TEST REPORT

SKG

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TESTING
RvA L 406

Notified Body
NB 0960

Report number	**15.00266**
Date test	**18 March 2015**
Date report	**9 April 2015**
Applicant	**Euroll Service B.V.** Patroonsweg 5 3892 DA ZEEWOLDE Netherlands
Project number Applicant	**150318**
Report size	This report consists of 16 pages (including appendices)
Subject	Test concerning the safety in use (operating forces) of an Euroll electrically powered Rolling Shutter, type EUSEC 6.2, with clear opening dimensions of 5160 x 2700 mm (W x H).
Technical Manager	Ir. J.T. Boersma
Inspector	M.F. van Dijk/ P. Scheerman
Conclusion	The safety in use of the Rolling Shutter of Euroll Service B.V. meets the requirements, i.e. when the maximum permissible forces and times in accordance with sections 5.1.1.5 and 5.1.3 of EN 12453 are not exceeded.

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1. Aim of the investigation

SKG was instructed by Euroll Service B.V. based in Zeewolde (Netherlands) to test an electrically powered Rolling Shutter with the aim of determining the forces exercised on the blocking of a moving Rolling Shutter.
This test is part of the ITT (initial type testing) as referred to in product standard EN 13241-1: 2003 for industrial and commercial garage doors and gates.
SKG is known in Europe as a so-called Notified Body, no. 0960.
SKG is accredited for testing under ISO 17025, by the Dutch Accreditation Council RvA under registration number: L 406.

2. Technical specification

The Rolling Shutter of Euroll tested by SKG was a type electrically powered, with Euroll type designation EUSEC 6.2, with serienr. 1503091, produced in march 2015.

The Rolling Shutter had clear opening dimensions of 5160 x 2700 mm (W x H).
The weight of (the movable part) of the roller curtain amounted to 84 kg.

Construction:
The rolling shutter curtain composed of interconnected steel laths made of steel plate with applied thicknesses of 1 mm and with a height of 95 mm.
The roller curtain was fixated to the Ø 108 mm roller tube (wall thickness 3,2 mm), with 8 pcs M8 bolts and profile sheets.
The guide rails consisted of steel profiles with dimensions of 80 x 34 x 4 mm, were mounted in between the mounting frame tubes.
The bottom of the rolling shutter curtain was provided with an aluminium bottom profile type 1268 with a hight of 104 mm.
The closing edge was equipped with a special formed EPDM-rubber profile with a hight of 25 mm. (see sectional drawings, part of appendix 3).

The Rolling Shutter was driven by a 3* 400V AC motor with gear unit of the brand Elero, type DFM 170 NHK and controlled by an adaptive controller of the brand Adolf Tedsen type "Logi Ted" with the typenr. MO710 RFE. The motor gear unit delivers a maximum torque of 170 Nm at 12,5 rpm.

The most relevant parameter settings of the control unit were:
- The settings of the dip-switches on the mainboard were: 2 (On) and 1, 3, 4, 5, 6 (Out).
- Up and down direction, configured in "hold to run mode".

The Rolling Shutter was equipped with the following protections:
- Anti drop device of the brand Simu type D.
- Operation in "hold to run mode";
- A presence sensing device: Safety light curtain, of the brand Cedes type GRS Mini Tx-2030-33.

The speed in the closing direction was 0,13 m/s, (measured at an opening of 1000 mm).

Drawings of the Rolling Shutter as well as the user & installation manual of the electric drive and control were received and form part of the report as an appendix (see Appendix 3 and 4).

3. Accountability and methodology

The test and report are based on the European standards EN 12445: 2000 and EN 12453: 2000. The test result provides an important indication of the safety in use concerning CE marking as referred to in Annex ZA of the product standard EN 13241-1 + A1: 2011, for industrial and commercial garage doors and gates.

