ADDRESS
COUNTRY

Inspection No. XXXXX

Laboratory No. XXXXX

Name of the system XXXXX

Type of product XXXXX

Type of inspection Granting
 Renewal
→please indicate the **QND-Number:**
QND-.....

→please indicate any **changes** made since the **initial application:**
.....
.....
.....
.....
.....
.....

Date of inspection XXth to XXth MONTH 20XX

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1 Introduction

It is important that new processes and products which are used in the production of anodized aluminium for external architectural applications are tested and approved by QUALANOD. This is because the effects of weathering can be long term and are very variable, and cannot be effectively simulated by laboratory tests. The testing and approval of new processes and products for use in the production of anodized aluminium for other applications is not necessary if effective laboratory tests or simulations of service conditions can be applied.

A new process or product requires testing and approval if it could affect the outdoor service performance of the anodized aluminium. This includes new processes and products for anodizing and sealing but can include other new processes and products applied after anodizing.

Licensees that are licensed for products of clause 12, architectural anodizing, shall use only processes and products for anodizing and subsequent processes in an anodizing line that are well-established for use in anodizing lines or have current approval from QUALANOD.

Provisional approval may be granted only after the successful completion of the laboratory tests (stage B) and one year's outdoor exposure, and is valid for two years after which it lapses.

Final approval may be granted only after the successful completion of the three years' outdoor exposure (stage C), and is valid for three years. It may be renewed every three years.

The applicant may apply for a renewal of the final approval. For the renewal to be granted, stages A, B and D have to be successfully completed. Outdoor exposure testing is normally not necessary. Stages A and D comprise the review of the application and the evaluation of the test results by the QUALANOD Technical Committee.

This document is the QUALANOD report form for the results of the laboratory testing which applies to new processes and products seeking approval and ones seeking renewal of their approval. New processes and products seeking approval for the first time also undergo outdoor exposure testing as described in the QUALANOD General Regulations VI.

The laboratory (.....) has been authorized to carry out the assessment of new processes and products according to the QUALANOD Specifications and General Regulations VI. The total number of test specimens shown in table 1 varies depending on whether outdoor exposure testing is required or not.



2 Specimen Preparation

The specimens shall be prepared in one of the following:

- In the testing institute's laboratory or pilot line
- In the applicant's laboratory or pilot line under the supervision of a person representing the testing institute
- In a sub-licensee's laboratory or pilot line under the supervision of a person representing the testing institute
- In a sub-licensee's production line under the supervision of a person representing the testing institute. This is permitted only for processes or products that already have final approval from QUALANOD

Special care should be paid to the preparation of specimens; they shall be free of defects. Due to the fact that the tests are comparative between two processes, it is important that the chemical composition and microstructure of the specimens are the same. The specimens shall come from the same metal casting batch or coil. The applicant shall provide an analysis of the chemical composition of the metal if so requested by the QUALANOD technical committee.

Specimens produced with the new process or product are compared with standard specimens produced using conventional methods.

The test specimens shall be as follows:

- Test specimens shall be AA 6063 or 6060 flat-panel extrusions or AA 5005 sheet with a thickness of about 2 mm. The specimens for outdoor exposure shall have dimensions preferably 200 mm by 100 mm but not less than 150 mm by 100 mm. The specimens for the acetic acid salt spray test shall have dimensions not less than 150 mm x 70 mm x 1 mm.
- Test specimens of the required size shall be cut from larger areas of material using a guillotine or a saw before the application of the surface treatment processes. Any burrs shall be removed without damaging adjacent areas of the surfaces.
- Test specimens shall be marked for identification purposes before the application of the surface treatment processes. The marking shall be made as small as is practical and on those areas of the specimens that are not subjected to visual assessment. Specimens for outdoor exposure or salt spray testing shall have marking that is durable and remains legible over the whole period of the test. Stamping is a suitable method.



