TEST REPORT NO. 250273

CUSTOMER:	Dr. Demuth Derisol Lackfarben GmbH & Co. KG Mr Reiner Meisner Hillerser Straße 8 37154 Northeim
Offer No.	250416
Contract No. / Date:	- / 07/04/2025
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:	08/04/2025
Start of Testing:	09/04/2025
End of Testing:	04/07/2025
Archiving of Samples:	four weeks
Subcontracts:	none
Number od Pages:	11

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

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1 SUBJECT OF TESTING

The client delivered coated steel plates with the following information:

Coating system: Base coat EcoFast UD402 + Hardener HL 404 (mixing ratio by weight 4:1)

Table 1: Designation of samples

Sample name iLF	Sample name customer
P1.1	1
P1.2	2
P1.3	3
P1.4	4
P1.5	5
P1.6	6
P1.7	7
P1.8	8
P1.9	9
P1.10	10
P1.11	11
P1.12	12

Table 2: Sample names and dry film thickness values (DFT) according to ISO 19840 provided by customer

Sample	DFT without correction [µm]	DFT with correction* [µm]
1	132 ± 6	107 ± 6
2	143 ± 5	118 ± 5
3	152 ± 8	127 ± 8
4	154 ± 9	129 ± 9
5	151 ± 9	126 ± 9
6	156 ± 8	131 ± 8
7	133 ± 4	108 ± 4
8	138 ± 6	113 ± 6
9	137 ± 6	112 ± 6
10	139 ± 6	114 ± 6
11	144 ± 8	119 ± 8
12	131 ± 6	106 ± 6

*) a fixed value of 25 µm was subtracted

2 TEST METHODS AND RSULTS

2.1 Dry film thickness

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

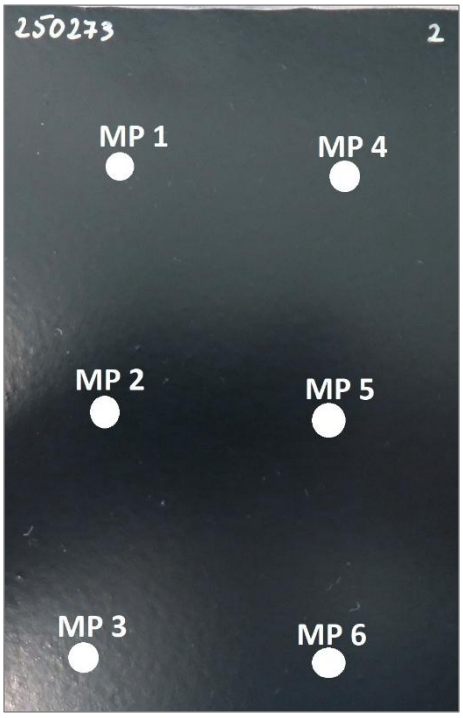

Figure 1: P1.2 – Positions at which DFT-measurements were taken

Table 3: Results of DFT-measurements without correction

Sample	DFT [µm]	MV* [µm]	SD* [µm]	Max. [µm]	Min. [µm]
P1.1	112/118/121 112/116/121	117	5	121	112
P1.2	117/126/124 119/128/128	124	5	128	117
P1.3	129/137/140 122/134/140	134	8	140	122
P1.4	130/137/148 123/133/145	136	10	148	123
P1.5	123/140/143 132/137/148	137	9	148	123
P1.6	130/143/148 130/142/145	140	8	148	130
P1.7	127/120/110 121/119/113	118	7	127	110
P1.8	123/122/119 127/114/118	121	5	127	114
P1.9	122/115/117 132/125/115	121	7	132	115
P1.10	125/125/119 124/121/116	122	4	125	116
P1.11	130/131/125 134/134/131	131	4	134	125
P1.12	117/112/108 119/118/109	114	5	119	108

*) MV = mean value, SD = standard deviation

2.2 Adhesion at state of delivery

Test method: Cross cut according to DIN EN ISO 2409 (tape: Tesa 4122)
Adhesion according to DIN EN ISO 4624 (glue: Pattex Ultra Gel)