The Rolling Shutter offered for testing and assessment was tested on: **Safety in use**

The Rolling Shutter was tested in accordance with section 5 of EN 12445 for the purpose of determining whether the requirements sections 5.1.1.5 and 5.1.3 of EN 12453 were complied with.
For measuring the forces use was made of a GTE KMG-2000L force transducer (in accordance with 5.1 of EN 12445), including software for the registration of distribution of forces.

The measurements were carried out on ten locations as referred to in Appendix 2. At each location, measurements were performed three times, after which the averages were calculated.
For each measurement location it applies that during a maximum time (dynamic time) of 0.75 sec the dynamic force that occurs upon blocking of the moving Rolling Shutter may not exceed 400 N.
For measurement locations at an opening gap > 500 mm, it applies that during a maximum time (dynamic time) of 0.75 sec the dynamic force that occurs upon blocking of the moving Rolling Shutter may not exceed 1400 N.
Within the maximum time of 0.75 sec the dynamic force should have decreased to a maximum of 150 N. It also applies that the static force may not exceed 25 N after blocking of the Rolling Shutter.

4. Observations

For a summary of the observations see the tables below.

Location measurement point	Distance (mm)	Maximum average dynamic force Fd (N)	Dynamic time Td (sec.) (F >150 N)	Static force Fs (N)	Static force after 5 sec. (N)
1	50	78	0,00	< 25	0
2	50	109	0,00	< 25	0
3	50	105	0,00	< 25	0
4	300	159	0,24	26	0
5	300	78	0,00	< 25	0
6	300	170	0,37	27	0
7	2400	110	0,00	< 25	0
8	2400	133	0,10	< 25	0
9	2400	140	0,00	26	0
10	1450	124	0,00	< 25	0

Table 1: Summary of the observations: between main closing edge and the opposing edge

The test results show that the following criteria are met:

- the dynamic force after blocking does not exceed 400 N (gaps < 500mm)
- the dynamic force after blocking does not exceed 1400 N (gaps > 500mm)
- the dynamic period (F >150N) is less than 0,75 s
- the average force calculated over the static period is ≤ 150 N.
- within a period of five sec after blocking the static force was < 25 N.

