TEST REPORT NO. 250537

CUSTOMER:	Galvatore Plating & Equipment Mr Salvatore Bongiorno Nesselrodestr. 18 D 50735 Köln
Offer No.	250638
Contract No. / Date:	2025008 / 02/07/2025
Testing:	corrosion tests according to DIN EN ISO 12944-6 [2018], corrosivity category C5-high
Subject of Testing:	coated test panels
Origin of Samples:	provided by customer
Entry date of samples:	04/07/2025
Start of Testing:	21/07/2025
End of Testing:	30/09/2025
Archiving of Samples:	four weeks
Subcontracts:	none
Number od Pages:	12

An overview of all test methods used with issue dates and status of accreditation can be found at the end of this report.

1 SUBJECT OF TESTING

The client delivered coated steel plates with the following information:

Coating system: Rachstar® Pro

1. Layer: Rackstar® Primer, 100-160 µm, 15 min curing at 195°C

2. Layer: Rackstar® Part A, 270-360 µm, 15 min curing at 195°C

3. Layer: Rackstar® Part A, 350-450 µm, 15 min curing at 195°C

Table 1: Designation of samples

Sample name iLF	Sample name customer
P1.1	without designation
P1.2	
P1.3	
P1.4	
P1.5	
P1.6	
P1.7	
P1.8	
P1.9	

2 TEST METHODS AND RSULTS

2.1 Dry film thickness

Test method: Determination of dry film thickness according to DIN EN ISO 2178

Table 2: Results of DFT-measurements without correction for surface roughness

Sample	DFT [µm]	MV* [µm]	SD* [µm]	Max. [µm]	Min. [µm]
P1.1	346/366/341 382/274/352	344	38	382	274
P1.2	359/376/345 338/283/315	336	34	376	283
P1.3	362/428/365 451/357/385	391	40	451	357
P1.4	369/364/393 355/296/294	345	41	393	294
P1.5	329/326/326 291/245/245	294	41	329	245
P1.6	426/402/378 372/308/340	371	43	426	360
P1.7	428/400/411 423/360/381	400	27	428	360
P1.8	368/443/367 422/330/388	386	41	443	330
P1.9	381/414/397 446/354/373	394	33	446	354

*) MV = mean value, SD = standard deviation

2.2 Adhesion at state of delivery

Test method: X cut according to DIN EN ISO 16276-2 (tape: Tesa 4122)
Adhesion according to DIN EN ISO 4624 (glue: Pattex Ultra Gel)

Table 3: Results of adhesion tests

Sample	**X cut** *Target: not given*	**Pull-off strength σ** *Target: ≥ 2,5 MPa*	**Type of fracture** *Target: 0 % A/B, unless σ ≥ 5 MPa*
P1.1	Gt 0	*5.7* *5.5* *5.1* *MV = 5 ± 1*	100% -/Y 100% -/Y 100% -/Y
P1.2	Gt 0	6.0 5.1 6.4 *MV = 6 ± 1*	100% -/Y 100% -/Y 100% -/Y
P1.3	Gt 0	5.2 5.3 5.6 *MV = 5 ± 1*	100% -/Y 100% -/Y 100% -/Y

