



COT bv
Independent advice,
research and
management for
construction and
industry



REPORT

Determination of the adhesion of adhesive tapes

Civil projects
Corrosionprotection
Laboratory

Haarlem, May 20th 2011

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INHOUD

1	INTRODUCTION	3
1.1	General	3
1.2	Aim.....	3
2	PROCEDURE	3
2.1	Standards.....	3
2.2	Tapes.....	3
2.3	Determination of the peel adhesion.....	3
2.4	Determination of the influence of the substrate on the peel adhesion	4
2.5	Determination of the temperature on the peel adhesion	4
3	RESULTS	4
3.1	Determination of the peel adhesion.....	4
3.2	Influence of the substrate on the peel adhesion.....	4
3.3	Influence of the temperature on the peel adhesion	7
4	CONCLUSION	8
5	ACTIONS.....	8
6	FINAL CONCLUSION	9



1 INTRODUCTION

1.1 General

Because of problems with respect to the adhesion strength of tape, COT bv has investigated the adhesive strength of various types of tape. From this investigation (see LAB11-0053-REP) two types of tape have been selected for further testing, with regard to the influence of temperature and substrate.

1.2 Aim

The aim of the investigation is to determine the variation in the adhesive strength within one batch of tape rolls, the influence of the temperature on the adhesive strength and the influence of the substrate on the adhesive strength.

2 PROCEDURE

2.1 Standards

The adhesive strength of the tapes, in accordance to EN-ISO 2409, is determined in accordance to IEC 60454-2 "Pressure-sensitive adhesive tapes for electrical purposes – part 2: Methods of test". The adhesive strength interval of the used tape, as defined in the latest edition of the EN-ISO 2409, is 6 to 10 Newton per 25 mm width. The used tape, preferably transparent, shall have be at least 50 mm wide.

All tests have been carried out in accordance to the standards underneath.

- IEC 60454-2 : Pressure-sensitive adhesive tapes for electrical purposes – part 2: methods of tests, chapter 11 Adhesion (2007)
- NEN-EN-ISO 2409 : Paints and varnishes – Cross-cut test (2007)

2.2 Tapes

The following tapes have been tested in this investigation:

- Tape A, supplier TESA, width 50 mm;
- Tape B, supplier Scotch, width 50 mm.

2.3 Determination of the peel adhesion

The determination of the peel adhesion of the two types of tape has been carried out according to ISO 2409 and IEC 60454-2 at 23 ± 1 °C and 50 ± 5 % relative humidity (RH).

The rolls of tape to be tested have been conditioned for at least one week at the same temperature and RH.

In accordance to IEC 60454-2, chapter 11, a length of adhesive tape is applied to a standard stainless steel panel, which is fixed vertically in one clamp of a tensile strength testing machine. The other clamp of the machine pulls the free end of the adhesive tape at an angle of 180° to the panel. The peel adhesion is measured by the force required to peel the adhesive tape continuously from the panel, which corresponds to Method A of this standard.

Test panels of stainless steel with dimensions 200 x 100 x 2 mm have been used. On the edges of each panel six markings have been made 20 mm apart. The first marking has been made 50 mm from the bottom of the panel.

Before testing all panels have been cleaned with methanol and methyl ethyl ketone. The first tape sample has been applied on the stainless steel panel 10 minutes after cleaning. The tape sample, with a length of 30 cm, has been pressed to the surface using a rubber roller and a mass of 2 kilograms.

Within 5 minutes from applying the tape sample, the tape sample has been peeled off the surface using a calibrated tensile strength instrument with a uniform rate of 300 ± 12 mm/min. The corresponding force, expressed in Newton, is measured continuous and presented in a graph. Using

this graph the force (N) at 40, 80, 120, 160 and 200 mm, corresponding to the markings on the test panel, are read. The average value is calculated.

In total 5 rolls per type of tape have been tested, each roll of tape has been tested in 5 fold.

2.4 Determination of the influence of the substrate on the peel adhesion

In total 30 paint samples applied on glass panels have been tested as described in 2.3. The types of paint are mentioned in appendix II.

2.5 Determination of the temperature on the peel adhesion

The influence of the temperature on the peel adhesion has been determined at 10 ± 1 °C, 23 ± 2 °C and 35 ± 1 °C on stainless steel panels. All materials (tape samples, stainless steel panels, clamps and rubber roll) have been conditioned at these temperatures for at least 24 hours.

