Update of QUALICOAT Specifications
Update Sheet No. 04
applicable from 01.01.2025

Subject:	**Various updates requested by the Technical Committee**
Proposals/Requests:	Proposals approved by TC/EC on 16-17 May 2024
QUALICOAT Resolutions:	TC 2024-05-16 - Nos. 10, 12, 13, 16, 17, 18,23,24, 25, 27, 32
Amendment to the Specifications:	As detailed below

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No.	Background/Source	Subject	Amendments in Specifications 2024, V01b	Specifications 2025
1	**Preanodising WG** Proposal discussed and approved by the TC on 16.05.24 (Item 5, Topic 2) **Resolution No. 10/TC 16.05.24** *The TC approved the proposal of sub-WG Pre-Ox for enhanced AASS and FFC tests requirement for pre-anodising. An update sheet shall be prepared.* **Laboratories WG / 11.09.24** *The proposed draft update sheet was unanimously accepted by the Laboratories WG, as amended during the meeting ~~(according to EN 12206-1)~~, as the proposed limits for Pre-Ox are not according to EN-12206-1, so reference to the standard should be removed.*	**Enhanced AASS and FFC test requirements for PRE-OX**	**2.10 Acetic acid salt spray resistance** […] **REQUIREMENT)** […] **SPECIFIC REQUIREMENTS for PRE-OX endorsement:** An infiltration of maximum 8 mm^2 is allowed over a scratch length of 10 cm but the length of any single infiltration shall not exceed 2 mm. […] **2.18 Filiform corrosion test** […] **REQUIREMENT)** […] **SPECIFIC REQUIREMENTS for PRE-OX endorsement:** L (longest filament) ≤ 2 mm M (average length of filaments) ≤ 1 mm […]	➢ **Volume 0 –** Test methods and requirements ➢ **Volume 1 –** Specifications for Coaters ➢ **Volume 2 –** Specifications for Chemical Manufacturers ➢ **Volume 3** – Specifications for Powder Manufacturers

No.	Background/Source	Subject	Amendments in Specifications 2024, V01b	Specifications 2025
2	**Pretreatment WG** Proposal discussed and approved by the TC on 16.05.24 (*Item 7, Topic 1*) **Resolution No. 12/TC 16.05.24** *The TC approved the proposal of Pretreatment WG to include a provision in § 3.3 and Appendix A6 regarding the use of conversion coating baths used for aluminium and for other metals. An update sheet shall be prepared.*	**Alignment with EN 12206-1**	**3.3 Chemical conversion coatings** Conversion coating baths used for aluminium should not be used for the treatment of other metal substrates. For any conversion coating bath which is not solely used for aluminium, it is the joint responsibility of both the licensee and the chemical manufacturer to define and obey measures in the manual adapted to the coating line, which shall ensure that the contamination of the respective conversion coating bath is kept within the limits prescribed by the chemical manufacturer. After conversion coating pre-treated aluminium shall not be stored for more than 16 hours. As a rule, they should be coated immediately after pretreatment. The risk of insufficient adhesion increases the longer the products are stored. […]. **Appendix A6 – Approval of chemical pretreatments** **9. RESPONSIBILITY AND COOPERATION WITH THE LICENSEE** Manufacturers and licensees shall cooperate closely (see Chapter 3, § 3.3 and § 3.3.2). For all systems, there shall be technical data sheets, also giving information about other products with which a system may or may not be used. The chemical manufacturer shall be responsible for all cycles used by coating applicator. […] For any conversion coating bath which is not solely used for aluminium, it is the joint responsibility of both the licensee and the chemical manufacturer to define and obey measures in the manual adapted to the coating line, which shall ensure that the contamination of the respective conversion coating bath is kept within the limits prescribed by the chemical manufacturer. The manual adapted to the coating line shall also specify the rinsing requirements according to Chapter 3, § 3.3.2. […]).	➢ **Volume 1 –** Specifications for Coaters ➢ **Volume 2 –** Specifications for Chemical Manufacturers