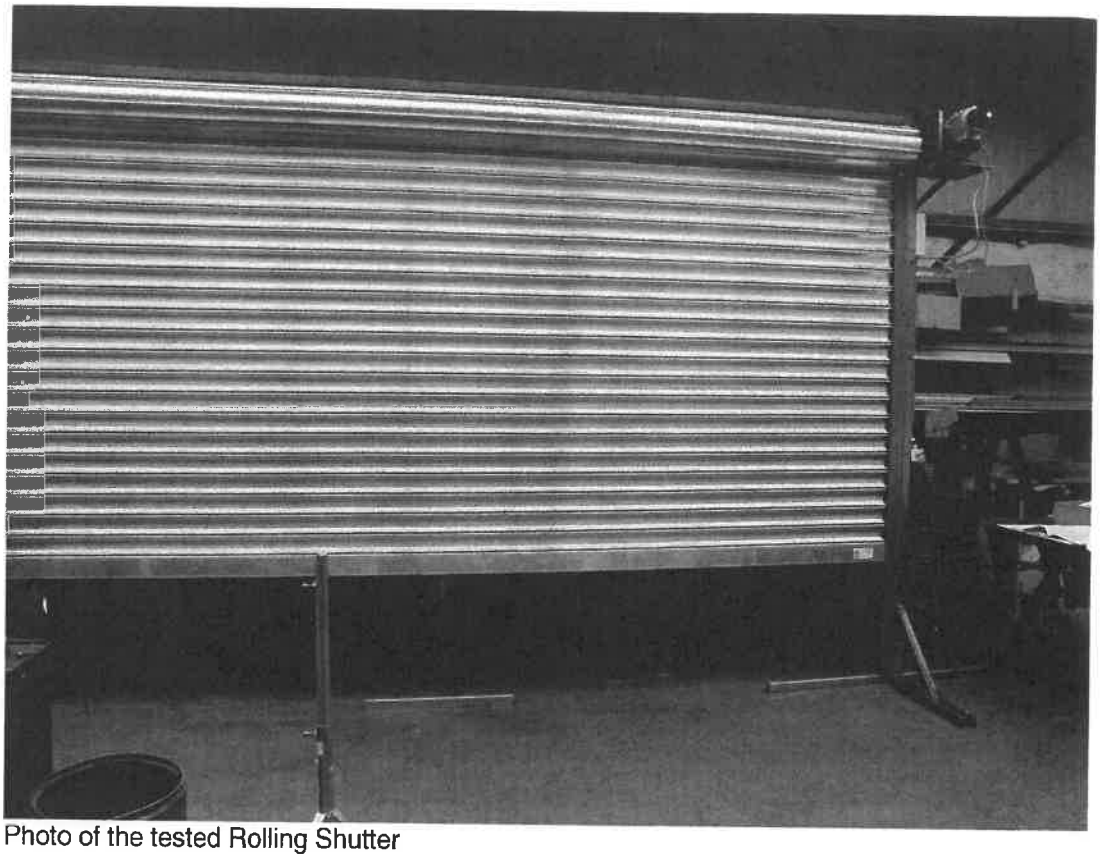

Photo of the tested Rolling Shutter

5. Conclusion

From the measurement data of the tested Rolling Shutter it can be concluded that the tested Rolling Shutter of Euroll Service B.V., with clear opening dimensions of 5160 x 2700 mm (W x H), satisfied the requirements in accordance with sections 5.1.1.5 and 5.1.3 of EN 12453, that is to say that:

- the dynamic force after blocking does not exceed 400 N (gaps < 500mm)
- the dynamic force after blocking does not exceed 1400N (gaps > 500mm)
- the dynamic period (F >150N) is less than 0,75 s
- the average force calculated over the static period is ≤ 150 N.
- within a period of five sec after blocking the static force was < 25 N.

Drawn up at Wageningen on 9 April 2015

STICHTING KWALITEIT GEVELBOUW S.K.G. Nieuwe Kanaal 9 F 6709 PA Wageningen

Ir. J.T. Boersma, Technical Manager

6. Appendices

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3-2	Horizontal cross-section EUSEC 6.2 roller shutter	11-03-2015
3-3	Side view bottom slat and rubber and slat 6.2	26-03-2015
Appendix 4:	**User & installation manual of the Rolling Shutter and the drive** [1)]	
4-1	Euroll Service User/ Installation & Maintenance manual	version E.1.01
4-2	Tedsen Teletaster Manual motor controller MO710	version 4V

Appendix 1: SKG Observations

Appendix 1-1: Record of force measurement: 4 pages

SKG	Record of force measurement acc. EN 12445 Safety in use of power operated doors - Test methods	KMG 2013 - result (c) GTE

Filename:	\\skgsbs\klanten\0000\Euroll\Projecten\...\Euroll 15.00266.prt
Standard:	EN 12445
Measurement date:	18-03-2015
Object number:	EUSEC 6.2
Manufacturer:	Euroll Service B.V.
Place:	Zeewolde

Standardised measurements conducted:
(Measuring points: ME = main closing edge, AE = ancillary closing edge)

	Distance 200 left	Middle	Distance 200 right
ME Closed: 50	Standardised measurement-1	Standardised measurement-2	Standardised measurement-3
ME Closed: 300	Standardised measurement-4	Standardised measurement-5	Standardised measurement-6
ME Closed: 2400	Standardised measurement-7	Standardised measurement-8	Standardised measurement-9
ME Closed: 1450		Standardised measurement-10	

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Tester:

Date:

(Stamp and signature:)

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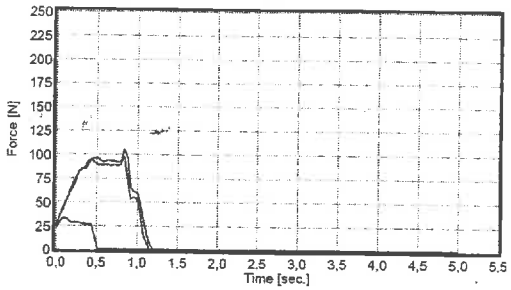
Record of force measurement
acc. EN 12445
Safety in use of power operated doors - Test methods