Unless the QUALANOD technical committee decides otherwise, the processing conditions for the standard specimens shall be as follows:

- Specimens shall be subject to surface preparation E6 as described in ISO 7599.
- Separate specimens shall be anodized to class AA 15 and class AA 20, each class in the same anodizing batch.
- Anodizing shall be carried out in a sulfuric acid solution containing 180 ± 2 g / l free sulfuric acid and 5 to 10 g / l dissolved aluminium made up with deionized water, held at $20 \text{ }^{\circ}\text{C} \pm 0.5 \text{ }^{\circ}\text{C}$, and agitated by air agitation or solution recirculation. The current density shall be 1.5 ± 0.1 A / dm².
- Different specimens of each class shall be clear-anodized aluminium and colour-anodized aluminium coloured to a dark bronze (C34) using a tin-based electrolyte.
- Specimens shall be sealed in deionized water at a temperature no lower than $96 \text{ }^{\circ}\text{C}$ for 3 min per micrometer of coating thickness. An anti-smut additive shall be used.

Test specimens representing the new process or product shall be produced using the same processing conditions as for the standard specimens except those conditions associated with the new process or product.

Specimens for laboratory tests and for outdoor exposure (not required for a renewal) shall be produced at the same time. This means that there will be eight sets of specimens (two thickness classes x two colours x two processes) which will go forward for testing. Each set shall comprise at least 21 specimens and one specimen retained for control purposes. Control specimens shall be made available to QUALANOD technical committee as requested to determine changes in properties, e.g. colour, as a result of exposure of test specimens. The number of specimens required is summarized in table 1.

Before applying laboratory or outdoor exposure tests, the average thickness of the coatings of all specimens shall be measured following the procedures of the current edition of the Specifications. Additionally, the specular gloss at 60° of specimens indicated in table 1 shall be measured following the procedures of the current edition of the Specifications. These thickness and gloss data shall be sent to the QUALANOD secretariat.

Table 1 - Distribution of test specimens

<u>Test</u>	<u>Number of specimens per set</u>	<u>Total number of specimens</u> (2 thickness classes, 2 colours, 2 processes)
Control	1	8**
Mass loss test	3	24
Dye spot, admittance and surface abrasion test	3	24
Acetic acid salt spray test (AASS)	3	24**
Outdoor exposure Site A (e.g. Genoa)	One year exposure: 3 Three years exposure: 3	48**
Outdoor exposure Site B (e.g. Hoek van Holland)	One year exposure: 3 Three years exposure: 3	48**
Total amount	22	176

** : The specular gloss at 60° angle of incidence shall be measured for these specimens.

Remark:

According to the QUALANOD General Regulations VI section 8.1 each test is carried out on triplicate samples.

Test specimens before testing and control specimens shall be safely stored in a room with a controlled temperature and a relative humidity of 65% or less, or in a desiccator, or sealed in plastic bags with desiccant.

It is important to maintain specimen data records particularly to prevent confusion over the processing conditions used for outdoor exposure specimens. The specimen marking and the records shall use the following identification system of two letters and two numbers:

- S indicates the standard process. N indicates the new process or product.
- 15 indicates AA 15. 20 indicates AA 20.
- C indicates a coloured specimen. U indicates an uncoloured specimen.
- The final number, 1 to 22, identifies the individual specimen in the set.

Thus, N15C9 would identify the ninth specimen of the set of coloured AA 15 specimens produced using the new process or product.

From MONTH XXth until MONTH XXth YEAR INSPECTOR was in the laboratory of XXXXX COMPANY in cooperation with XXXXX COMPANY to carry out the test panel preparation. A

product and process recertification was applied as described by the supplier. The technical data sheets are delivered in digital form during the on site test panel preparation. The data sheets are from MONTH YEAR (TDS STANDARD PROCESS and NEW PROCESS). The following process cycle was used:

Table 2 - Description of the process cycle

Step	Product Name	Time t in min. / Temperature T in °C	Concentration or Conductivity
1 Degreasing	XXXX	XX / XX	XXX g / l
2 Rinsing	Tap water	XX / XX	XXX µS / cm
3 Etching	XXXX	XX / XX	XXX g / l
4 Rinsing	Tap water	XX / XX	XXX µS / cm
5 Deoxidizing	XXXX	XX / XX	XXX g / l
6 Rinsing	Tap water	XX / XX	XXX µS / cm
7 Rinsing	DI- water	XXX / XXX	XXX µS / cm
8 Anodizing	XXXX	XX min / µm XXX V	XXX g / l
9 Rinsing	Tap water	XXX / XXX	XXX µS / cm
10 Rinsing	DI- water	XXX / XXX	XXX µS / cm
11 Coloring	XXXX	XX min / µm XXX V	XXX ml / l
12 Sealing	XXXX	XX min / µm XXX V pH XXX / XX °C	XXX ml / l
13 New process or product	XXXX	Give process parameters that vary from those of the reference process	

The test plates were prepared in triplicate. The used alloy was EN AW 6060. Plates in the thickness class 15 and 20 µm in natural and colored dark bronze were prepared.