No.	Background/Source	Subject	Amendments in Specifications 2024, V01b	Specifications 2025
3	**Pretreatment WG** Proposal discussed and approved by the TC on 16.05.24 (*Item 7, Topic 2)* **Resolution No. 13/TC 16.05.24** *The TC approved the proposal of Pretreatment WG to include a provision in the specifications that AASS test could be outsourced by the coaters in case chemical supplier of chromate pretreatment process cannot proceed with AASS test. An update sheet shall be prepared.*	**Outsourcing of AASS test**	**3.3.1 Chromate conversion coatings** […] Every two months a production sample shall be sent to the chemical chromate conversion manufacturer who shall carry out an acetic acid salt spray resistance test[8]. The test results shall be communicated to the coater within a period of maximum four months. […] [8] If the chemical chromate conversion manufacturer is unable to carry out the acetic acid salt spray resistance test, the test shall be outsourced and carried out by a QUALICOAT approved laboratory or another laboratory accredited for this specific test according to ISO 17025.	➢ **Volume 1 –** Specifications for Coaters ➢ **Volume 2 –** Specifications for Chemical Manufacturers
4	**Ad hoc QCT 3.0 WG** Proposal discussed and approved by the TC on 16.05.24 (*Item 4, Topic 2)* **Resolution No. 8/TC 16.05.24** *The TC approved the proposal of ad-hoc QCT 3.0 WG regarding the number of samples required for QCT 3.0 tests for project-based approvals with a remark that the sampling is per alloy subject to further clarification on future sampling. An update sheet shall be prepared.*	**QCT 3.0 tests**	**Appendix A13 – QUALICOAT 3.0** […] **1.2.1 Optical Emission Spectroscopy (OES)** […] The test shall be performed on three different samples[1]. […] [1] For project-based approvals: Only one sample per alloy is required. **1.2.2 Anodic Cyclic Polarization (ACP)** […] The test shall be performed on three different samples[2]. […] [2] For project-based approvals: Only one sample per alloy is required. **1.2.3 Metallographic study for Aluminium QUALICOAT 3.0 grade** […] The test shall be performed on three different samples[3]. […] [3] For project-based approvals: Only one sample per alloy is required. […]	➢ **Appendix A-** Specifications for QUALICOAT 3.0

No.	Background/Source	Subject	Amendments in Specifications 2024, V01b	Specifications 2025
5	**Laboratories WG** Proposal discussed and approved by the TC on 16.05.24 (*Item 8, Topic 1*) **Resolution No. 16/TC 16.05.24** *The TC approved the proposal of Laboratories WG for amendments in Appendix A4 – Metallic organic coating regarding the reference material and availability. An update sheet shall be prepared.*	**Reference scale for panels coated in an aluminium-based metallic colour**	**Appendix A4– Metallic organic coating** **1. REFERENCE SCALE** […] For this reason, a reference scale for the laboratories has been defined using panels coated in an aluminium-based metallic colour (RAL 9006). ~~The stains are obtained by applying an alkaline solution to the surface for different lengths of time. These different panels produced by an approved laboratory are approved and distributed by QUALICOAT. Each approved laboratory shall have these reference panels.~~ After the testing, high-resolution images were captured. These images have been approved and can be requested from the QUALICOAT Secretariat. Each accredited laboratory should have these approved pictures readily available.	➢ **Volume 3 –** Specifications for Powder Manufacturers
6	**Laboratories WG** Proposal discussed and approved by the TC on 16.05.24 (*Item 8, Topic 2*) **Resolution No. 17/TC 16.05.24** *The TC approved the proposal of Laboratories WG for amendments in §2.18 Filiform corrosion test (Version A). An update sheet shall be prepared.*	**Harmonisation of FFC test** (Text alignment with IS0 4828-10)	**2.18 Filiform corrosion test** […] **REQUIREMENTS (except for PRE-OX endorsement)** […] ~~Acceptable limits within 10 cm on each side of the scratch:~~ L (longest filament) ≤ 4 mm M (average length of filaments) ≤ 2 mm […]	➢ **Volume 0 –** Test methods and requirements ➢ **Volume 1 –** Specifications for Coaters ➢ **Volume 2 –** Specifications for Chemical Manufacturers