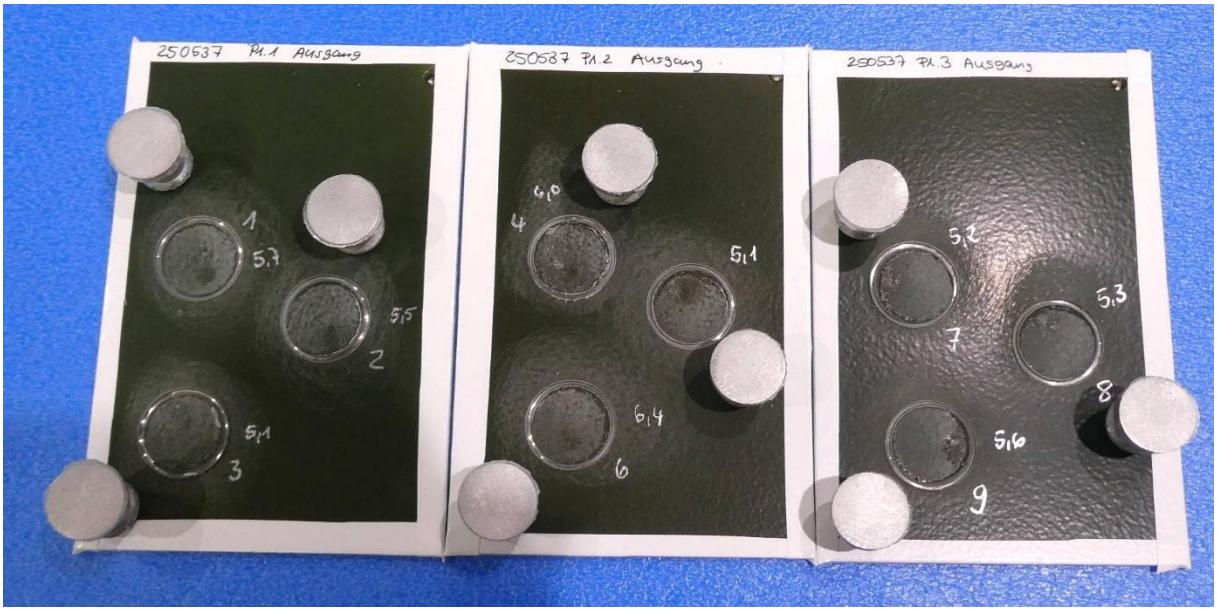

Figure 1: P1.1-P1.3 – Pull-offs

Figure 2: P1.1 – X cut

Figure 3: P1.2 – X cut

Figure 4: P1.3 – X cut

Table 4: Results of adhesion tests – repeat with glue UHU Endfest

Sample	**X cut** *Target: not given*	**Pull-off strength σ** *Target: ≥ 2,5 MPa*	**Type of fracture** *Target: 0 % A/B, unless σ ≥ 5 MPa*
P1.1	Gt 0	*4.7* *5.5* *6.1* *MV = 5 ± 1*	100% -/Y 100% -/Y 100% -/Y
P1.2	Gt 0	5.7 4.8 4.9 *MV = 5 ± 1*	100% -/Y 100% -/Y 100% -/Y
P1.3	Gt 0	4.7 5.3 5.7 *MV = 5 ± 1*	100% -/Y 100% -/Y 100% -/Y