2.1 Laboratory test methods

The QUALANOD specifications clause 12 prescribe the following test methods for the assessment of new products and new processes:

- Measurement of coating thickness according to section 9.2 of the QUALANOD specifications (ISO 2360, eddy current)
- Mass loss test with predip according to section 9.3.1 of the QUALANOD specifications (ISO 3210, test solution B method 2)
- Dye spot test according to section 9.3.3 of the QUALANOD specifications (ISO 2143)
- Admittance test according to section 9.3.4 of the QUALANOD specifications (ISO 2931)
- Acetic acid salt spray test (AASS) according to section 9.5 of the QUALANOD specifications (ISO 9227 (1000 h) with evaluation of the test results according to ISO 8993)
- Abrasion test (manual method) according to section 9.6.1 of the QUALANOD specifications

Remark:

All values for the measured coating thickness are an average of three single measurements.

3 Sample Details

3.1 Reference Hot Water Sealing STANDARD PROCESS/PRODUCT (S)

<u>Label / No.:</u>	<u>Thickness:</u>	<u>Colour</u>	<u>Test:</u>
S15U1	15 µm	Natural (C0)	Weight Loss Test
S15U2			
S15U3			
S15C1	15 µm	Dark Bronze (C34)	Weight Loss Test
S15C2			
S15C3			
S20U1	20 µm	Natural (C0)	Weight Loss Test
S20U2			
S20U3			
S20C1	20 µm	Dark Bronze (C34)	Weight Loss Test
S20C2			
S20C3			
S15U4	15 µm	Natural (C0)	Admittance / Dye Spot / Abrasion Test
S15U5			
S15U6			
S15C4	15 µm	Dark Bronze (C34)	(Admittance) / Abrasion Test
S15C5			
S15C6			

<u>Label / No.:</u>	<u>Thickness:</u>	<u>Colour</u>	<u>Test:</u>
S20U4	20 µm	Natural (C0)	Admittance / Dye Spot / Abrasion Test
S20U5			
S20U6			
S20C4	20 µm	Dark Bronze (C34)	(Admittance) / Abrasion Test
S20C5			
S20C6			
S15U7	15 µm	Natural (C0)	Acetic Acid Salt Spray Test (AASS)
S15U8			
S15U9			
S15C7	15 µm	Dark Bronze (C34)	Acetic Acid Salt Spray Test (AASS)
S15C8			
S15C9			
S20U7	20 µm	Natural (C0)	Acetic Acid Salt Spray Test (AASS)
S20U8			
S20U9			
S20C7	20 µm	Dark Bronze (C34)	Acetic Acid Salt Spray Test (AASS)
S20C8			
S20C9			

3.2 NEW PROCESS/PRODUCT (N)

<u>Label / No.:</u>	<u>Thickness:</u>	<u>Colour</u>	<u>Test:</u>
N15U1	15 µm	Natural (C0)	Weight Loss Test
N15U2			
N15U3			
N15C1	15 µm	Dark Bronze (C34)	Weight Loss Test
N15C2			
N15C3			
N20U1	20 µm	Natural (C0)	Weight Loss Test
N20U2			
N20U3			
N20C1	20 µm	Dark Bronze (C34)	Weight Loss Test
N20C2			
N20C3			
N15U4	15 µm	Natural (C0)	Admittance / Dye Spot / Abrasion Test
N15U5			
N15U6			
N15C4	15 µm	Dark Bronze (C34)	(Admittance) / Abrasion Test
N15C5			
N15C6			



<u>Label / No.:</u>	<u>Thickness:</u>	<u>Colour</u>	<u>Test:</u>
N20U4	20 µm	Natural (C0)	Admittance / Dye Spot / Abrasion Test
N20U5			
N20U6			
N20C4	20 µm	Dark Bronze (C34)	(Admittance) / Abrasion Test
N20C5			
N20C6			
N15U7	15 µm	Natural (C0)	Acetic Acid Salt Spray Test (AASS)
N15U8			
N15U9			
N15C7	15 µm	Dark Bronze (C34)	Acetic Acid Salt Spray Test (AASS)
N15C8			
N15C9			
N20U7	20 µm	Natural (C0)	Acetic Acid Salt Spray Test (AASS)
N20U8			
N20U9			
N20C7	20 µm	Dark Bronze (C34)	Acetic Acid Salt Spray Test (AASS)
N20C8			
N20C9			



4 RESULTS

4.1 Weight Loss Test according to QUALANOD Specifications 9.3.1

This test assesses the ability of the surface of an anodic oxidation coating to resist chemical attack by an acid. This test shall be carried out as specified by ISO 3210 method 2 using test solution B, and which includes the prior acid treatment in a nitric acid solution.