3 RESULTS

3.1 Determination of the peel adhesion

In Table 1 the average values and the standard deviation have been reported for each tested roll. The separate test results are added in Annex I of this report.

Table 1: Peel adhesion tape A and B at 23 °C and 50 % RH

TAPE	ROLL NUMBER	PEEL ADHESION (N/50 mm)	PEEL ADHESION (N/25 mm)
A	1	17.8 ± 1.0	8.9 ± 0.5
A	2	19.2 ± 0.8	9.6 ± 0.4
A	3	19.5 ± 0.6	9.7 ± 0.3
A	4	19.7 ± 0.8	9.9 ± 0.4
A	5	19.4 ± 1.1	9.7 ± 0.6
AVERAGE		19.1 ± 0.9	9.6 ± 0.4
B	1	13.2 ± 0.8	6.6 ± 0.4
B	2	13.0 ± 0.7	6.5 ± 0.4
B	3	13.4 ± 0.9	6.7 ± 0.4
B	4	13.4 ± 0.7	6.7 ± 0.3
B	5	13.3 ± 1.3	6.6 ± 0.7
AVERAGE		13.3 ± 0.9	6.6 ± 0.4

3.2 Influence of the substrate on the peel adhesion

In Table 2 the average values of the peel adhesion for tape A and B for the various substrates are given. The separate test results as well as the types of substrates are added in Annex II of this report



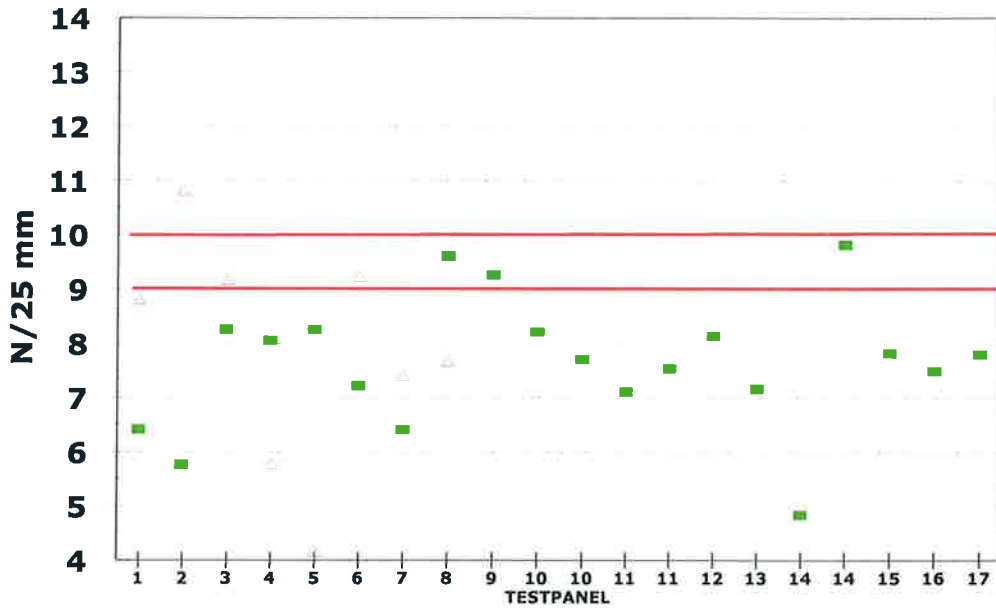
Table 2: Peel adhesion tape A and B at 23 °C and 50 % RH on various substrates

COT NUMBER SUBSTRATE	TAPE	ROLL NUMBER	PEEL ADHESION (N/50 mm)	PEEL ADHESION (N/25 mm)
0569	A	3	17.6	8.8
0570	A	3	21.6	10.8
0571	A	3	18.3	9.2
0572	A	3	11.6	5.8
0573	A	3	8.3	4.2
0574	A	3	18.5	9.2
0583	A	3	14.8	7.4
0584	A	3	15.3	7.7
0588	A	3	14.5	7.2
0589	A	3	21.9	11.0
0578	A	3	12.8	6.4
0579	A	3	11.5	5.8
0580	A	3	16.5	8.3
0581	A	3	16.1	8.1
0581	A	3	16.5	8.3
0582	A	3	14.4	7.2
0582	A	3	12.8	6.4
0585	A	3	19.2	9.6
0585	A	3	18.6	9.3
0586	A	3	16.4	8.2
0587	A	3	15.4	7.7
0592	A	3	15.1	7.5
0593	A	3	16.3	8.1
0594	A	3	14.3	7.2
0595	A	3	9.7	4.8
0596	A	3	19.6	9.8
0596	A	3	15.6	7.8
0597	A	3	15.0	7.5
0598	A	3	15.6	7.8
0584	B	4	12.9	6.4
0585	B	4	16.8	8.4
0579	B	4	7.4	3.7
0580	B	4	10.7	5.3
0581	B	4	12.0	6.0
0581	B	4	11.1	5.6
0582	B	4	8.0	4.0
0583	B	4	11.9	6.0
0585	B	4	10.6	5.3
0585	B	4	10.2	5.1
0586	B	4	16.8	8.4
0596	B	4	14.7	7.3
0596	B	4	15.4	7.7
0597	B	4	12.3	6.1
0598	B	4	12.8	6.4