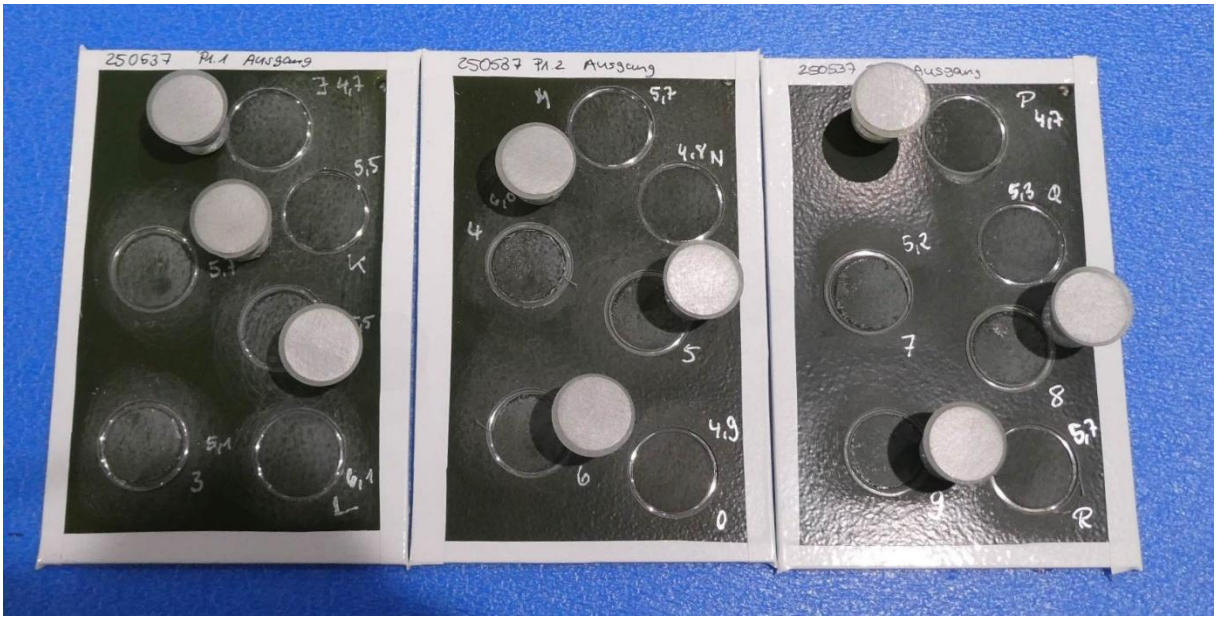

Figure 5: P1.1-P1.3 – Pull-offs

2.2 Resistance to humidity

Test method: Resistance to humidity part 1: continous condensation (DIN EN ISO 6270-1)

Test duration: 720 h

Assessment: Degree of blistering according to DIN EN ISO 4628-2

Degree of rusting according to DIN EN ISO 4628-3

Degree of cracking according to DIN EN ISO 4628-4

Degree of flaking according to DIN EN ISO 4628-5

X cut according to DIN EN ISO 16276-2 after 7d of recovery, tape: Tesa 4122

Adhesion according to DIN EN ISO 4624 after 7d of recovery, glue: Pattex Ultra Gel

Table 5: Results after exposure to humidity

Sample	**Blistering** *Target: 0 (S0)*	**Rusting** *Target: Ri 0*	**Flaking** *Target: 0 (S0)*	**Cracking** *Target: 0 (S0)*
P1.4	0 (S0)	Ri 0	0 (S0)	0 (S0)
P1.5	0 (S0)	Ri 0	0 (S0)	0 (S0)
P1.6	0 (S0)	Ri 0	0 (S0)	0 (S0)

Table 6: Results after exposure to humidity

Sample	**X cut** *Target: not given*	**Pull-off strength σ** *Target: ≥ 2,5 MPa*	**Type of fracture** *Target: 0 % A/B, unless σ ≥ 5 MPa*
P1.4	Rating 0	5.2 6.2 6.2 *MV = 6 ± 1*	100% -/Y 100% -/Y 100% -/Y
P1.5	Rating 0	6.2 7.5 7.1 *MV = 7 ± 1*	100% -/Y 100% -/Y 100% -/Y
P1.6	Rating 0	5.8 6.6 6.0 *MV = 6 ± 1*	100% -/Y 100% -/Y 100% -/Y