The mass loss test shall be carried out not more than 2 weeks after sealing.

4.1.1 Test conditions and equipment

- Solution 1: Aqueous solution with nitric acid (470 ± 15 g / l)
- Solution 2: Aqueous solution with phosphoric acid (35 ml / l)
- Immersion in solution 1 for 10 min. at 19 ± 1 °C
- Immersion in solution 2 for 13 min. at 38 ± 1 °C

4.1.2 Requirements according to the QUALANOD Specifications

- The maximum permissible loss of mass shall be 30.0 mg / dm²

4.1.3 Test Results Weight Loss Test according to QUALANOD Specifications 9.3.1

Class 15 µm

Sealing System	Color	Coating thickness [µm]	Result 1 [mg/dm ²]	Result 2 [mg/dm ²]	Result 3 [mg/dm ²]	Average [mg/dm ²]	Rating
S STANDARD PROCESS	C0						
	C34						
N NEW PROCESS	C0						
	C34						

Class 20 µm

Sealing System	Color	Coating thickness [µm]	Result 1 [mg/dm ²]	Result 2 [mg/dm ²]	Result 3 [mg/dm ²]	Average [mg/dm ²]	Rating
S STANDARD PROCESS	C0						
	C34						
N NEW PROCESS	C0						
	C34						



4.2 Dye Spot Test according to QUALANOD Specifications 9.3.3

This test provides an assessment of the absorptive power of the outer surface of anodic oxidation coatings, which is reduced by sealing. The absorptive power shall be determined in accordance with ISO 2143. The test is applicable only to clear and light-coloured anodized aluminium.

The chemical supplier's instructions to prepare the test solutions shall be followed. If the colorant solutions described in the standard ISO 2143 are stored properly, they will remain stable for up to two years. However, their pH values should be checked every 3 months. If the pH of a solution is outside the range prescribed by the chemical supplier, then it should be corrected following the chemical supplier's instructions.

4.2.1 Test conditions and equipment

- Exposure time = 1 min per solution (at 23 °C)
- Solution 1: Acid solution B (H_2SiF_6 2.5%)
- Solution 2: Color solution A (Sanodye Blue 2LW) at pH 5.0 ± 0.5
- Cleaning agent: Magnesium Oxide

4.2.2 Requirements according to the QUALANOD Specifications

- The rating shall not exceed a value of 2



4.2.3 Test Results Dye Spot Test according to QUALANOD Specifications 9.3.3

Class 15 µm

Sealing System	Color	Coating thickness [µm]	Sample 1	Sample 2	Sample 3	Rating
S STANDARD PROCESS	C0					
N NEW PROCESS	C0					

Class 20 µm

Sealing System	Color	Coating thickness [µm]	Sample 1	Sample 2	Sample 3	Rating
S STANDARD PROCESS	C0					
N NEW PROCESS	C0					



4.3 Admittance Test according to *QUALANOD Specifications 9.3.4*

This test measures the electrical admittance of the whole thickness of the anodic oxidation coating, which is reduced by sealing. The admittance shall be determined in accordance with ISO 2931. This test is not applicable to cold sealed parts and to alloys containing more than 2 % of silicon, 1.5 % of manganese or 3 % of magnesium.

The acceptance limits for the admittance test that are applied to uncoloured finishes are not applicable to electrolytically coloured parts in medium bronze, dark bronze and black. Those are finishes with an L* value less than about 60 on the CIE 1976 L* a* b* scale.