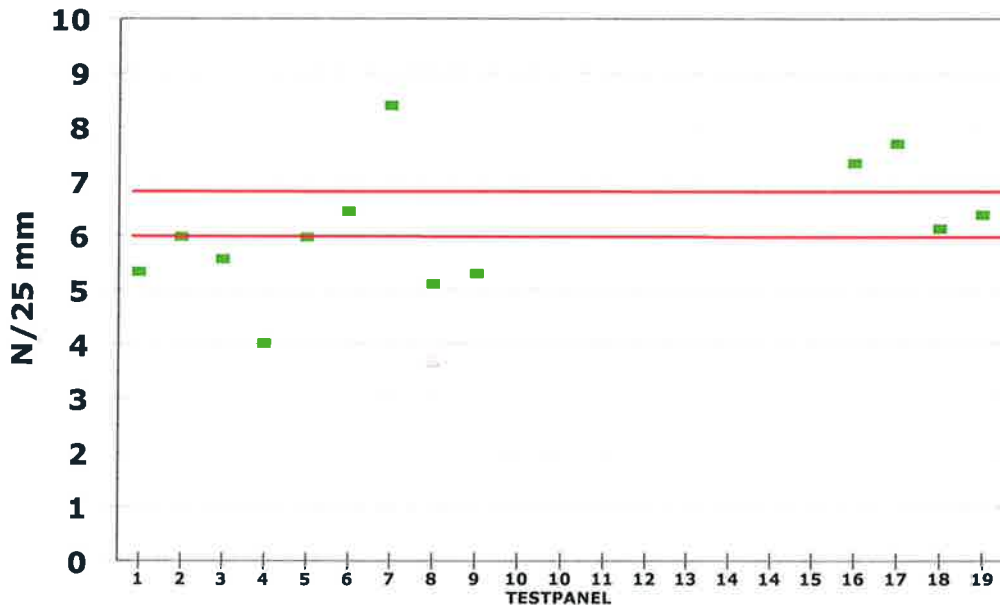
In the following graphs the values from Table 2 are presented graphically. Because of a lack of test panels the number of determinations with tape B had to be limited. The red lines in the graph represent \pm the standard deviation from the test on stainless steel.