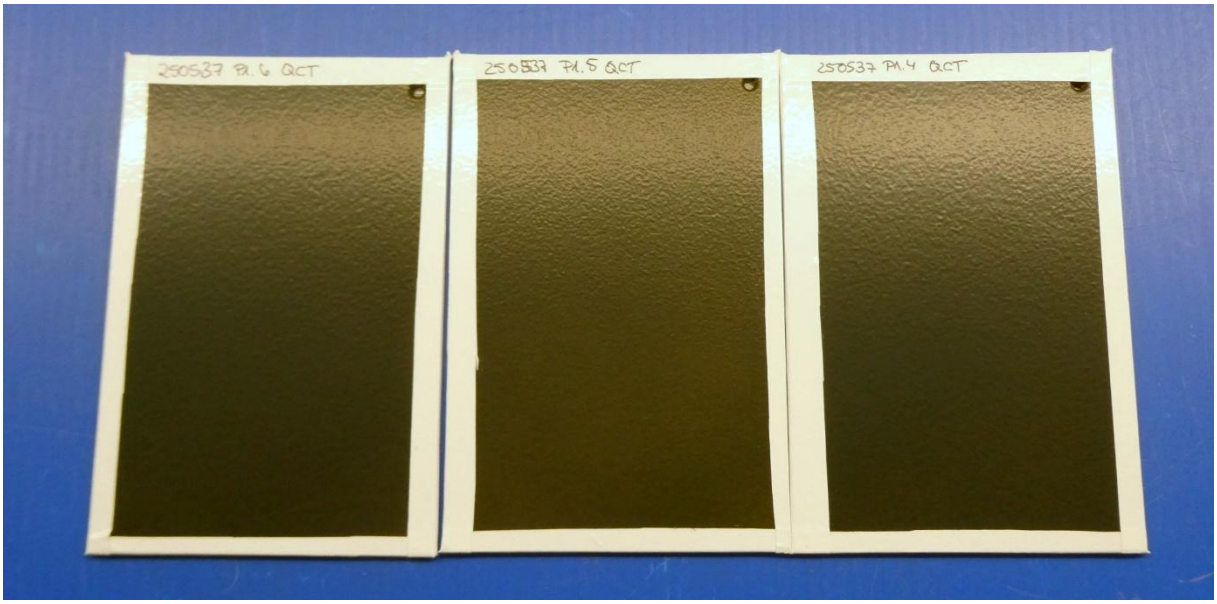

Figure 6: P1.4-P1.6 – Overview

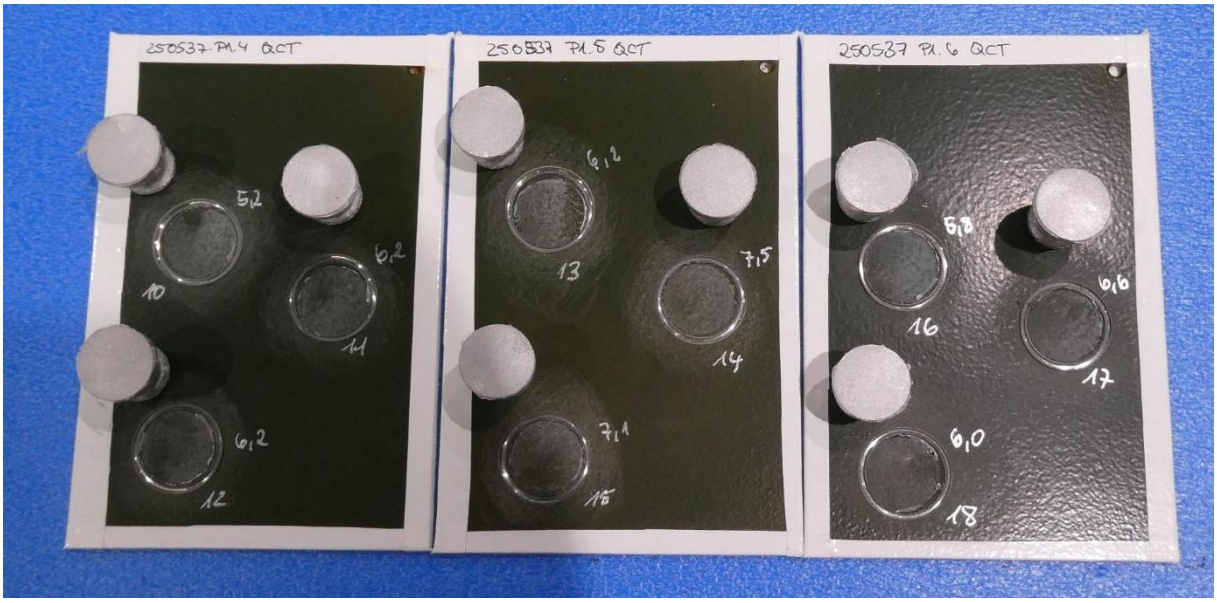

Figure 7: P1.4-P1.6 – Pull-offs

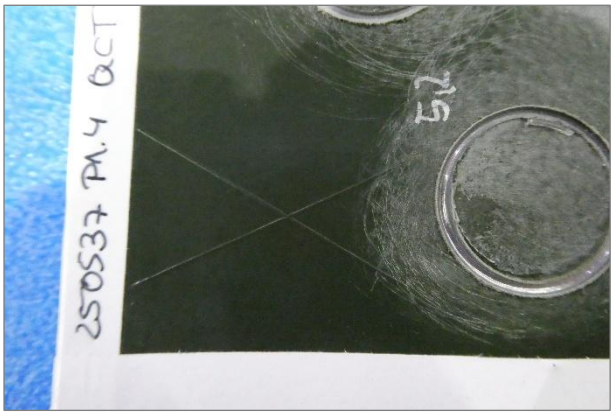

Figure 8: P1.4 – X cut

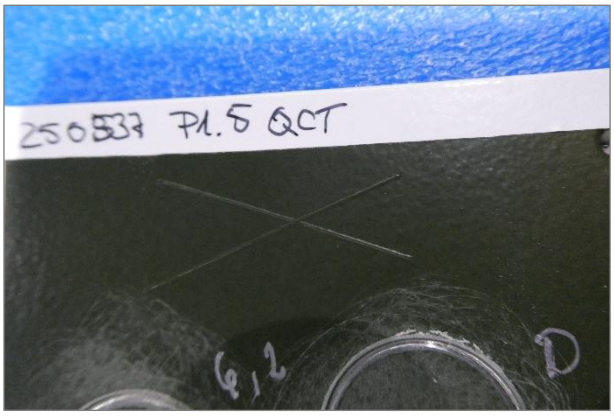

Figure 9: P1.5 – X cut

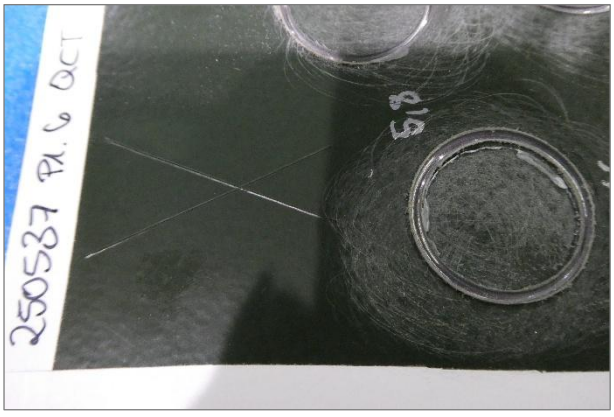

Figure 10: P1.6 – X cut

2.3 Resistance to salt spray (NSS)

Test method: Resistance to salt spray (DIN EN ISO 9227)

Test duration: 1440 h

Scribe-application: 2.0 mm scribe, mortiser

Assessment: Degree of blistering according to DIN EN ISO 4628-2

Degree of rusting according to DIN EN ISO 4628-3

Degree of cracking according to DIN EN ISO 4628-4

Degree of flaking according to DIN EN ISO 4628-5

Corrosion around scribe according to DIN EN ISO 4628-8

X cut according to DIN EN ISO 16276-2 after 7d of recovery, tape: Tesa 4122