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7	**Laboratories WG** Proposal discussed and approved by the TC on 16.05.24 *(Item 8, Topic 3*) **Resolution No. 18/TC 16.05.24** *The TC approved the proposal of Laboratories WG that evaluation of water spot test should be performed after 2 hours but not later than 3 hours. An update sheet shall be prepared.*	**Evaluation of Water Spot Test**	**2.19 Water spot test** **TEST METHOD** The test shall be performed on one panel. The demineralised water (maximum 10 µS/cm at 25°C) shall be heated up to 60°C in a beaker of the proper size and kept under stirring to uniform temperature. The determination of the lightness coordinate L must be made on the panel to be tested in order to obtain the lightness change after the test. The test panel shall be immersed ~~for a half~~ in water in such a way that at least half of the area is inside water. Care must be taken not to put the panel in contact with the bottom of the beaker. The panel shall be immersed for 24 hours at 60 ± 1°C. The glass shall be properly covered to avoid water evaporation. At the end of the test, the panel shall be immediately cooled down in demineralised water at a temperature of ≤ 5°C. It shall then be dried with paper towels without rubbing. The immersed area of the panel shall be used for the determination of the lightness change. This determination should be performed after 2 hours but not later than 3 hours after the water spot test. Lightness ~~Colour~~ change: ~~ΔE and~~ ΔL CIELAB formula according to ISO 11664-4, measurement including specular reflection. **REQUIREMENTS:** **Lightness ~~Colour~~ change** **The** ΔL value shall be less than 4.	➢ **Volume 0 –** Test methods and requirements ➢ **Volume 3 –** Specifications for Powder Manufacturers

No.	Background/Source	Subject	Amendments in Specifications 2024, V01b	Specifications 2025
8	**Powders WG** Proposal discussed and approved by the TC on 16.05.24 (*Item 9, Topic 2a*) **Resolution No. 23/TC 16.05.24** *The TC approved the proposal of Powders WG to change the blistering requirement from 2(S2) to 0(S0) for §2.10 (Acetic acid salt spray resistance) and §2.16 (Constant climate condensation water test). An update sheet shall be prepared.*	**Blistering requirement for AASS test and Constant Climate condensation water test**	**2.10 Acetic acid salt spray resistance** **2.16 Constant climate condensation water test** […] **REQUIREMENTS:** No blistering in excess of ~~2 (S2)~~ 0 (S0) according to ISO 4628-2. […]	➢ **Volume 0 –** Test methods and requirements ➢ **Volume 1 –** Specifications for Coaters ➢ **Volume 2 –** Specifications for Chemical Manufacturers ➢ **Volume 3** – Specifications for Powder Manufacturers
9	**Powders WG** Proposal discussed and approved by the TC on 16.05.24 (*Item 9, Topic 2b)* **Resolution No. 24/TC 16.05.24** *The TC approved the concept of Powders WG to indicate in chapter 4 of the specifications that any changes in minimum, curing temperature and/or time also require a new QUALICOAT approval subject to amending the wording. An update sheet shall be prepared.*	**Curing temperatures and times**	**Chapter 4 - Approval of Organic Coatings** […] Any modification of the chemical properties of the binder (resin(s) and/or hardening agent(s) is tantamount to a new product and absolutely requires a new QUALICOAT approval. Furthermore, if the physical appearance of the final coating is modified, a new specific QUALICOAT approval shall be required (see Appendix A3). Any change in minimum curing temperature and/or time requires a new QUALICOAT approval. […]	➢ **Volume 3** – Specifications for Powder Manufacturers