Table 4: Results of adhesion tests

Sample	**Cross cut** *Target: Gt 0-2*	**Pull-off strength σ** *Target: ≥ 2,5 MPa*	**Type of fracture** *Target: 0 % A/B, unless σ ≥ 5 MPa*
P1.4	Gt 0	11,2 11,4 11,5 *MV = 11 ± 1*	30% B, 70% -/Y 40% B, 60% -/Y 20% B, 80% -/Y
P1.5	Gt 0	11,1 10,0 11,7 *MV = 11 ± 1*	30% B, 70% -/Y 30% B, 70% -/Y 30% B, 70% -/Y
P1.6	Gt 0	10,7 11,9 12,1 *MV = 12 ± 1*	30% B, 70% -/Y 20% B, 80% -/Y 30% B, 70% -/Y

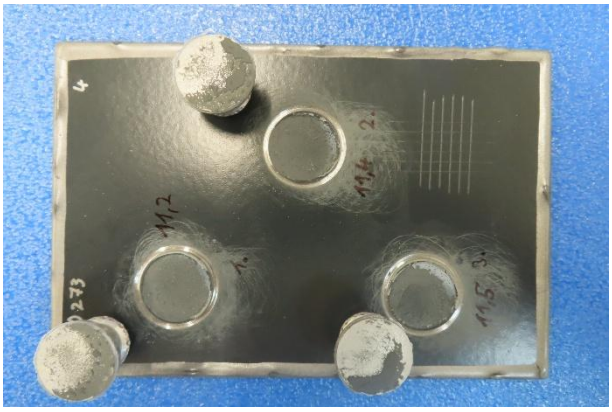

Figure 2: P1.4 – Cross cut + pull-offs

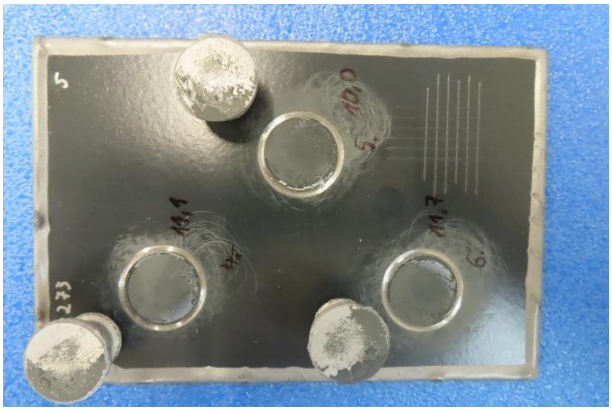

Figure 3: P1.5 – Cross cut + pull-offs

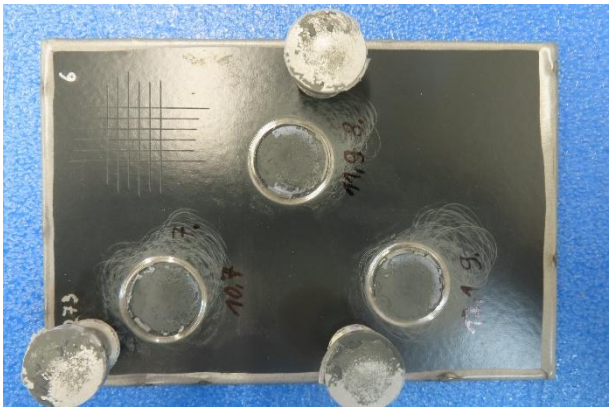

Figure 4: P1.6 – Cross cut + pull-offs

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

Cross cut according to DIN EN ISO 2409 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)*
P1.7	0 (S0)	Ri 0	0 (S0)	0 (S0)
P1.8	0 (S0)	Ri 0	0 (S0)	0 (S0)
P1.9	0 (S0)	Ri 0	0 (S0)	0 (S0)

Table 6: Results after exposure to humidity

Sample	**Cross cut** *Target: 0-2*	**Pull-off strength σ** *Target: ≥ 2,5 MPa*	**Type of fracture** *Target: 0 % A/B, unless σ ≥ 5 MPa*
P1.7	Gt 0	13,5 12,9 11,1 *MV = 13 ± 2*	60% B, 40% -/Y 60% B, 40% -/Y 50% B, 50% -/Y
P1.8	Gt 0	13,4 12,0 11,5 *MV = 12 ± 1*	50% B, 50% -/Y 20% B, 80% -/Y 50% B, 50% -/Y
P1.9	Gt 0	13,0 12,8 11,9 *MV = 13 ± 1*	40% B, 60% -/Y 30% B, 70% -/Y 40% B, 60% -/Y