Adhesion according to DIN EN ISO 4624 after 7d of recovery, glue: Pattex Ultra Gel

Table 7: Results after exposure to NSS

Sample	**Blistering** *Target: 0 (S0)*	**Rusting** *Target: Ri 0*	**Flaking** *Target: 0 (S0)*	**Cracking** *Target: 0 (S0)*	**Corrosion [mm]** *Target: ≤ 1,5 mm*
P1.7	0 (S0)	Ri 0	0 (S0)	0 (S0)	< 0.5 mm
P1.8	0 (S0)	Ri 0	0 (S0)	0 (S0)	1.7 mm
P1.9	0 (S0)	Ri 0	0 (S0)	0 (S0)	1.4 mm

Table 8: Results after exposure to NSS

Sample	**X cut** *Target: not given*	**Pull-off strength σ** *Target: ≥ 2,5 MPa*	**Type of fracture** *Target: 0 % A/B, unless σ ≥ 5 MPa*
P1.7	Rating 0	8.3 10.0 7.7 *MW = 9 ± 2*	100% -/Y 100% -/Y 100% -/Y
P1.8	Rating 0	6.1 8,3 8.4 *MW = 8 ± 2*	100% -/Y 100% -/Y 100% -/Y
P1.9	Rating 0	7.2 7.9 6.8 *MW = 7 ± 1*	100% -/Y 100% -/Y 100% -/Y