TAPE A ROLL 3



TAPE B ROLL 4

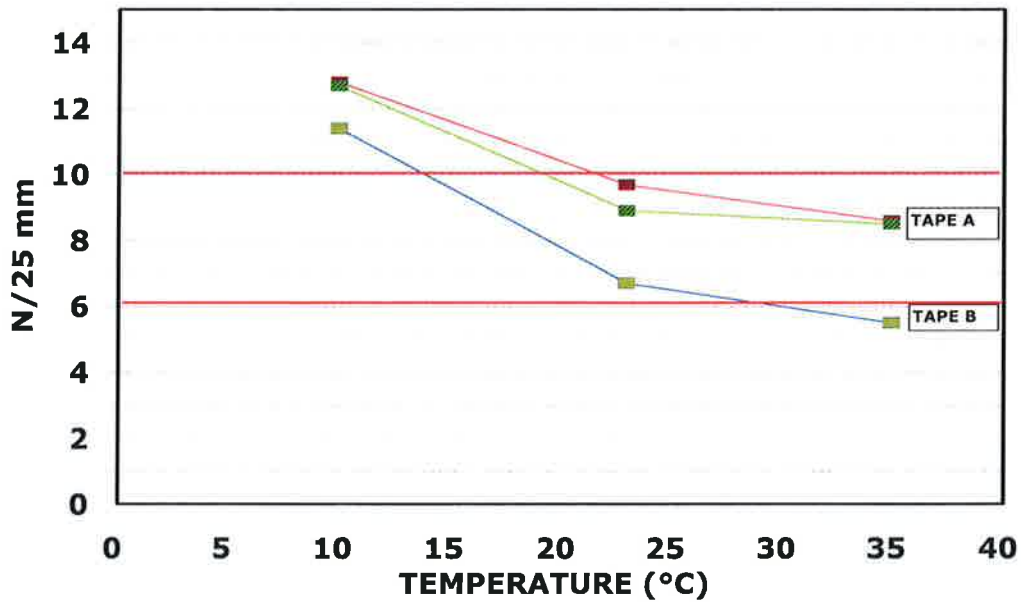


3.3 Influence of the temperature on the peel adhesion

In Table 3 the results of the measurements at various temperatures are given. The tested rolls have been selected based upon the average peel adhesion from Table 1. The separate test results have been added in Annex III of this report.

Table 3: Influence of the temperature on the peel adhesion measured on stainless steel panels.

TAPE	ROLL NUMBER	TEMPERATURE (°C)	PEEL ADHESION (N/50 mm)	PEEL ADHESION (N/25 mm)
A	3	35	17.2 ± 0.2	8.6 ± 0.1
A	3	23	19.4 ± 0.6	9.7 ± 0.3
A	3	10	25.6 ± 0.6	12.8 ± 0.3
A	1	35	17.0 ± 0.4	8.5 ± 0.2
A	1	23	17.8 ± 1.0	8.9 ± 0.5
A	1	10	25.4 ± 0.4	12.7 ± 0.2
B	4	35	17.0 ± 0.4	5.5 ± 0.3
B	4	23	17.8 ± 1.0	6.7 ± 0.3
B	4	10	22.8 ± 1.2	11.4 ± 0.6





4 CONCLUSION

- Based upon the results from Table 1 both tapes A and B meet the requirement of ISO 2409, 8 ± 2 N/25 mm, determined at 23 ± 2 °C and 50 ± 5 % RH and stainless steel panels as substrate.
- The peel adhesion of tape A meets the requirement of ISO 2409 at temperatures > 21 °C, tape B meets this requirement at temperatures between 15 and 29 °C.
- The peel adhesion of both tapes increases at falling temperatures and decreases at rising temperatures (Note: at low temperatures the possibility of surface condensation exists.)
- With regard to results of the peel adhesion on various substrates the only possible conclusion can be that the majority of the results are lower than the results obtained on stainless steel panels.
The peel adhesion of tape B becomes smaller than 6 N/25 mm which is in itself no cause for rejection based upon the requirement according to ISO 2409.
- A direct correlation between the peel adhesion on the one hand and the various substrates (paints) has not been found.