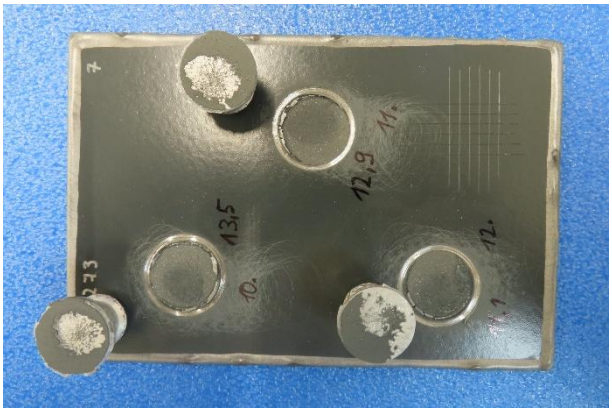

Figure 5: P1.7 – Cross cut + pull-offs

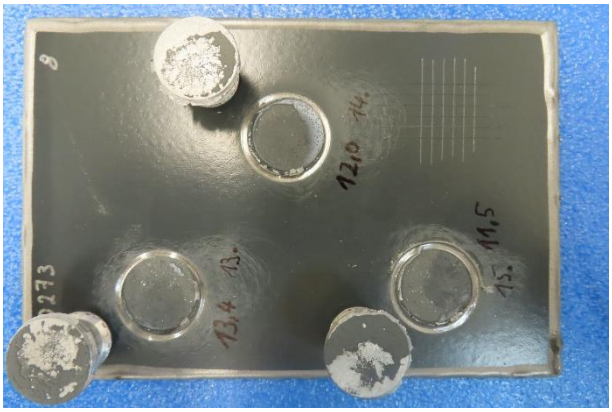

Figure 6: P1.8 – Cross cut + pull-offs

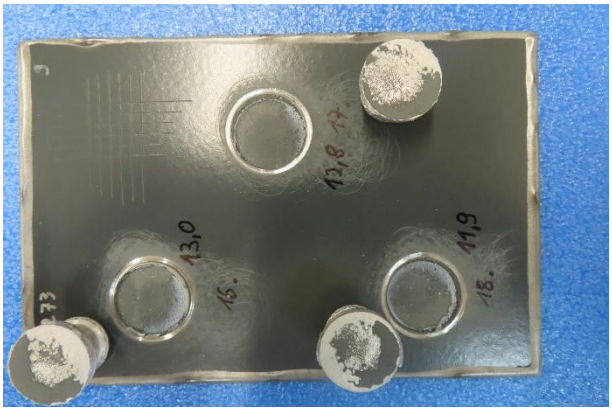

Figure 7: P1.9 – Cross cut + pull-offs

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

Delamination / corrosion around scribe according to DIN EN ISO 4628-8

Cross cut according to DIN EN ISO 2409 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*
P1.10	0 (S0)	Ri 0	0 (S0)	0 (S0)	< 0.5 mm
P1.11	0 (S0)	Ri 0	0 (S0)	0 (S0)	< 0.5 mm
P1.2	0 (S0)	Ri 0	0 (S0)	0 (S0)	< 0.5 mm

Table 8: Results after exposure to NSS

Sample	**Cross cut** *Target: Gt 0-2*	**Pull-off strength σ** *Target: ≥ 2,5 MPa*	**Type of fracture** *Target: 0 % A/B, unless σ ≥ 5 MPa*
P1.10	Gt 0	12,0 10,3 11,2 *MW = 11 ± 1*	30% B, 70% -/Y 10% A/B, 10% B, 80% -/Y 30% B, 70% -/Y
P1.11	Gt 0	11,5 11,3 12,1 *MW = 12 ± 1*	20% B, 80% -/Y 20% B, 80% -/Y 30% B, 70% -/Y
P1.2	Gt 0	11,0 12,0 9,5 *MW = 11 ± 2*	10% B, 90% -/Y 10% B, 90% -/Y 50% B, 50% -/Y

