



Master Inspection Report

(Chemical Manufacturer)

according to the requirements of Appendix A6 of the QUALICOAT Specifications

Author: Div, Ch. Langer
Sue Paredi

Document Code: F-MIR-Chem
QQM Section: 9.1.3.3
Date Approved: 23.11.2019
Approved by: EC
Valid from: 01.01.2020
Version: 01
No. Pages: 16

Report no. **COMPANY**Name Address sample preparation Phone E-mail Contact person Date of report Address Production Sites **INSPECTION PRETREATMENT / PREOX SYSTEM**New approval ☐Central production site ☐Renewal ☐Other production site ☐Approval Nr. / A Technical service center ☐**Name of the Pretreatment product:**☐

Rinse

☐

No Rinse

☐

Chromium-free Pretreatment

☐

Anodic + Chromium-free Pretreatment

Date of Inspection

Master Laboratory

Second Laboratory

(only for granting an approval)

Name of inspector
(pre- and lastname)

1. Technical Information (prescribed by the chemical supplier)

APPLICATION METHOD ⁽¹⁾ ⁽²⁾			VERSION DD/MM/YY		
TECHNICAL DATA SHEET					
PROCESS CYCLE ⁽²⁾ Conductivity Rinse (before/after) conversion					
No.	Step	Product Name / Conductivity [μ S]	Temperature [°C]	Concentration pH	Time [min]
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
ANALYTICAL METHODS FOR BATH (titration, pH, conductivity... / frequency)					
ANALYTICAL METHOD COATING WEIGHT / FREQUENCY FOR IN HOUSE CONTROL (daily/shift...) ⁽³⁾					
OTHER ANALYSES (DYE SPOT TEST / FREQUENCY)					
OTHER RECOMMENDATIONS (EQUIPMENT, HANDLING, STORAGE, ETC.) ⁽⁴⁾					
CONVERSION COATING COLOURLESS?					

NOTE

- ⁽¹⁾ Spraying and/or immersion
- ⁽²⁾ The manufacturer is responsible for ensuring that the cycle used by the coating applicator is suitable for obtaining a coated product conforming to the QUALICOAT Specifications. What are the limits for demineralised water before / after conversion coating?
- ⁽³⁾ Method for in-house control and for the testing laboratory (frequency).
- ⁽⁴⁾ The technical specifications must make clear which items are compulsory, for instance does "recommended" mean compulsory or not?

2. Panel Preparation

The samples were prepared on

DD/MM/YYYY
☐ In the laboratory recognised by QUALICOAT in the presence of a representative of the manufacturer

☐ In the laboratory of the chemical manufacturer under supervision of Mr./Ms.

Process Cycle during the panel preparation

Application method used for the panel preparation

spraying ☐

immersion ☐

No.	Step	Product Name / Conductivity [μS]	Temperature [°C]	Concentration pH	Time [min]
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					

	Prescribed	Measured	Unit
Etching degree [1-2 g/m ²]		Profile	g/m ²
[1-2 g/m ² Alternativ Pretreatment System] [≥ 2 g/m ² PreOx-System]		Panels	g/m ²
Weight / concentration conversion coating (lower limit for corrosion tests on AA 60660 or 6063)			
Weight / concentration conversion coating (upper limit for mechanical tests on AA 5005-H24 or H14)			

Remarks

Thickness of the anodic pretreatment (only for PreOx-Systems)

Panels AA 5005-H24 / AA 5005-H14

No.	Measured thickness [µm]					Average [µm]
	1	2	3	4	5	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Profiles AA 6060 / AA 6063

No.	Measured thickness [µm]					Average [µm]
	1	2	3	4	5	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Anodic pretreatment parameters according to QUALICOAT-Specifications?

Yes

No

☐
☐

All test specimens were properly contacted
(verification by coating thickness measurement)

Yes

No

☐
☐

Remarks

Report no. **Coating Material**

2.1	Metallic Class 1 Category 3	RAL 9006 ☐	RAL 9007 ☐	P-
2.2	RAL 9010 Class 2 Category 1			P-
2.3	RAL Liquid Coating	(if requested by the manufacturer)		P-
2.4	Class 3	(if requested by the manufacturer)		P-

Stoving Conditions

Stoving conditions specified by the manufacturer			Stoving installation	
Colour	Time in minutes	Temp. of parts (°C)	Duration (minutes)	Set value (°C)
RAL9010				
RAL 9006 ☐				
RAL 9007 ☐				