No.	Background/Source	Subject	Amendments in Specifications 2024, V01b	Specifications 2025
10	**Powders WG** Proposal discussed and approved by the TC on 16.05.24 (*Item 9, Topic 2c*) **Resolution No. 25/TC 16.05.24** *The TC agreed with the concept of the Powders WG to clarify §3.7.2 of the specifications when Curing Index is used, that the minimum temperature should always be according to the curing window in the Technical Data Sheet. The Powders WG was tasked to clarify the details and wording. An update sheet shall be prepared.*	**Curing index**	**3.7.2 Stoving** […] The temperatures of the products and the stoving times shall match the values recommended in the manufacturer's technical specifications If the coater uses a calculation of the curing index, the value shall meet the coating suppliers' recommendations. The minimum temperature shall always be according to the curing window specified by the powder manufacturer in the Technical Data Sheet. The curing index value shall be set to 100 by default, unless specified by ~~meet~~ the coating manufacturer ~~suppliers~~ in written form for this specific coater ~~recommendations~~. […]	➢ **Volume 1 –** Specifications for Coaters

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<tr><th>No.</th><th>Background/Source</th><th>Subject</th><th>Amendments in Specifications 2024, V01b</th><th>Specifications 2025</th></tr>
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<td>11</td>
<td><u>Powders WG</u>
Proposal discussed and approved by the TC on 16.05.24 (Item 9, Topic 2d)
Resolution No. 27/TC 16.05.24
The TC approved the proposal of Powders WG to make the Gloss, Coating thickness, Bend test (for Postforming only), Impact test, Colour and Particle size tests as mandatory requirement for powder manufacturers during production. Powders WG to further discuss the concept of in-house control for powder manufacturers. An update sheet shall be prepared.

*In-house control concept has directly been incorporated in Volume 3 of QCT specifications. Please see chapter 6 of Volume 3.</td>
<td>In-house control of powder manufacturers</td>
<td>Chapter 6 – Routine Inspections of coating manufacturers plants*
[…]
b) Review of in-house control and registers
The inspector will check that in-house control has been carried out on finished products and recorded by the powder manufacturer as follows:
<table>
<tr><th>TEST</th><th>FREQUENCY</th></tr>
<tr><td>COLOUR MEASUREMENT</td><td rowspan="6">AT LEAST ONCE PER PRE-MIX</td></tr>
<tr><td>GLOSS MEASUREMENT</td></tr>
<tr><td>COATING THICKNESS MEASUREMENT</td></tr>
<tr><td>BEND TEST FOR POSTFORMING</td></tr>
<tr><td>IMPACT TEST</td></tr>
<tr><td>PARTICLE SIZE MEASUREMENT</td></tr>
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In the in-house control register the inspector will check that the results recorded coincide with the results of the test panels. For this reason, all test panels shall be kept and held at the inspector’s disposal for one year.
[…]</td>
<td>➢ Volume 3 – Specifications for Powder Manufacturers</td>
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No.	Background/Source	Subject	Amendments in Specifications 2024, V01b	Specifications 2025
13	**GL Request** Proposal discussed and approved by the TC on 16.05.24 (*Item 12, Topic 1)* **Resolution No. 32/TC 16.05.24** *The TC approved the proposed amendment to the specifications regarding the distribution of Powder Test Reports to Manufacturers. An update sheet shall be prepared.*	**Distribution of Powder Test Reports to Manufacturers**	**4.2.3 Assessment of laboratory test results** […] Within 10 working days after receiving the laboratory test results from QUALICOAT, the General Licensee shall send the reports and inform the powder manufacturer of all the results and their consequences (e.g. request for repetition or ban of a colour). […] **4.2.5 Banned colours** […] Within 30 working days after receiving the Florida test reports and results from QUALICOAT, the General Licensee shall inform the powder manufacturer of the unsatisfactory reports, result, and of the resulting ban of the failed colour. […] **4.3 Powder manufacturer's right of appeal** The powder manufacturer shall receive a copy of each test and inspection report. If the results do not meet the requirements, full details and reasons shall be given. The powder manufacturer shall be entitled to appeal to the General Licensee, or to QUALICOAT in countries where there is no General Licensee, within 10 working days after receiving notification of the Laboratory, Florida tests and/or Inspection results from the GL or from QUALICOAT in countries where there is no General Licensee. […]	➢ **Volume 3** – Specifications for Powder Manufacturers