Details of standardised measurements 1 - 10 :

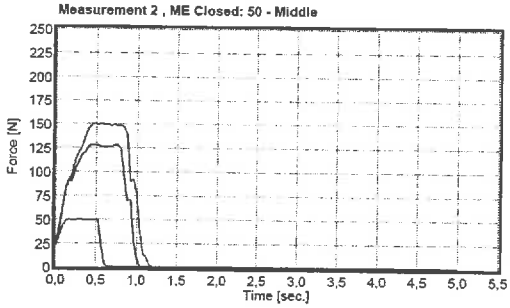
Measuring point	Measurement	F max [N]	F stat [N]	t dyn [sek]	F end [N]
ME Closed: 50 Distance 200 left	1.1	33	2	0,00	0
	1.2	105	16	0,00	0
	1.3	98	15	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	78	11	0,00	0
ME Closed: 50 Middle	2.1	50	5	0,00	0
	2.2	128	20	0,00	0
	2.3	151	25	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	109	16	0,00	0
ME Closed: 50 Distance 200 right	3.1	66	9	0,00	0
	3.2	124	23	0,00	0
	3.3	127	23	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	105	18	0,00	0
ME Closed: 300 Distance 200 left	4.1	140	26	0,00	0
	4.2	202	27	0,71	0
	4.3	136	25	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	159	26	0,24	0
ME Closed: 300 Middle	5.1	88	11	0,00	0
	5.2	84	10	0,00	0
	5.3	62	7	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	78	9	0,00	0
ME Closed: 300 Distance 200 right	6.1	152	32	0,00	0
	6.2	172	25	0,49	0
	6.3	187	26	0,62	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	170	27	0,37	0
ME Closed: 2400 Distance 200 left	7.1	90	10	0,00	0
	7.2	107	13	0,00	0
	7.3	134	29	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	110	17	0,00	0
ME Closed: 2400 Middle	8.1	176	10	0,30	0
	8.2	77	6	0,00	0
	8.3	147	16	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	133	10	0,10	0
ME Closed: 2400 Distance 200 right	9.1	142	24	0,00	0
	9.2	131	19	0,00	0
	9.3	147	37	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	140	26	0,00	0
ME Closed: 1450 Middle	10.1	142	18	0,00	0
	10.2	148	19	0,00	0
	10.3	82	8	0,00	0
KMG: 5067865 - Calibrated: 11-2-2015	Average	124	15	0,00	0

Record of force measurement
acc. EN 12445
Safety in use of power operated doors - Test methods

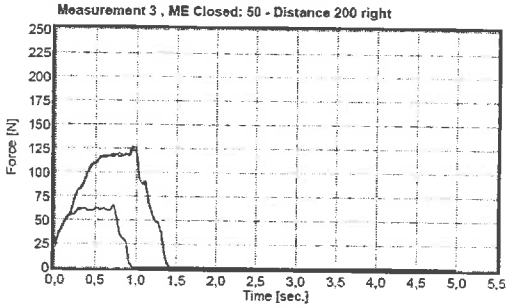
Measurement 1 , ME Closed: 50 - Distance 200 left