Remarks **3. Equipment of main laboratory at central production site****Analytical instrument for testing the quality of the conversion layer**Make Model No Date of last maintenance/service recorded Function correct ☐ incorrect (>1mg) ☐Remarks **Cutting tool (for cross-cut adhesion test) EN ISO 2409**Make Model No Function correct ☐ incorrect (>1mg) ☐Adhesive tape available Yes ☐ No ☐Distances between cuts ☐ 1 mm ☐ 2 mm ☐ 3 mmRemarks

Report no. **Cupping tester (EN ISO 1520)**Make Model No Visual assessment good ☐not good ☐If not good, indicate the reasons Function correct ☐incorrect ☐Remarks **Impact tester (EN ISO 6272-1, EN ISO 6272-2 and ASTM D 2794)**Make Model No Visual assessment good ☐not good ☐If not good, indicate the reasons Function correct ☐incorrect ☐Remarks **Apparatus for bend test (EN ISO 1519)**Make Model No Visual assessment good ☐not good ☐If not good, indicate the reasons Function correct ☐incorrect ☐Remarks **Acetic Acid Salt spray cabinet (EN ISO 9227)**Make Model No Visual assessment good ☐not good ☐If not good, indicate the reasons Function correct ☐incorrect ☐Remarks

Report no. **Constant climate condensation cabinet (EN ISO 6270-2)**

Make		Model		No	
Visual assessment	good ☐	not good	☐		
If not good, indicate the reasons					
Function	correct ☐	incorrect	☐		
Remarks					

Resistance to humid atmospheres containing sulphur dioxide - cabinet (EN ISO 3231)

Make		Model		No	
Visual assessment	good ☐	not good	☐		
If not good, indicate the reasons					
Function	correct ☐	incorrect	☐		
Remarks					

Filiform corrosion cabinet (EN ISO 4623-2)

Make		Model		No	
Visual assessment:	good ☐	not good	☐		
If not good, indicate the reasons					
Function:	correct ☐	incorrect	☐		
If not; in which laboratory this test will be outsourced					
Remarks					

Apparatus for pressure cooker test (Qualicoat)

Make		Model		No	
Visual assessment:	good ☐	not good	☐		
If not good, indicate the reasons					
Function:	correct ☐	incorrect	☐		
Remarks:					

Report no.

4. Equipment of other production sites

Analytical instrument for testing the quality of the conversion layer

Make Model No Date of last maintenance/service recorded If not good, indicate the reasons Function correct ☐ incorrect ☐Remarks All other mentioned equipment of chapter 5 are available Yes ☐ No ☐Outsourcing of the test methods Yes ☐ No ☐Which are Enclosures (TDS **needs** to be added)

Date

Date

Inspector Signature
(e-signature or original signature)Signature Representative of the chemical supplier
(e-signature or original signature)



5. Laboratory Tests

5.1 Mechanical Tests (only for the master laboratory)

For the mechanical tests all laboratories using QUALICOAT specified alloy AA 5005-H24 or -H14 (AlMg 1- semihard). Following chemical composition was analysed as follows:

	Si	Mg	Cu	Mn	Zn	Ni	Fe	Pb	Bi	Cr	Ti	Sn	V	Ca	Be	Al
Content wt%																

Remarks

Specified minimum thickness: 60 µm	RAL 9006 ☐ RAL 9007 ☐ / Class 1		
	Sample 1	Sample 2	Sample 3
1. Wet adhesion (QUALICOAT) <i>No blistering, no loss of adhesion</i> <i>Acceptable value: 0</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
2. Cupping (EN ISO 1520) <i>No detachment at a diameter of 5 mm</i> <i>Class 1 no cracking or detachment at a depth of 5 mm</i> <i>Class 2 and 3 no detachment at a depth of 5 mm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
3. Bend test (EN ISO 1519) <i>No detachment at a diameter of 5 mm</i> <i>Class 1 no cracking or detachment at a diameter of 5 mm</i> <i>Class 2 and 3 no detachment at a diameter of 5 mm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4. Impact test (EN ISO 6272-1 or 2/ ASTM D 2794) <i>No detachment at a diameter of 5 mm</i> <i>Class 1 no cracking or detachment at a diameter of 5 mm</i> <i>Class 2 and 3 no detachment at a diameter of 5 mm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory



Specified minimum thickness: 60 µm	RAL 9010 / Class 2		
	Sample 1	Sample 2	Sample 3
5. Wet adhesion (QUALICOAT) <i>No blistering, no loss of adhesion</i> <i>Acceptable value: 0</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
6. Cupping (EN ISO 1520) <i>No detachment at a diameter of 5 mm</i> <i>Class 1 no cracking or detachment at a <u>depth</u> of 5 mm</i> <i>Class 2 and 3: no detachment at a depth of 5 mm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
7. Bend test (EN ISO 1519) <i>No detachment at a diameter of 5 mm</i> <i>Class 1 no cracking or detachment at a diameter of 5 mm</i> <i>Class 2 and 3: no detachment at a diameter of 5 mm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
8. Impact test (EN ISO 6272-1 or 2/ ASTM D 2794) <i>No detachment at 2.5 Nm</i> <i>Class 1 no cracking or detachment at 2.5 Nm</i> <i>Class 2 and 3 no detachment at a 2.5 Nm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
Specified minimum thickness: 60 µm	RAL _____ Liquid paint / Class 3		
	Sample 1	Sample 2	Sample 3
9. Wet adhesion (QUALICOAT) <i>No blistering, no loss of adhesion</i> <i>Acceptable value: 0</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
10. Cupping (EN ISO 1520) <i>No detachment at a diameter of 5 mm</i> <i>Class 1: no cracking or detachment at a depth of 5 mm</i> <i>Class 2 and 3 no detachment at a depth of 5 mm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
11. Bend test (EN ISO 1519) <i>No detachment at a diameter of 5 mm</i> <i>Class 1 no cracking or detachment at a diameter of 5 mm</i> <i>Class 2 and 3 no detachment at a diameter of 5 mm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
12. Impact test (EN ISO 6272-1 or 2/ ASTM D 2794) <i>No detachment at 2.5 Nm</i> <i>Class 1 no cracking or detachment at 2.5 mm</i> <i>Class 2 and 3 no detachment at a 2.5 mm after tape test</i>	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory



5.2 Corrosion Tests

For the corrosion tests all laboratories using QUALICOAT specified alloy AA6060 or AA6063.
Following chemical composition was analysed as follows:

	Si	Mg	Cu	Mn	Zn	Ni	Fe	Pb	Bi	Cr	Ti	Sn	V	Ca	Be	Al
Content wt%																

Remarks RAL 9006 ☐ RAL 9007 ☐ / Class 1

Specified minimum thickness: 60 µm	Master Laboratory			Second Laboratory (only for granting)				
	RAL 9006 ☐ RAL 9007 ☐ / Class 1							
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3		
13. Resistance to humid atmospheres containing sulphur dioxide (EN ISO 3231) <i>No infiltration exceeding 1 mm on both sides of the scratch, and no change in colour or blistering in excess of 2 (S2)</i>	µm	µm	µm	µm	µm	µm		
	mm	mm	mm	mm	mm	mm		
	Results satisfactory according to QUALICOAT-Specifications							
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No		
14. Acetic acid salt spray (ISO 9227) <i>Section 2.10 of Specifications</i> <i>Length of filaments: max 4 mm</i> <i>Infiltration: max 16 mm²/10 cm</i> <i>No blistering in excess of 2 (S2)</i>	µm	µm	µm	☐	µm	☐	µm	☐
	Length of filaments							
	mm	mm	mm	☐	mm	☐	mm	☐
	Infiltration [mm ² /10 cm]							
	☐	☐	☐	☐	☐	☐	☐	☐
	Results satisfactory according to QUALICOAT-Specifications							
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
15. Constant climate condensation (ISO 6270-2) <i>No infiltration exceeding 1 mm on both sides of the scratch, and no change in colour or blistering in excess of 2 (S2)</i>	µm	µm	µm	µm	µm	µm	µm	µm
	mm	mm	mm	mm	mm	mm	mm	mm
	Results satisfactory according to QUALICOAT-Specifications							
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
16. Pressure cooker test (QUALICOAT) <i>Slight colour change permissible</i> <i>No detachment</i> <i>No blistering in excess of 2 (S2)</i>	µm	µm	µm	☐	µm	☐	µm	☐
	Results satisfactory according to QUALICOAT-Specifications							
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Specified minimum thickness: 60 µm	Master Laboratory			Second Laboratory (only for granting)		
	RAL 9006 ☐ RAL 9007 ☐ / Class 1					
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
17. Filiform corrosion (ISO 4623-2) <i>L (longest filament) ≤ 4 mm</i> <i>M (average length of filaments) ≤ 2 mm</i>	µm	µm	µm	µm	µm	µm
	Longest Filament (L)					
	mm	mm	mm	mm	mm	mm
	Average Length of Filaments (M)					
	mm	mm	mm	mm	mm	mm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Remarks