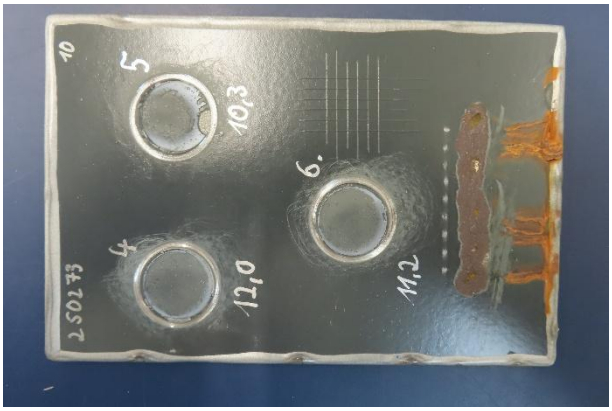

Figure 8: P1.10 – Cross cut + pull-offs

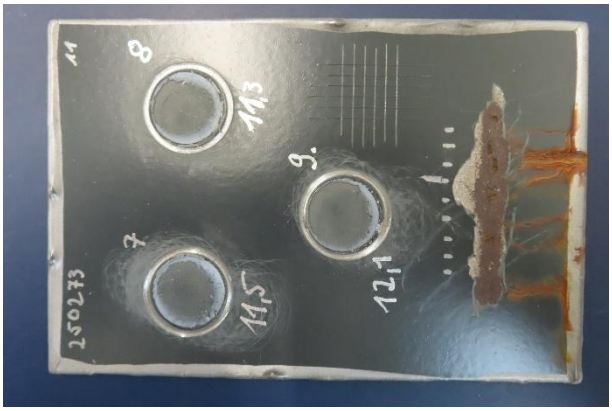

Figure 9: P1.11 – Cross cut + pull-offs

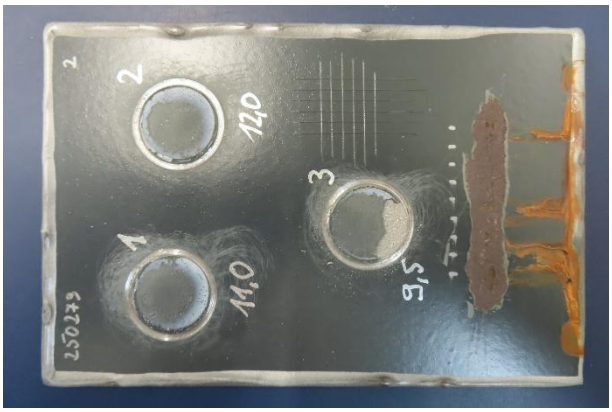

Figure 10: P1.2 – Cross cut + pull-offs

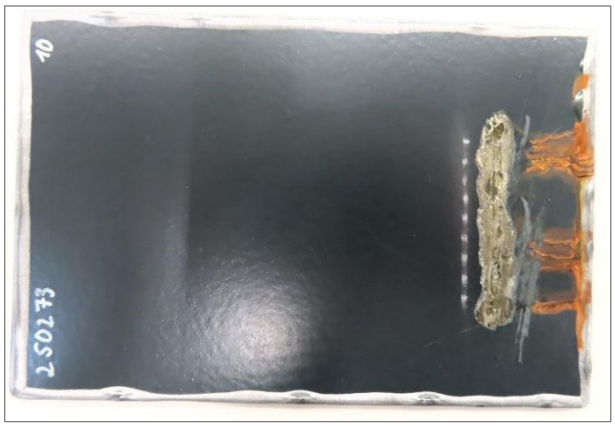

Figure 11: P1.10 – Scribe

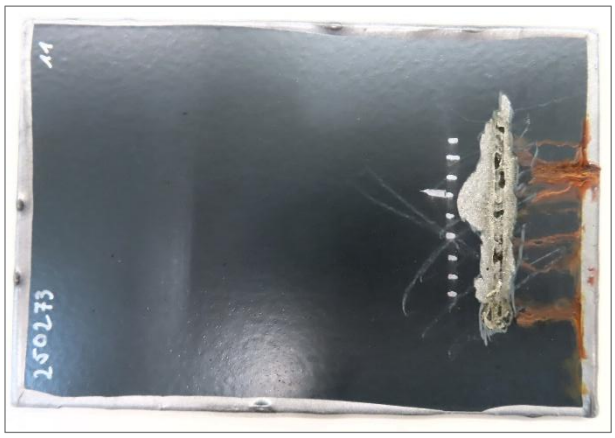

Figure 12: P1.11 – Scribe

Figure 13: P1.2 – Scribe

3 ASSESSMENTS

The coating system tested was comprised of Base coat EcoFast UD402D + Hardener HL 404 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 2409	2020	X
DIN EN ISO 2178	2016	X
DIN EN ISO 4628-2	2016	X
DIN EN ISO 4628-3	2016	X
DIN EN ISO 4628-4	2016	X
DIN EN ISO 4628-5	2016	X
DIN EN ISO 4628-8	2016	X
DIN EN ISO 6270-1	2018	X
DIN EN ISO 9227	2024	X

Magdeburg, 23/07/2025
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.