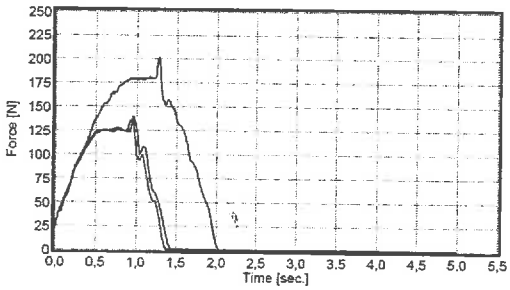
Measurement 2 , ME Closed: 50 - Middle



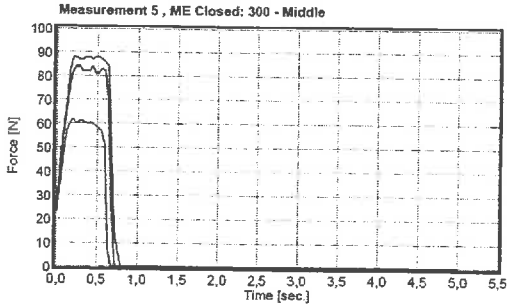
Measurement 3 , ME Closed: 50 - Distance 200 right



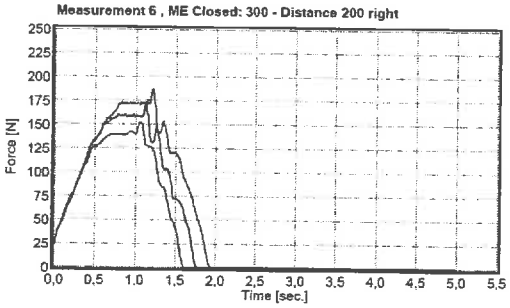
Measurement 4 , ME Closed: 300



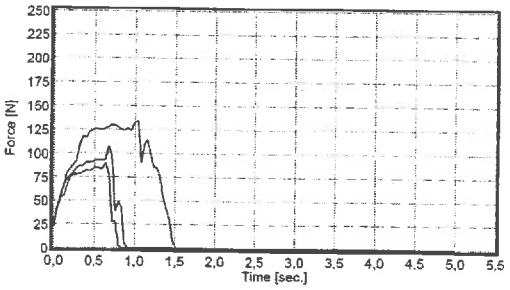
Measurement 5 , ME Closed: 300 - Middle



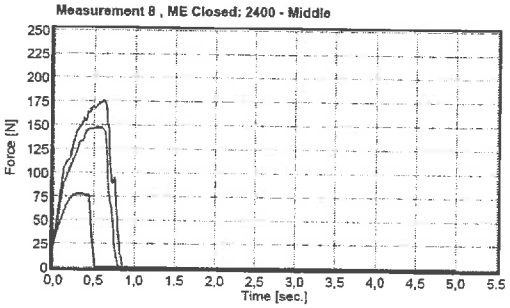
Measurement 6 , ME Closed: 300 - Distance 200 right