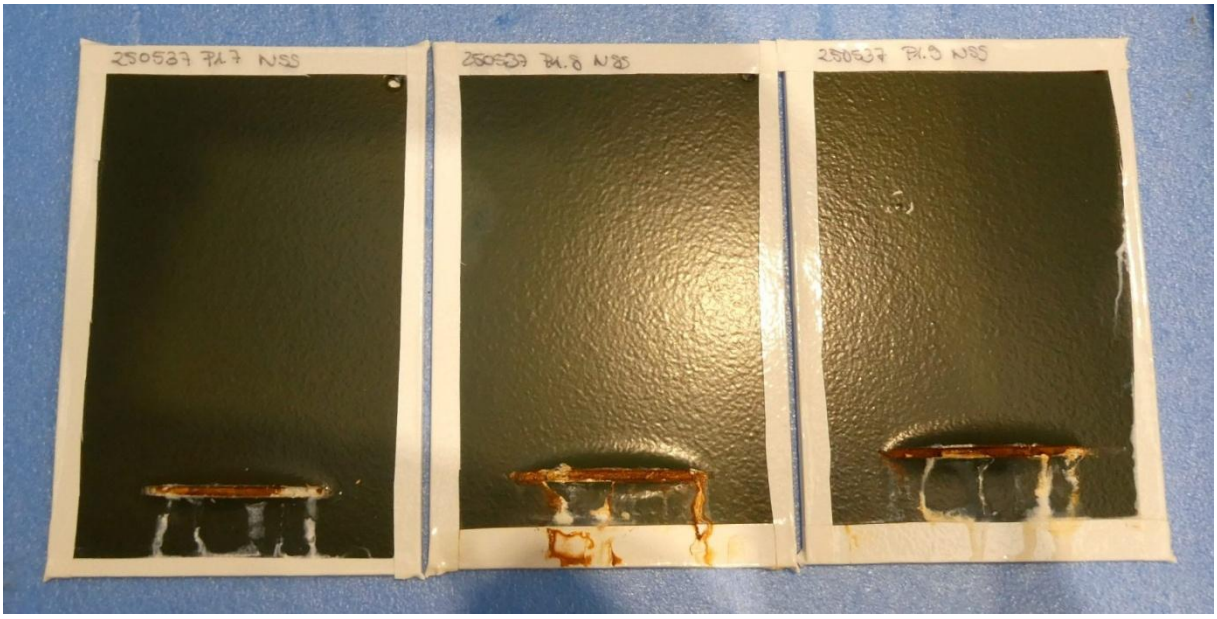

Figure 11: P1.7-P1.9 – Overview

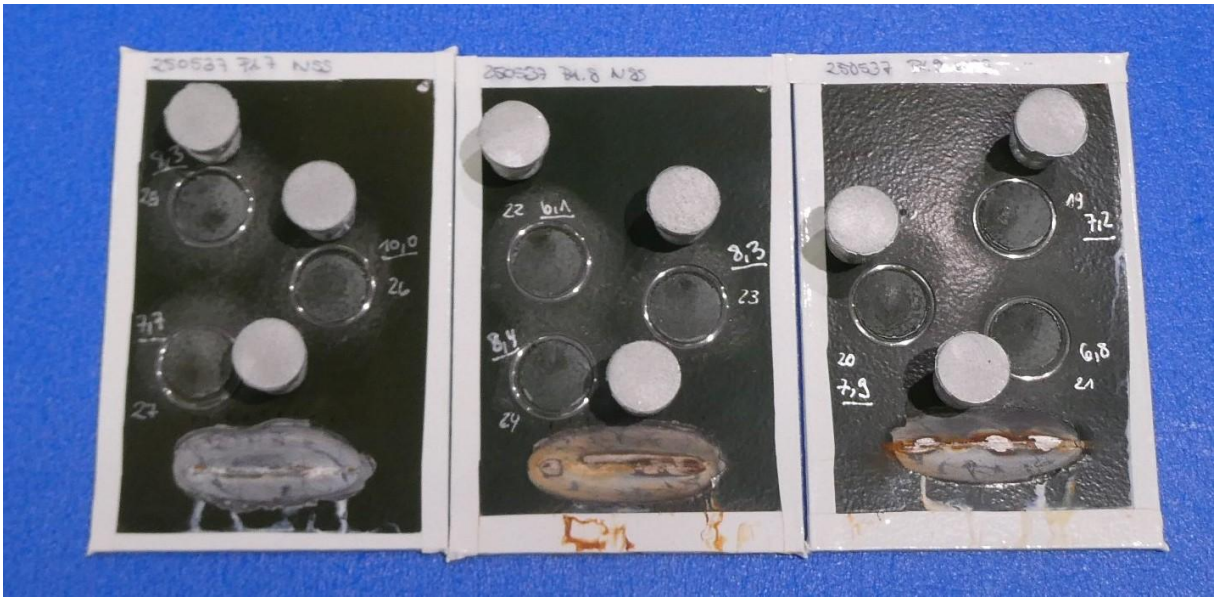

Figure 12: P1.7-P1.9 – Pull-offs

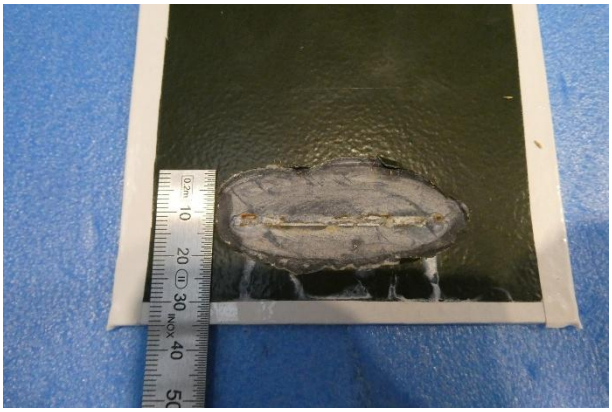

Figure 13: P1.7 – Scribe

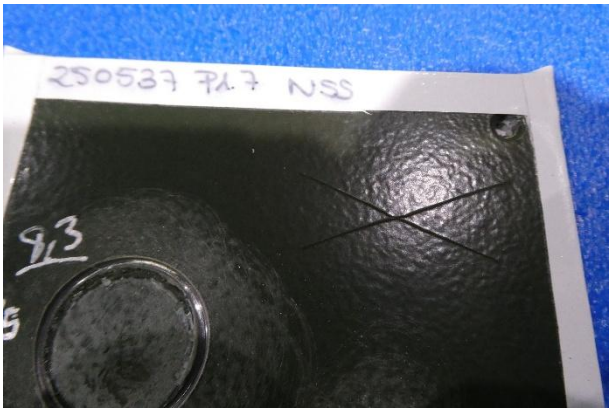

Figure 14: P1.7 – X cut

Figure 15: P1.8 – Scribe

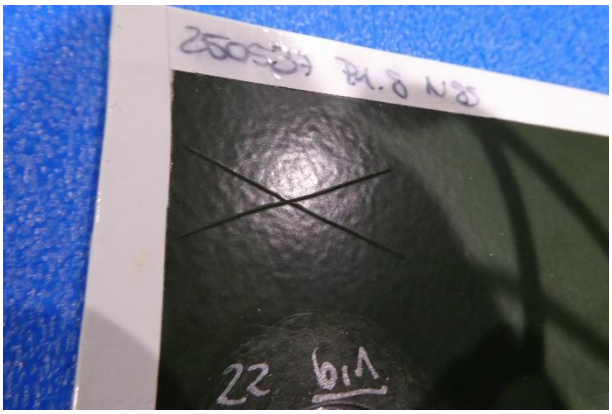

Figure 16: P1.8 – X cut

Figure 17: P1.9 – Scribe

Figure 18: P1.9 – X cut

3 ASSESSMENTS

The coating system tested was comprised of Rackstar® Primer and Rackstar® Part A and fulfils all requirements according to DIN EN ISO 12944-6 for the corrosivity category C5–high.

4 TEST METHODS USED

Table 9: Overview of test methods

Test method	Issue date	accredited
DIN EN ISO 2178	2016	X
DIN EN ISO 4628-2	2016	X
DIN EN ISO 4628-3	2025	X
DIN EN ISO 4628-4	2016	X
DIN EN ISO 4628-5	2023	X
DIN EN ISO 4628-8	2013	X
DIN EN ISO 6270-1	2018	X
DIN EN ISO 9227	2024	X
DIN EN ISO 16276-2	2007	X

Magdeburg, 08/10/2025
iLF Magdeburg GmbH

Dipl.-Chem. Cornelia Dreyer
Head Group Metals

Dr. Bernd Neumann
Person in charge

Notes:

The test results only relate to the items tested and apply to the samples as received. In this report the results are provided in a simplified way, it does not include all information required by the test methods used.