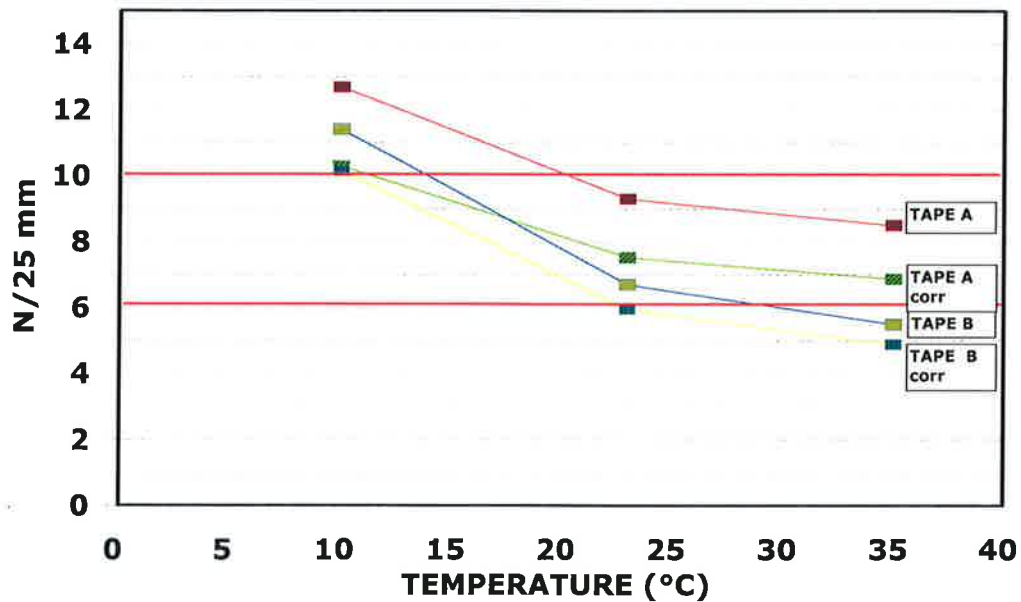
5 ACTIONS

Laboratory

- For laboratory tests both tape A as tape B are suitable. Both tapes meet the requirements according to ISO 2409 at 23 ± 2 °C and 50 ± 5 % RH on stainless steel panels.
- All tape samples shall be tested according to ISO 2409 before use. Before testing a minimum conditioning period of 1 week at 23 ± 2 °C and 50 ± 5 % RH is recommended.
- The ageing effect at 23 ± 2 °C and 50 ± 5 % RH on the peel adhesion will be determined of the samples tape A roll 3 and tape B roll 4.

Consultancy department

- For adhesion tests on site both tape A and tape B meet the requirement of ISO 2409.
- The average peel adhesion on the various substrates (paints) is for tape A: $7,8 \pm 1,6$ N/25 mm and for tape B: $5,9 \pm 0,3$ N/25 mm. This means an decrease of the average peel adhesion on stainless steel panels of 19 % for tape A and 11 % for tape B.
If this average correction for the various substrates is applied to the results of the determination of the influence of the temperature the following graph is obtained.



The graph for tape A (TAPE A corr) shows that based upon this arbitrary correction the tape can be used on various substrates from 10 °C to 35 °C. For tape B this temperature interval is between 11 °C and 22 °C.

Based upon the for mentioned tape A is to be preferred over tape B for adhesion measurements on site.

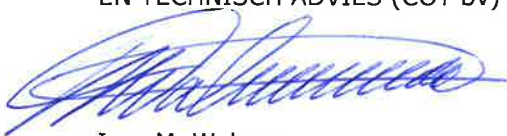
Special attention for:

- Each new roll of tape has to be tested before use in the laboratory or on site.
- The roll of tape is to be stored at normal temperatures (15 – 25 °C).
- Measure the surface temperature of the test object (as well as the air temperature).
- Avoid surface condensation.

6 FINAL CONCLUSION

Based upon the results, conclusions and actions it has been decided to use tape A for both the COT laboratory as well as the COT consultancy department.

CENTRUM VOOR ONDERZOEK
EN TECHNISCH ADVIES (COT bv)



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APPENDIX I

Peel adhesion tape A and B at 23 ± 2 °C and 50 ± 5 % RH on stainless steel panels.



Table 1: Peel adhesion tape A in N/25 mm at 23 ± 2 °C and 50 ± 5 % RH on stainless steel panels.

ROLL 1	40	80	120	160	200	AVG	STD
1	8.700	8.600	8.650	8.350	7.550	8.4	0.5
2	8.450	8.700	8.450	8.375	7.090	8.2	0.6
3	8.300	8.453	8.350	8.570	6.750	8.1	0.8
4	9.950	10.233	10.300	10.145	9.800	10.1	0.2
5	9.500	10.000	10.100	10.050	9.290	9.8	0.4
						8.9	0.5
ROLL 2	40	80	120	160	200	AVG	STD
1	9.460	9.685	9.900	9.900	8.900	9.6	0.4
2	9.400	9.435	9.350	9.550	8.950	9.3	0.2
3	7.900	9.950	10.350	9.950	9.850	9.6	1.0
4	9.650	10.300	10.420	10.200	10.065	10.1	0.3
5	9.450	9.353	9.485	9.500	9.530	9.5	0.1
						9.6	0.4
ROLL 3	40	80	120	160	200	AVG	STD
1	10.145	10.300	10.300	10.100	10.100	10.2	0.1
2	10.060	10.170	10.225	10.000	10.000	10.1	0.1
3	9.300	9.750	9.800	9.750	9.845	9.7	0.2
4	10.000	9.600	9.680	9.550	8.175	9.4	0.7
5	9.020	9.820	9.364	9.300	9.291	9.4	0.3
						9.7	0.3
ROLL 4	40	80	120	160	200	AVG	STD
1	10.535	10.250	10.800	10.500	10.150	10.4	0.3
2	9.350	9.650	9.745	10.040	8.500	9.5	0.6
3	9.750	9.800	9.685	9.450	9.550	9.6	0.1
4	9.850	9.750	9.703	9.850	8.000	9.4	0.8
5	10.545	10.415	10.300	10.130	9.985	10.3	0.2
						9.9	0.4
ROLL 5	40	80	120	160	200	AVG	STD
1	9.180	9.250	8.885	9.105	9.450	9.2	0.2
2	9.800	9.705	9.700	10.100	9.800	9.8	0.2
3	10.165	9.950	10.330	10.380	7.750	9.7	1.1
4	9.850	9.250	9.650	9.425	7.680	9.2	0.9
5	10.450	10.865	10.490	10.800	10.035	10.5	0.3
						9.7	0.5



Table 2: Peel adhesion tape B in N/25 mm at 23 ± 2 °C and 50 ± 5 % RH on stainless steel panels.