Measurement 7 , ME Closed: 2400 - Distance 200 left



Measurement 8 , ME Closed: 2400 - Middle



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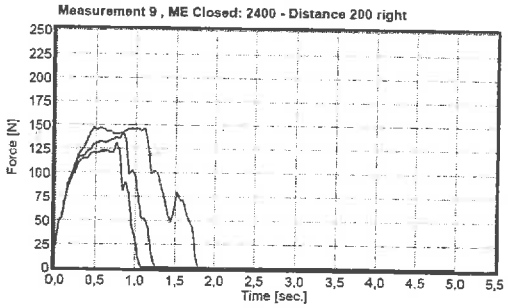
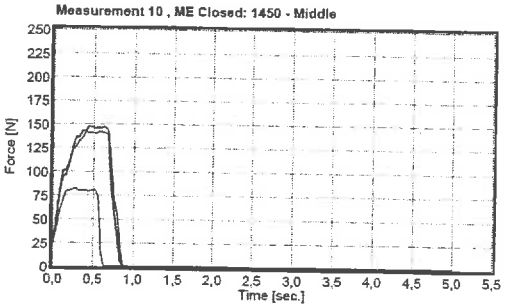
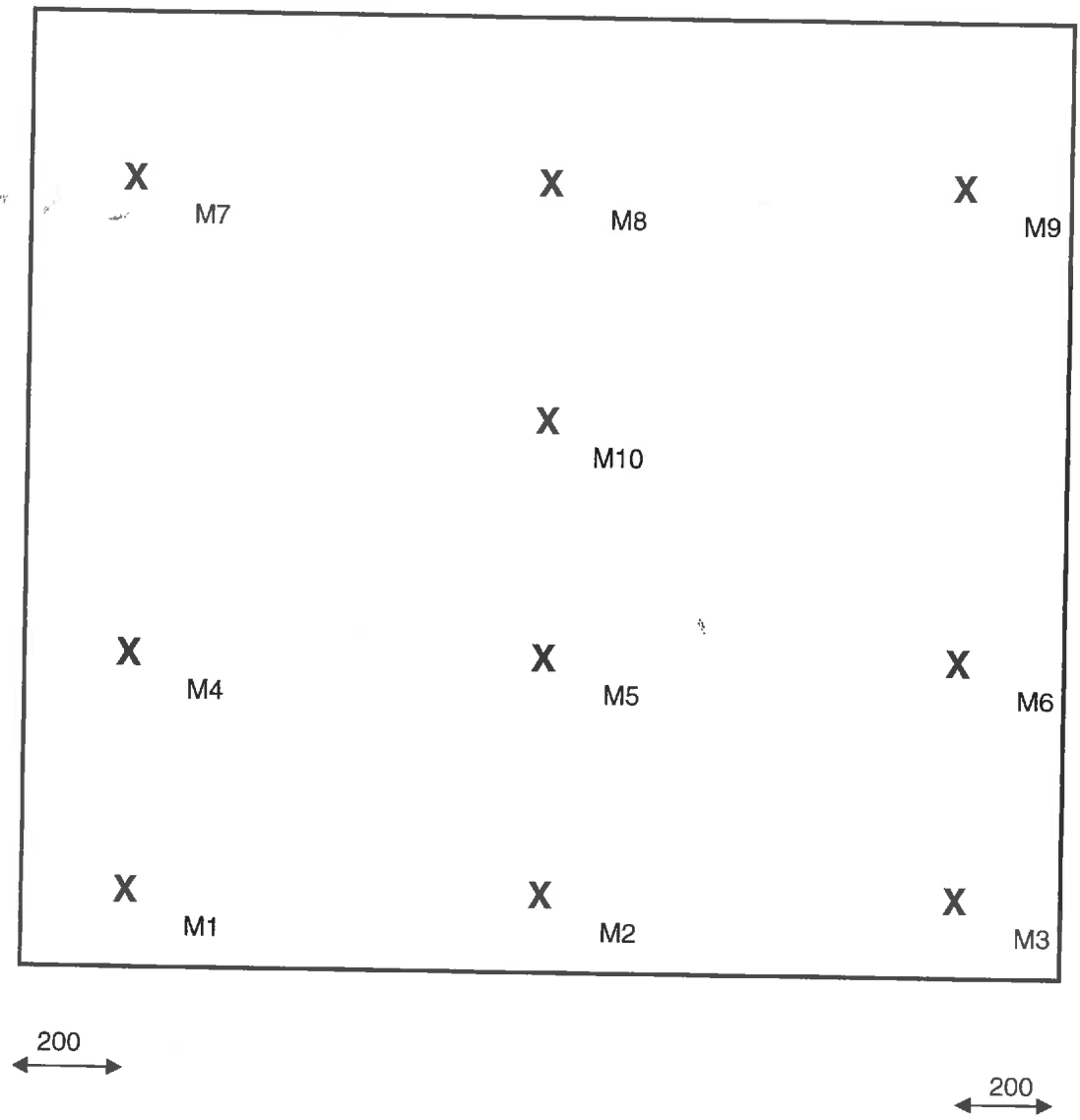
Record of force measurement
acc. EN 12445
Safety in use of power operated doors - Test methods





Appendix 2: Overview location measuring points: 1 page



Distance between the measuring points M1, M2 en M3 and the floor: 50 mm;