4.3.1 Test conditions and equipment

- Temperature = 25 °C
- Time = 2 min
- Equipment: Anotest FISCHER
- Solution: Aqueous K₂SO₄ 3.5 %
- The test shall be conducted no later than 48 hours after the sealing process

4.3.2 Requirements according to the *QUALANOD Specifications*

- The acceptance limit for the corrected admittance shall be 20 µS

4.3.3 Test Results Admittance Test according to QUALANOD Specifications 9.3.4

Class 15 µm

Sealing System	Color	Coating thickness [µm]	Sample 1 [µS]	Sample 2 [µS]	Sample 3 [µS]	Average [µS]	Limit [µS]	Rating
S STANDARD PROCESS	C0						20	
N NEW PROCESS	C0						20	

Class 20 µm

Sealing System	Color	Coating thickness [µm]	Sample 1 [µS]	Sample 2 [µS]	Sample 3 [µS]	Average [µS]	Limit [µS]	Rating
S STANDARD PROCESS	C0						20	
N NEW PROCESS	C0						20	

4.4 Acetic Acid Salt Spray test according to QUALANOD Specifications 9.5 AASS and General Regulations VI 8.2

The AASS test shall be performed as specified in ISO 9227. This method is not suitable for unsealed anodic oxidation coatings.

The corrosivity of the salt spray cabinet shall be checked following the method for evaluating cabinet corrosivity specified in ISO 9227. During permanent operation, the time interval between corrosivity checks shall not be more than three months. The test report shall include the date of the last corrosivity check. The duration of the test shall be 1000 h. The specimens shall not be cleaned during exposure. Visual examination (including photography) of the test specimens to make a subjective evaluation of the degree of deterioration may be carried out after 500 h and/or 750 h as well as after 1000 h. If such an examination is carried out, the results shall be included in the test report. On completion of the test, the specimens shall be cleaned and the corrosion rated following the method specified in ISO 8993. The TC evaluates the results after receiving the test report.

4.4.1 Test Results

Date of last corrosivity check

Chart-rating results for pitting corrosion using the rating system of ISO 8993

Class 15 µm

Sealing System	Color	Coating thickness [µm]	Sample 1	Sample 2	Sample 3
S STANDARD PROCESS	C0				
	C34				
N NEW PROCESS	C0				
	C34				

Class 20 µm

Sealing System	Color	Coating thickness [µm]	Sample 1	Sample 2	Sample 3
S STANDARD PROCESS	C0				
	C34				
N NEW PROCESS	C0				
	C34				

Results of visual examination (if carried out)



4.5 Abrasion Test according to QUALANOD Specifications 9.6.1

This method assesses the resistance to wear of the surface of an anodic oxidation coating (surface abrasion resistance). It is based on Mohs's principle that a substance will be scratched only by a material harder than itself. The surface abrasion resistance of an anodic coating is evaluated by using a glass-coated abrasive paper to determine whether or not the coating is harder than the glass-coated abrasive paper.

The test is applicable to anodic oxidation coatings produced by sulfuric acid-based anodizing. It is not applicable to anodic oxidation coatings produced by hard anodizing or integral colouring methods.

The required equipment comprises validated glass-coated abrasive paper as strips 12 mm wide and 150 to 200 mm long and a resilient support for the paper during the test, 6 mm to 8 mm thick and approximately 30 mm wide and 40 mm long. The hardness of the support shall be 30 to 70 International Rubber Hardness Degrees (IRHD). A rubber or soft-plastic pencil eraser can be suitable.

To perform the test, wrap the glass-coated paper round the resilient support with the abrasive side facing outwards. Hold the paper tightly in place and keep the abrasive strip against the anodic oxide surface. Perform 10 double strokes with an amplitude of 25-30 mm. It is important that the abrasive paper lies flat on the anodic oxide surface. After 10 double strokes examine the part of the abrasive paper which has been in contact with the anodic oxidation coating.

If the anodic oxidation coating is harder than the abrasive, the paper slips easily across the surface and the coating is merely burnished. If the abrasive is harder than the coating, a definite resistance is felt as the abrasive bites into the coating. The coating is degraded and a significant quantity of dense, chalky white powder is deposited on the abrasive paper. A light powder deposit not filling completely all the spaces between the abrasive

particles, can indicate the removal of a very thin, superficial sealing smut. If in doubt, wipe the tested area clean with a dry cloth, locate a fresh area of abrasive paper round the support and test again in the original area.