ROLL 1	40	80	120	160	200	AVG	STD
1	6.980	6.100	5.800	6.155	6.100	6.2	0.4
2	6.570	6.350	6.365	6.500	6.540	6.5	0.1
3	6.260	6.750	6.750	6.615	6.550	6.6	0.2
4	7.350	6.820	5.850	6.755	6.190	6.6	0.6
5	6.125	7.690	7.400	6.955	7.350	7.1	0.6
						6.6	0.4
ROLL 2	40	80	120	160	200	AVG	STD
1	6.550	6.050	5.850	5.900	5.665	6.0	0.3
2	6.725	6.900	6.700	6.250	6.350	6.6	0.3
3	7.110	5.970	6.350	6.400	6.100	6.4	0.4
4	6.350	6.600	5.800	6.620	5.840	6.2	0.4
5	7.640	7.450	7.195	7.300	6.630	7.2	0.4
						6.5	0.4
ROLL 3	40	80	120	160	200	AVG	STD
1	6.535	6.750	6.850	7.080	6.980	6.8	0.2
2	7.440	6.725	6.435	6.050	5.800	6.5	0.6
3	7.840	7.280	7.325	8.060	7.650	7.6	0.3
4	7.260	6.590	6.550	6.950	5.900	6.7	0.5
5	6.820	5.510	5.850	5.750	5.600	5.9	0.5
						6.7	0.4
ROLL 4	40	80	120	160	200	AVG	STD
1	6.280	6.650	6.375	6.620	6.370	6.5	0.2
2	7.150	7.300	6.568	7.070	7.150	7.0	0.3
3	6.400	5.900	5.800	6.050	5.200	5.9	0.4
4	7.100	6.425	7.435	7.410	6.600	7.0	0.5
5	6.841	7.700	7.325	7.170	6.820	7.2	0.4
						6.7	0.3
ROLL 5	40	80	120	160	200	AVG	STD
1	6.650	7.850	6.700	6.245	6.500	6.8	0.6
2	7.785	6.650	6.850	7.445	5.200	6.8	1.0
3	6.990	7.725	6.555	6.100	5.850	6.6	0.7
4	6.850	6.400	6.150	7.300	5.940	6.5	0.5
5	6.800	7.150	6.700	6.350	5.700	6.5	0.5
						6.7	0.7

APPENDIX II

Peel adhesion of tape A and B at 23 ± 2 °C and 50 ± 5 % RH on various substrates.





Table 1: Peel adhesion tape A in N/25 mm at 23 ± 2 °C and 50 ± 5 % RH on various substrates.