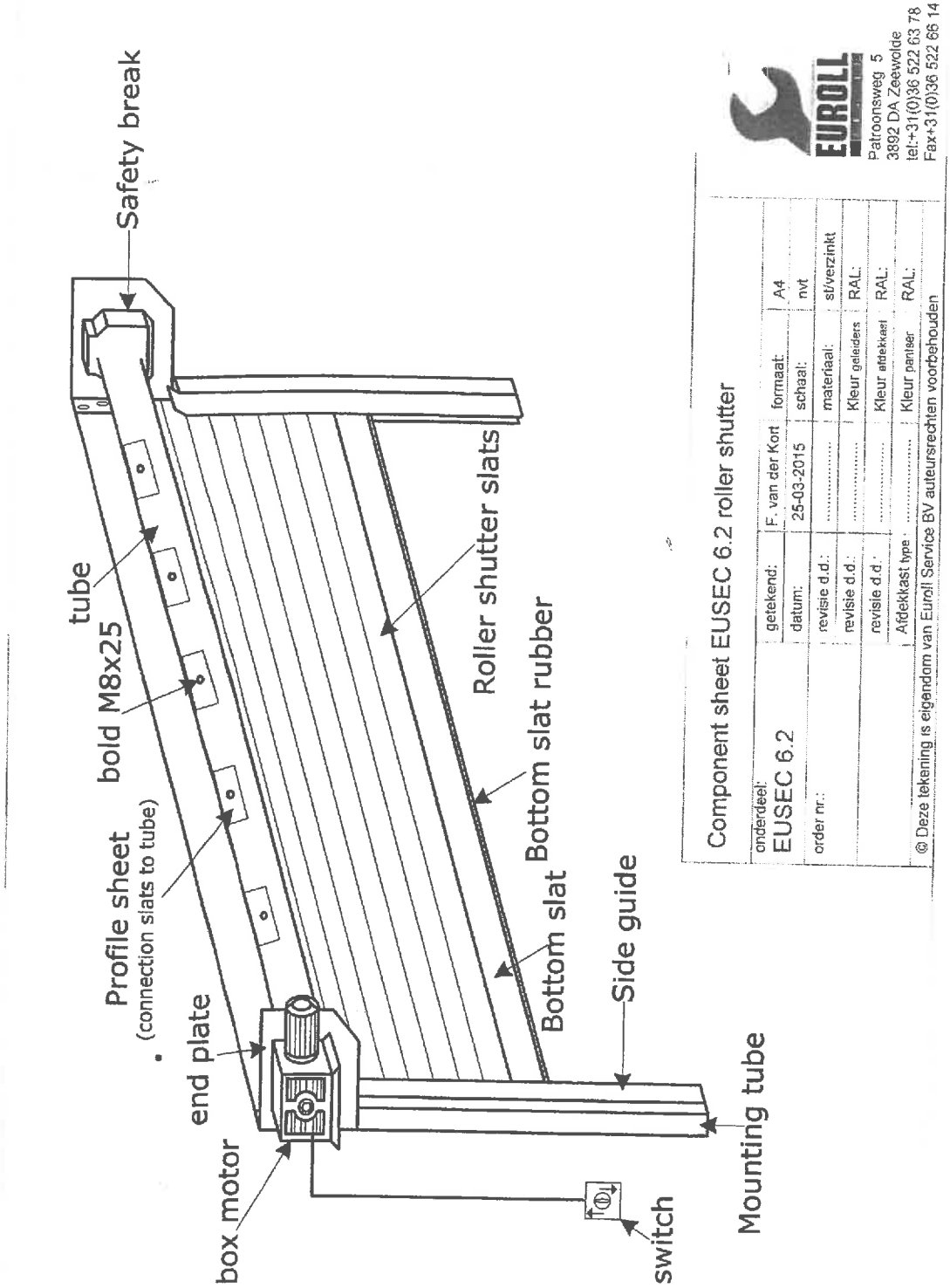
Distance between the measuring points M4, M5, M6 and the floor: 300 mm;

Distance between the measuring points M7, M8 en M9 and the floor: 2400 mm;

