CHEMICAL MANUFACTURER

Master Inspection Report

according to the requirements of Appendix A6 of the QUALICOAT Specifications

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Report no. _____

COMPANY

Name	
Address sample preparation	
Phone	
E-mail	
Contact person	
Date of report	
Production Site Address	

INSPECTION: CHEMICAL PRETREATMENTS

TYPE OF INSPECTION

New approval(1) ☐ Renewal ☐ Repetition(3) ☐

APPROVAL NUMBER(2) *(A-NO. / AP-NO.)*:

NAME OF PRETREATMENT PRODUCT:

BATCH NUMBER OF PRETRETMENT PRODUCT:

PROUCTION PLANT

Central production site ☐ Other production site *(ANNEX I)* ☐ Technical service centre ☐

Please mark if the following Annex are included (kindly combine all files into a single PDF):

ANNEX I: Other Production Site(s) ☐ **ANNEX II:** Outdoor Exposure Genoa ☐

TYPE OF PRETREATMENT SYSTEM

Chrome(VI)-free ☐ Anodic + Chrome(VI)-free(2) ☐

	Yes(1)	No		Rinse	No Rinse
Dual use	☐	☐	Final Rinse	☐	☐

INSPECTION

Date of Inspection	
Master Laboratory	
Second Laboratory(3)	
Name of inspector *(first and last name)*	

(1) Only for granting of an approval or in case of a repetition.

(2) A-No. = Approval for chemical pretreatment system (conversion coating) for etched material
AP-No. = Approval for chemical pretreatment system (conversion coating) for pre-anodised material

(3) Products intended for dual use shall be tested both ways. This implies that all tests must be done in duplicate, namely once with and once without the rinse pretreatment step. Separate F-MIR-Chem form shall be used for each.

(4) Anodic pretreatment systems shall be tested both ways. This implies that all tests must be done in duplicate, namely once with and once without the anodic pretreatment process. Separate F-MIR-Chem form shall be used for each.

Report no. _____

1. TECHNICAL INFORMATION (CHEMICAL SUPPLIER'S TDS)

APPLICATION METHOD (1) (2)					
PRETREATMENT SYSTEM'S TECHNICAL DATA SHEET			VERSION		
PROCESS CYCLE (2) Conductivity Rinse (before / after) conversion					
No.	Step	Product Name / Conductivity [µS]	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 FOR COATING WEIGHT MEASUREMENT					
OTHER ANALYSES (Dye Spot Test / Frequency)					
OTHER RECOMMENDATIONS (Equipment, Handling, Storage, etc.) (4)					
CONVERSION COATING COLOURLESS?					

NOTES:

(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?

(4) The technical specifications must make clear which items are compulsory, for instance does "recommended" mean compulsory or not?

2. TESTING PROGRAMME

2.1 PANEL PREPARATION

The samples were prepared on

☐ 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	Profiles			g/m²
(1-2 g/m² Chemical pretreatment system) (≥ 2 g/m² Anodic pretreatment system)	Panels			g/m²
Weight / concentration conversion coating (lower limit for corrosion tests on AA 6060 or AA 6063)				
Weight / concentration conversion coating (upper limit for mechanical tests on AA 5005-H24 or -H14)				

The process parameters of the technical data sheets have been checked with the process parameters of the inspection and are in accordance with the process used for specimen preparation. Yes ☐ No ☐

Does the data sheet specify whether the product is a rinse or a no-rinse system? Yes ☐ No ☐

Does the specification of the conductivity of the rinsing process in the technical data sheet before and/or after conversion coating correspond to the QUALICOAT specifications? Yes ☐ No ☐

2.2 THICKNESS OF THE ANODIC PRETREATMENT *(only for Anodic systems)*

2.2.1 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						

2.2.2 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

2.3 COATING MATERIAL & STOVING CONDITIONS

In the table below, the inspector must record the progressive temperature measured on the coldest part, the pertinent time measured and the stoving times specified by the coating manufacturer.

2.3.1 Class 1: Powder, Metallic colour

☐ RAL 9006 ☐ RAL 9007	Powder Manufacturer	Product Name
P-		

STOVING CONDITIONS SPECIFIED BY THE MANUFACTURER		MEASURED		STOVING INSTALLATION	
Time [min]	Temperature of parts [°C]	Time [min]	Temperature of parts [°C]	Duration [min]	Set value [°C]

2.3.2 Class 2: Powder, Category 1

RAL 9010	Powder Manufacturer	Product Name
P-		

STOVING CONDITIONS SPECIFIED BY THE MANUFACTURER		MEASURED		STOVING INSTALLATION	
Time [min]	Temperature of parts [°C]	Time [min]	Temperature of parts [°C]	Duration [min]	Set value [°C]

Stoving curves for each powder coating system affixed as additional files? Yes ☐ No ☐