RAL 9010 / Class 2

Specified minimum thickness: 60 µm	Master Laboratory			Second Laboratory (only for granting)		
	RAL 9010 / Class 1					
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
13. Resistance to humid atmospheres containing sulphur dioxide (EN ISO 3231) No infiltration exceeding 1 mm on both sides of the scratch, and no change in colour or blistering in excess of 2 (S2)	µm	µm	µm	µm	µm	µm
	mm	mm	mm	mm	mm	mm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
14. Acetic acid salt spray (ISO 9227) Section 2.10 of Specifications Length of filaments: max 4 mm Infiltration: max 16 mm²/10 cm No blistering in excess of 2 (S2)	µm	µm	µm	µm	µm	µm
	Length of filaments					
	mm	mm	mm	mm	mm	mm
	Infiltration [mm²/10 cm]					
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
15. Constant climate condensation (ISO 6270-2) No infiltration exceeding 1 mm on both sides of the scratch, and no change in colour or blistering in excess of 2 (S2)	µm	µm	µm	µm	µm	µm
	mm	mm	mm	mm	mm	mm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No



Report no.

Specified minimum thickness: 60 µm	Master Laboratory			Second Laboratory (only for granting)		
	RAL 9010 / Class 2					
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
16. Pressure cooker test (QUALICOAT) <i>Slight colour change permissible</i> <i>No detachment</i> <i>No blistering in excess of 2 (S2)</i>	µm	µm	µm	µm	µm	µm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
17. Filiform corrosion (ISO 4623-2) <i>L (longest filament) ≤ 4 mm</i> <i>M (average length of filaments) ≤ 2 mm</i>	µm	µm	µm	µm	µm	µm
	Longest Filaments (L)					
	mm	mm	mm	mm	mm	mm
	Average Length of Filaments (M)					
	mm	mm	mm	mm	mm	mm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Remarks

RAL Liquid paint / Class 3

Specified minimum thickness: 60 µm	Master Laboratory			Second Laboratory (only for granting)		
	RAL _____ Liquid paint / Class 3					
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
13. Resistance to humid atmospheres containing sulphur dioxide (EN ISO 3231) <i>No infiltration exceeding 1 mm on both sides of the scratch, and no change in colour or blistering in excess of 2 (S2)</i>	µm	µm	µm	µm	µm	µm
	mm	mm	mm	mm	mm	mm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
14. Acetic acid salt spray (ISO 9227) <i>Section 2.10 of Specifications</i> <i>Length of filaments: max 4 mm</i> <i>Infiltration: max 16 mm²/10 cm</i> <i>No blistering in excess of 2 (S2)</i>	µm	µm	µm	µm	µm	µm
	Length of filaments					
	mm	mm	mm	mm	mm	mm
	Infiltration [mm²/10 cm]					
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No



Report no.

Specified minimum thickness: 60 μm	Master Laboratory			Second Laboratory (only for granting)		
	RAL _____ Liquid paint / Class 3					
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
15. Constant climate condensation (ISO 6270-2) <i>No infiltration exceeding 1 mm on both sides of the scratch, and no change in colour or blistering in excess of 2 (S2)</i>	μm	μm	μm	μm	μm	μm
	mm	mm	mm	mm	mm	mm
	Results satisfactory according to QUALICOAT-Specification:					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
16. Pressure cooker test (QUALICOAT) <i>Slight colour change permissible No detachment No blistering in excess of 2 (S2)</i>	μm	μm	μm	μm	μm	μm
	Results satisfactory according to QUALICOAT-Specification:					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
17. Filiform corrosion (ISO 4623-2) <i>L (longest filament) ≤ 4 mm M (average length of filaments) ≤ 2 mm</i>	μm	μm	μm	μm	μm	μm
	Longest Filament (L)					
	mm	mm	mm	mm	mm	mm
	Average Length of Filaments (M)					
	mm	mm	mm	mm	mm	mm
	Results satisfactory according to QUALICOAT-Specification:					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Remarks

6. Outdoor exposure Genoa

Period	Start dd/mm/yy (always in September)	End dd/mm/yy
Sample	Length of infiltration	Infiltration
Sample 1 (metallic colour)	mm	mm ² /10cm
Sample 2 (metallic colour)	mm	mm ² /10cm
Sample 3 (metallic colour)	mm	mm ² /10cm
Sample 4 (RAL 9010)	mm	mm ² /10cm
Sample 5 (RAL 9010)	mm	mm ² /10cm
Sample 6 (RAL 9010)	mm	mm ² /10cm
Sample 7 (Liquid paint)	mm	mm ² /10cm
Sample 8 (Liquid paint)	mm	mm ² /10cm
Sample 9 (Liquid paint)	mm	mm ² /10cm

Enclosures (TDS **needs** to be added)

Date

Testing Laboratory name

Name responsible person

Signature