PAINTCODE	SUPPLIER	NAME	TYPE	COLOUR	CODE	20 mm	40 mm	60 mm	80 mm	100 mm
0569	Karwei	Best budget buy	Hoogglans	wit	I	9.150	9.435	9.000	9.040	7.393
0570	Maxeda diy group	Base line	Hoogglans	wit	I	11.550	11.400	11.400	10.850	8.850
0571	Gamma	Gamma	Hoogglans briljant	wit	I	10.050	9.490	9.420	9.550	7.300
0572	Histor	Histor	Hoogglans briljant	wit	I	5.975	6.050	5.950	6.300	4.600
0573	Gamma	Gamma	Hoogglans briljant	signaal rood	I	4.350	4.700	4.130	4.250	3.350
0574	Histor	Histor	Hoogglans briljant	vuurpijl knipholia	I	9.650	9.650	9.140	9.250	8.500
0578	Sps	Actie Promo	Muurverf	wit	III	6.650	6.550	6.450	6.850	5.550
0579	Maxeda diy group	Base line	Latex	wit	III	5.600	5.550	5.800	6.050	5.750
0580	Ostendorf	Ostendorf	Promo Vinyl	wit	III	8.250	8.400	8.260	8.150	8.200
0581	Gamma	Gamma	Superdek	Buffel bruin	III	7.900	8.250	7.750	8.150	8.200
0582	Ostendorf	Ostendorf	Superdek mat	Buffel	III	8.640	8.300	8.100	8.065	8.160
0582					III	7.520	7.250	7.250	7.450	6.630
0583	Gamma	Quality paint	Matte lak	wit	I	6.425	6.550	6.700	6.750	5.600
0584	Ostendorf	Ostendorf	Q paintlak mat	wit	I	7.810	7.430	6.896	7.750	7.115
0585	Karwei	Sfeer tinten	Muurverf	zink grijs	III	7.875	7.720	7.550	7.950	7.223
0595					III	9.350	9.785	9.841	9.500	9.515
0586	Ostendorf	Ostendorf	Karwei Muurverf	zink grijs	III	9.500	9.490	9.580	9.450	8.355
0587	Akzo	Flexa	Long island	puur klezel 4002	III	8.285	8.400	8.600	8.750	6.995
0588	Gamma	Gamma	G 1 buitenlak	creme wit	III	7.680	7.590	7.750	7.765	7.740
0589	Ostendorf	Ostendorf	G 1 buitenlak high solid	creme wit	I	7.750	7.450	7.050	7.380	6.600
0591	Gamma	Color collection	Muurverf mat	creme wit	I	11.950	11.600	11.800	11.550	7.900
0592	Histor	Histor	Perfect finish mat	wit	III	7.750	8.000	7.000	7.030	5.740
0593	Sps	Sps	Huismerk wit	wit	III	7.100	7.150	7.980	7.885	7.555
0594	Ostendorf	Ostendorf	Huismerk wit	wit	III	8.450	7.900	8.300	8.675	7.350
0595	Histor	Histor	Monodek	wit	III	7.300	7.200	7.650	7.350	6.300
0596	Sps	Sps	huismerk prof	wit	III	3.700	5.200	4.864	4.850	5.550
0596					III	10.000	9.850	9.610	9.850	9.745
0597	Ostendorf	Ostendorf	huismerk prof	wit	III	8.100	7.773	7.690	7.900	7.595
0598	Histor	Histor	Super latex	wit	III	7.315	7.240	7.720	7.900	7.245
0598					III	7.665	7.815	7.950	8.210	7.335



Table 2: Peel adhesion tape B in N/25 mm atj 23 ± 2 °C and 50 ± 5 % RH on various substrates.

PAINTCODE	SUPPLIER	NAME	TYPE	COLOUR	CODE	20 mm	40 mm	60 mm	80 mm	100 mm
0579	Maxeda diy group	Base line	Latex	wit	III	3.350	3.750	3.430	3.865	4.000
0580	Ostendorf	Ostendorf	Promo Vinyl	wit	III	4.810	5.485	5.950	5.820	4.580
0581	Gamma	Gamma	Superdek	Buffel bruin	III	5.650	5.790	6.000	6.200	6.250
0582					III	5.285	5.890	5.700	6.030	4.915
0582	Ostendorf	Ostendorf	Superdek mat	Buffel	III	4.250	4.900	4.245	2.700	3.910
0583	Gamma	Quality paint	Matte lak	wit	III	5.950	6.200	6.000	6.250	5.450
0584	Ostendorf	Ostendorf	Q paintlak mat	wit	I	6.400	6.250	6.850	6.000	6.700
0585	Karwei	Sfeer tinten	Muurverf	zink grijs	I	8.500	8.220	8.650	8.375	8.230
0586	Ostendorf	Ostendorf	Karwei Muurverf	zink grijs	III	5.050	5.100	5.285	4.900	5.200
0586					III	6.000	6.400	5.700	3.450	4.950
0596	Sps	Sps	huismerk prof	wit	III	7.300	7.300	7.550	7.250	7.250
0596					III	7.550	7.565	7.700	7.700	7.950
0597	Ostendorf	Ostendorf	huismerk prof	wit	III	5.800	6.415	6.445	6.450	5.520
0598	Histor	Histor	Super latex	wit	III	6.740	7.050	6.580	6.450	5.065

Code I = Laquer indoors/outdoors

Code III = Latex indoors/outdoors



APPENDIX III

Peel adhesion of tape A and B at 10, 23 and 35 °C on stainless steel panels.



Table 1: Peel adhesion tape A in N/25 mm at 23 ± 2 °C and 50 ± 5 % RH on stainless steel panels.