Remarks

2.3.3 Class 3: Powder / Liquid Coating *(when requested by the supplier)*

☐ Class 3 ☐ Liquid: RAL _____	Powder Manufacturer	Product Name
P-		

STOVING CONDITIONS SPECIFIED BY THE MANUFACTURER		MEASURED		STOVING INSTALLATION	
Time [min]	Temperature of parts [°C]	Time [min]	Temperature of parts [°C]	Duration [min]	Set value [°C]

Stoving curves for each powder coating system affixed as additional files? Yes ☐ No ☐

Remarks

3. EQUIPMENT OF MAIN LABORATORY AT CENTRAL PRODUCTION SITE

3.1 ANALYTICAL INSTRUMENT FOR TESTING OF THE CONVERSION COATING WEIGHT

Make Model No.

Date of last maintenance / service recorded

Function correct ☐ incorrect ☐

Remarks

3.2 ANALYTICAL BALANCE FOR DETERMINING WEIGHT LOSS

Make Model No.

Date of last maintenance/service recorded

Function correct ☐ Incorrect (precision 0.1mg) ☐

Remarks

3.3 CUTTING TOOL FOR CROSS-CUT ADHESION TEST (ISO 2409)

Make | Model | No.

Function correct ☐ incorrect ☐

Adhesive tape available Yes ☐ No ☐

Distances between cuts ☐ 1 mm ☐ 2 mm ☐ 3 mm

Remarks

3.4 CUPPING TESTER (ISO 1520)

Make | Model | No.

Visual assessment good ☐ not good ☐

If not good, indicate the reasons

Function correct ☐ incorrect ☐

Remarks

3.5 IMPACT TESTER (ISO 6272-1, ISO 6272-2, ASTM D 2794)

Make | Model | No.

Visual assessment good ☐ not good ☐

If not good, indicate the reasons

Function correct ☐ incorrect ☐

Remarks

3.6 APPARATUS FOR BEND TEST (ISO 1519)

Make | Model | No.

Visual assessment good ☐ not good ☐

If not good, indicate the reasons

Function correct ☐ incorrect ☐

Remarks

3.7 ACETIC ACID SALT SPRAY CABINET (ISO 9227)

Make | Model | No.

Visual assessment good ☐ not good ☐

If not good, indicate the reasons

Function correct ☐ incorrect ☐

Remarks

3.8 CONSTANT CLIMATE CONDENSATION CABINET (ISO 6270-2)

Make | Model | No.

Visual assessment good ☐ not good ☐

If not good, indicate the reasons

Function correct ☐ incorrect ☐

Remarks

3.9 RESISTANCE TO HUMID ATMOSPHERES CONTAINING SULPHUR DIOXIDE - CABINET (ISO 22479)

Make | Model | No.

Visual assessment good ☐ not good ☐

If not good, indicate the reasons

Function correct ☐ incorrect ☐

Remarks

3.10 FILIFORM CORROSION CABINET (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

3.11 APPARATUS FOR TESTING WET ADHESION (QUALICOAT)

Make		Model		No.	

Visual assessment: good ☐ not good ☐

If not good, indicate the reasons

Function: correct ☐ incorrect ☐

Remarks:

MIR-CHEM VERIFIED BY:

Inspector's Electronic or Physical Signature

Date: DD/MM/YYYY

Remarks:

Authorised Chemical Supplier's Electronic or Physical Signature

Date: DD/MM/YYYY

Remarks:

4. LABORATORY TESTS

4.1 MECHANICAL TESTS (ONLY FOR THE MASTER LABORATORY)

For the mechanical tests all laboratories shall use QUALICOAT specified alloy AA 5005-H24 or AA 5005-H14 (AlMg1 - semihard). The weight of the conversion coating shall be close to the upper limit for mechanical test samples, especially for the adhesion test.

The 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

4.2 CLASS 1: POWDER, METALIC COLOUR (RAL 9006 or RAL 9007)

Specified minimum thickness: 60 µm	☐ **RAL 9006** / ☐ **RAL 9007**		
	Sample 1	**Sample 2**	**Sample 3**
4.2.1 Dry adhesion (ISO 2409) *Acceptable value: 0*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.2.2 Cupping (ISO 1520) *No cracking or detachment at a depth of 5 mm*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.2.3 Bend test (ISO 1519) *No cracking or detachment at a diameter of 5 mm*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.2.4 Impact test (ISO 6272-1 or 2 / ASTM D 2794) *No cracking or detachment at 2.5 Nm following the tape pull adhesion test*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory

Remarks

4.3 CLASS 2: POWDER, CATEGORY 1 (RAL 9010)

Specified minimum thickness: 60 µm	RAL 9010		
	Sample 1	Sample 2	Sample 3
4.3.1 Dry adhesion (ISO 2409) *Acceptable value: 0*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.3.2 Cupping (ISO 1520) *No detachment at a depth of 5 mm following the tape pull adhesion test*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.3.3 Bend test (ISO 1519) *No detachment at a diameter of 5 mm following the tape pull adhesion test*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.3.4 Impact test (ISO 6272-1 or 2 / ASTM D 2794) *No detachment at 2.5 Nm following the tape pull adhesion test*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory

Remarks

4.4 CLASS 3: POWDER or LIQUID COATING

Specified minimum thickness: 60 µm	☐ Class 3 / ☐ Liquid Coating: RAL _____		
	Sample 1	Sample 2	Sample 3
4.4.1 Dry adhesion (ISO 2409) *Acceptable value: 0*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.4.2 Cupping (ISO 1520) *No detachment at a depth of 5 mm following the tape pull adhesion test.* *- two-component liquid coatings: minimum 3 mm* *- water-thinnable liquid coatings: minimum 3 mm*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.4.3 Bend test (ISO 1519) *No detachment at a diameter of 5 mm following the tape pull adhesion test.* *- for two-component and water-thinnable liquid coatings: use an 8 mm mandrel.*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory
4.4.4 Impact test (ISO 6272-1 or 2 / ASTM D 2794) *No detachment at 2.5 Nm following the tape pull adhesion test*	µm	µm	µm
	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory	☐ satisfactory ☐ not satisfactory

Remarks

5. CORROSION TESTS

5.1 CORROSION TESTS

For the corrosion tests all laboratories shall use QUALICOAT specified alloy AA 6060 or AA 6063. The weight of the conversion coating shall be close to the system's lower limit for corrosion test samples.

The 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

5.2 CLASS 1: POWDER, METALIC COLOUR (RAL 9006 or RAL 9007)

	☐ RAL 9006 / ☐ RAL 9007					
Specified minimum thickness: 60 µm	**Master Laboratory**			**Second Laboratory** *(only for granting)*		
	Sample 1	**Sample 2**	**Sample 3**	**Sample 1**	**Sample 2**	**Sample 3**
5.2.1 Resistance to humid atmospheres containing sulphur dioxide (ISO 22479) *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
5.2.2 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
5.2.3 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
5.2.4 Wet adhesion test (QUALICOAT) *Slight colour change permissible* *No detachment* *No blistering in excess of 2 (S2)*	µm	µm	µm	µm	µm	µm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

5.2.5 Filiform corrosion (ISO 4623-2) *L (longest filament) ≤ 4 mm* *M (average length of filaments) ≤ 2 mm*	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

CLASS 2: POWDER, CATEGORY 1 (RAL 9010)

	RAL 9010					
Specified minimum thickness: 60 µm	**Master Laboratory**			**Second Laboratory** *(only for granting and repetition)*		
	Sample 1	**Sample 2**	**Sample 3**	**Sample 1**	**Sample 2**	**Sample 3**
5.3.1 Resistance to humid atmospheres containing sulphur dioxide (ISO 22479) *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
5.3.2 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
5.3.3 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

5.3.4 Wet adhesion test (QUALICOAT) *Slight colour change permissible* *No detachment* *No blistering in excess of 2 (S2)*	µm	µm	µm	µm	µm	µm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
5.3.5 Filiform corrosion (ISO 4623-2) *L (longest filament) ≤ 4 mm* *M (average length of filaments) ≤ 2 mm*	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

6.3 CLASS 3: POWDER or LIQUID COATING

	☐ Class 3 / ☐ Liquid Coating: RAL _____					
Specified minimum thickness: 60 µm	**Master Laboratory**			**Second Laboratory** *(only for granting and repetition)*		
	Sample 1	**Sample 2**	**Sample 3**	**Sample 1**	**Sample 2**	**Sample 3**
6.3.1 Resistance to humid atmospheres containing sulphur dioxide (ISO 22479) *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
6.3.2 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
6.3.3 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.

6.3.4 Wet adhesion test (QUALICOAT) *Slight colour change permissible* *No detachment* *No blistering in excess of 2 (S2)*	µm	µm	µm	µm	µm	µm
	Results satisfactory according to QUALICOAT-Specifications					
	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
6.3.5 Filiform corrosion (ISO 4623-2) *L (longest filament) ≤ 4 mm* *M (average length of filaments) ≤ 2 mm*	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

ARE THE FOLLOWING ENCLOSURES INCLUDED?

- Conversion coating's **SDS** — Yes ☐ No ☐
- Conversion coating's **TDS** — Yes ☐ No ☐

MIR-CHEM VERIFIED BY:

Testing Laboratory's Electronic or Physical Signature

Remarks:

Date:

General Licensee's Electronic or Physical Signature

Remarks:

Date:

Report no.

ADDITIONAL FILES
UPLOAD 1/4

Report no.

ADDITIONAL FILES
UPLOAD 2/4

Report no.

ADDITIONAL FILES
UPLOAD 3/4

Report no.

ADDITIONAL FILES
UPLOAD 4/4