4.5.1 Test conditions and equipment

- Validated glass coated abrasive paper
- Rubber with hardness between 30 and 70 IRHD

4.5.2 Requirements according to the QUALANOD Specifications

- The abrasive paper shall not exhibit a dense deposit of chalky white powder

4.5.3 Test Results

Class 15 µm

Sealing System	Color	Coating thickness [µm]	Sample 1	Sample 2	Sample 3	Rating
S STANDARD PROCESS	C0					
	C34					
N NEW PROCESS	C0					
	C34					

Class 20 µm

Sealing System	Color	Coating thickness [µm]	Sample 1	Sample 2	Sample 3	Rating
S STANDARD PROCESS	C0					
	C34					
N NEW PROCESS	C0					
	C34					



5 CONCLUSION

The process or product of the current application has been tested as prescribed in the QUALANOD Specifications clause 10 and General Regulations VI.

01/06/2020

Signature
Testing Institute

Signature
Testing Institute

6 Image documentation

Image 1 – Reference system (S) 15 µm C0 after the weight loss test
(section 9.3.1 of the QUALANOD specifications)

Image 2 – Reference system (S) 15 µm C34 after the weight loss test
(section 9.3.1 of the QUALANOD specifications)

Image 3 – Reference system (S) 20 µm C0 after the weight loss test
(section 9.3.1 of the QUALANOD specifications)

Image 4 – Reference system (S) 20 µm C34 after the weight loss test
(section 9.3.1 of the QUALANOD specifications)

Image 5 – New product or process (N) 15 µm C0 after the weight loss test
(section 9.3.1 of the QUALANOD specifications)

Image 6 – New product or process (N) 15 µm C34 after the weight loss test
(section 9.3.1 of the QUALANOD specifications)

Image 7 – New product or process (N) 20 µm C0 after the weight loss test
(section 9.3.1 of the QUALANOD specifications)

Image 8 – New product or process (N) 20 µm C34 after the weight loss test
(section 9.3.1 of the QUALANOD specifications)

Image 9 – Reference system (S) 15 µm C0 after the Dye Spot, Admittance and Abrasion test
(section 9.3.3 / 9.3.4 / 9.6.1 of the QUALANOD specifications)

Image 10 – Reference system (S) 15 µm C34 after the Dye Spot, Admittance and Abrasion test
(section 9.3.3 / 9.3.4 / 9.6.1 of the QUALANOD specifications)

Image 11 – Reference system (S) 20 µm C0 after the Dye Spot, Admittance and Abrasion test
(section 9.3.3 / 9.3.4 / 9.6.1 of the QUALANOD specifications)

Image 12 – Reference system (S) 20 µm C34 after the Dye Spot, Admittance and Abrasion test
(section 9.3.3 / 9.3.4 / 9.6.1 of the QUALANOD specifications)

Image 13 – New product or process (N) 15 µm C0 after the Dye Spot, Admittance and Abrasion test
(section 9.3.3 / 9.3.4 / 9.6.1 of the QUALANOD specifications)

Image 14 – New product or process (N) 15 µm C34 after the Dye Spot, Admittance and Abrasion test
(section 9.3.3 / 9.3.4 / 9.6.1 of the QUALANOD specifications)

Image 15 – New product or process (N) 20 µm C0 after the Dye Spot, Admittance and Abrasion test
(section 9.3.3 / 9.3.4 / 9.6.1 of the QUALANOD specifications)

Image 16 – New product or process (N) 20 µm C34 after the Dye Spot, Admittance and Abrasion test
(section 9.3.3 / 9.3.4 / 9.6.1 of the QUALANOD specifications)

Image 17 – Reference system (S) 15 μm C0 after the AASS test
(section 8.2 of the QUALANOD general regulations VI)

Image 18 – Reference system (S) 15 μm C34 after the AASS test
(section 8.2 of the QUALANOD general regulations VI)

Image 19 – Reference system (S) 20 μm C0 after the AASS test
(section 8.2 of the QUALANOD general regulations VI)

Image 20 – Reference system (S) 20 μm C34 after the AASS test
(section 8.2 of the QUALANOD general regulations VI)

Image 21 – New product or process (N) 15 μm C0 after the AASS test
(section 8.2 of the QUALANOD general regulations VI)

Image 22 – New product or process (N) 15 μm C34 after the AASS test
(section 8.2 of the QUALANOD general regulations VI)

Image 23 – New product or process (N) 20 μm C0 after the AASS test
(section 8.2 of the QUALANOD general regulations VI)

Image 24 – New product or process (N) 20 μm C34 after the AASS test
(section 8.2 of the QUALANOD general regulations VI)