

Subject:	Anodic pretreatment
Proposal/Request:	Pre-Anodising WG
QUALICOAT resolutions:	<p><u>Resolution No. 3/TC 16.05.18</u></p> <p>The TC endorsed the Pre-Anodising WG's proposal to improve section 3.4. and asked the Specifications WG to prepare an update sheet including the proposed amendments.</p> <p><u>Resolution No. 3/EC 17.05.18</u></p> <p>The EC requested the Pretreatment WG to submit a draft procedure for approving pre-ox systems by November 2018.</p>
Date of ratification:	22–23 November 2018
Date of application:	1 January 2019
Amendments to the Specifications:	<ul style="list-style-type: none"> • Section 3.4. • Appendix A6 (new section)

3.4. Anodic pretreatment (automatic SEASIDE endorsement)

The aluminium surface shall be treated to eliminate all impurities that could pose problems in the anodic pretreatment.

Etching

The aluminium parts (extrusions and sheet, not cast) shall be degreased and etched with a minimum etching rate of 2 g/m². In the case of alkaline etching, desmutting shall be necessary.

Thickness of the pre-anodised layer

The anodic pretreatment shall be chosen so as to produce an anodic coating with a thickness of at least ~~3~~4 µm (not more than ~~8~~10 µm) without powdering and without surface flaws.

The anodic pretreatment parameters can be as follows:

- Acid concentration (sulphuric acid): 180-220 g/l
- Aluminium content: 5-15 g/l
- Temperature: 20-30°C (± 1°C of the temperature chosen by the coater)
- Current density: 0.8-2.0 A/dm²
- Agitation of the electrolyte

Rinsing

After anodic pretreatment, the aluminium shall be rinsed ~~with demineralised water~~ for such a time and at such a temperature (~~less than 60°C~~) as is required to remove the acid from the pores and to fulfil the requirements of the wet adhesion test.

Enhancing rinsing with a hot sealing step or a passivation/(QUALICOAT approved) alternative system step is permitted. The conductivity of the dripping water of the last rinse shall not exceed a maximum of 30 µS/cm at 20°C. The conductivity shall only be measured for open sections and not for hollow sections.

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Storage conditions

Pre-anodised aluminium shall never be stored in an atmosphere that is dusty and detrimental to it. Good atmospheric conditions shall always be maintained in the storage area. All workers handling pre-anodised aluminium shall wear clean textile gloves to avoid contamination of the surface.

Storage time

Pre-anodised parts shall not be stored for more than 16 hours. ~~As a rule, they shall be coated immediately after pretreatment.~~ However, the parts may be stored for up to 72 hours, provided that additional rinsing and drying has taken place prior to coating (no etching allowed). The risk of insufficient adhesion increases the longer the parts are stored.

Record of test results

Coating applicators using this type of anodic pretreatment shall perform and record the following additional tests:

• **Anodising bath**

- The acid concentration and aluminium content of the anodising bath shall be analysed once per day. ~~every 24 hours of operation~~
- The temperature of the anodising bath shall be checked every 8 hours. ~~1 hour after anodising starts, then every 8 hours.~~
- The etching rate shall be checked once per day.
- The thickness of the anodic coating shall be checked (every load).

• **Testing of the coated finished products**

- Before application, each coating (of a system and/or a manufacturer) shall be tested for resistance to boiling water, followed by an adhesion test (see § 2.4).
- During application, resistance to boiling water shall be tested, followed by an adhesion test every 4 hours.

Coating applicators using anodic pretreatment, as specified above, shall ask their coating suppliers to confirm in writing the compatibility of their coating system with this type of pretreatment.

A6 – Procedure for evaluating chemical pretreatment processes

[...]

5. TESTING PROGRAMME

Approval is based on the following testing programme to ensure conformity with the requirements prescribed by QUALICOAT.

a) PANEL PREPARATION

[...]

Anodic pretreatment

If an alternative pretreatment system is proposed to be used in combination with pre-anodised substrates, the necessary test samples shall be prepared according to the requirements specified by QUALICOAT in section 3.4. After this, the proposed alternative pretreatment shall be applied to the pre-anodised panels as specified by the chemical supplier of the alternative pretreatment system.

[...]