ROLL 1	40	80	120	160	200	AVG	STD
1	8.700	8.600	8.650	8.350	7.550	8.4	0.5
2	8.450	8.700	8.450	8.375	7.090	8.2	0.6
3	8.300	8.453	8.350	8.570	6.750	8.1	0.8
4	9.950	10.233	10.300	10.145	9.800	10.1	0.2
5	9.500	10.000	10.100	10.050	9.290	9.8	0.4
ROLL 3	40	80	120	160	200	AVG	STD
1	10.145	10.300	10.300	10.100	10.100	10.2	0.1
2	10.060	10.170	10.225	10.000	10.000	10.1	0.1
3	9.300	9.750	9.800	9.750	9.845	9.7	0.2
4	10.000	9.600	9.680	9.550	8.175	9.4	0.7
5	9.020	9.820	9.364	9.300	9.291	9.4	0.3

Table 2: Peel adhesion tape A in N/25 mm at 10 ± 1 °C on stainless steel panels.

ROLL 1	20	40	60	80	100	AVG	STD
1	13.550	13.393	13.433	12.980	13.250	13.3	0.2
2	12.550	12.900	12.980	13.000	13.100	12.9	0.2
3	12.665	12.710	12.400	12.400	12.350	12.5	0.2
4	13.150	12.965	12.835	12.905	13.300	13.0	0.2
5	12.650	12.300	12.190	11.760	11.930	12.2	0.3
ROLL 3	20	40	60	80	100	AVG	STD
1	13.250	13.350	13.250	13.300	0.000	13.3	0.0
2	12.655	12.850	13.200	13.110	13.400	13.0	0.3
3	12.400	13.550	12.650	13.295	13.430	13.1	0.5
4	12.680	12.600	12.780	12.355	12.500	12.6	0.2
5	12.050	12.300	12.600	12.535	12.550	12.4	0.2

Table 3: Peel adhesion tape A in N/25 mm at 35 ± 1 °C on stainless steel panels.

ROLL 1	20	40	60	80	100	AVG	STD
1	9.100	8.760	8.865	8.750	8.650	8.8	0.2
2	8.600	8.595	8.800	8.365	8.555	8.6	0.2
3	8.550	8.000	8.215	8.100	8.100	8.2	0.2
4	8.450	8.350	8.685	8.630	8.400	8.5	0.1
5	8.413	8.550	8.530	8.150	8.290	8.4	0.2
ROLL 3	20	40	60	80	100	AVG	STD
1	8.620	8.470	8.500	8.355	8.345	8.5	0.1
2	8.550	8.450	8.520	8.500	8.420	8.5	0.1
3	8.550	8.450	8.330	8.465	8.390	8.4	0.1
4	9.000	8.860	9.015	8.610	9.050	8.9	0.2
5	9.000	9.060	8.850	8.910	8.935	9.0	0.1



Table 4: Peel adhesion tape B in N/25 mm at 23 ± 2 °C and 50 ± 5 % RH on stainless steel panels.

ROLL 4	40	80	120	160	200	AVG	STD
1	6.280	6.650	6.375	6.620	6.370	6.5	0.2
2	7.150	7.300	6.568	7.070	7.150	7.0	0.3
3	6.400	5.900	5.800	6.050	5.200	5.9	0.4
4	7.100	6.425	7.435	7.410	6.600	7.0	0.5
5	6.841	7.700	7.325	7.170	6.820	7.2	0.4

Table 5: Peel adhesion tape B in N/25 mm at 10 ± 1 °C on stainless steel panels.

ROLL 1	20	40	60	80	100	AVG	STD
1	11.800	10.250	10.455	11.470	12.350	11.3	0.9
2	11.000	10.570	10.250	11.400	12.000	11.0	0.7
3	11.305	11.850	10.878	11.250	11.200	11.3	0.4
4	11.250	11.475	10.745	12.100	12.000	11.5	0.6
5	11.950	12.100	11.775	10.443	11.873	11.6	0.7

Table 6: Peel adhesion tape B in N/25 mm at 35 ± 1 °C on stainless steel panels.

ROLL 1	20	40	60	80	100	AVG	STD
1	5.805	6.300	5.550	5.750	5.500	5.8	0.3
2	5.600	5.550	5.870	5.650	5.405	5.6	0.2
3	4.950	5.300	5.100	4.850	5.000	5.0	0.2
4	5.500	5.350	5.450	5.605	5.100	5.4	0.2
5	5.252	5.282	6.150	5.870	6.020	5.7	0.4