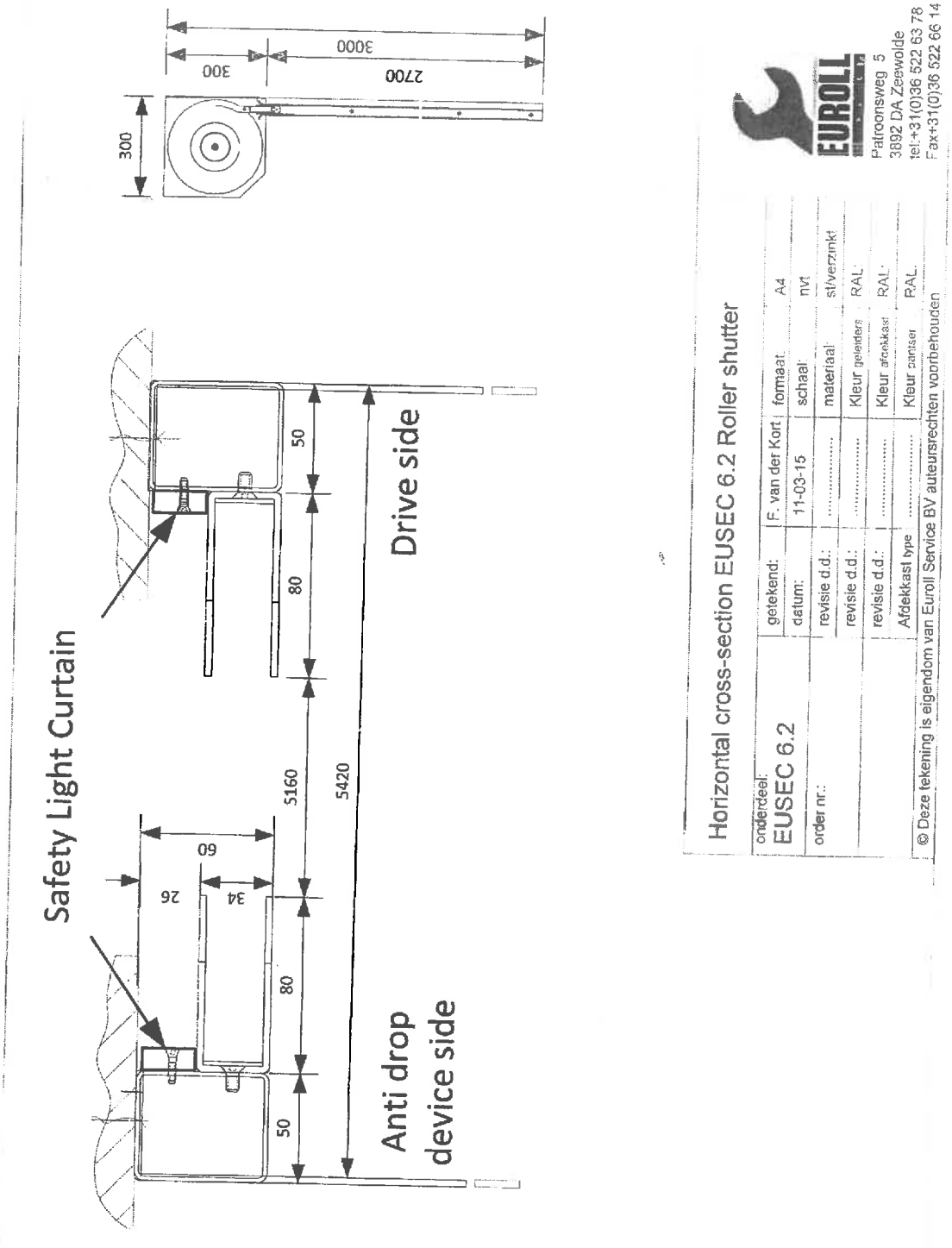
Distance between the measuring points M10 and the floor: 1450 mm.

Appendix 3: Drawings of the tested door

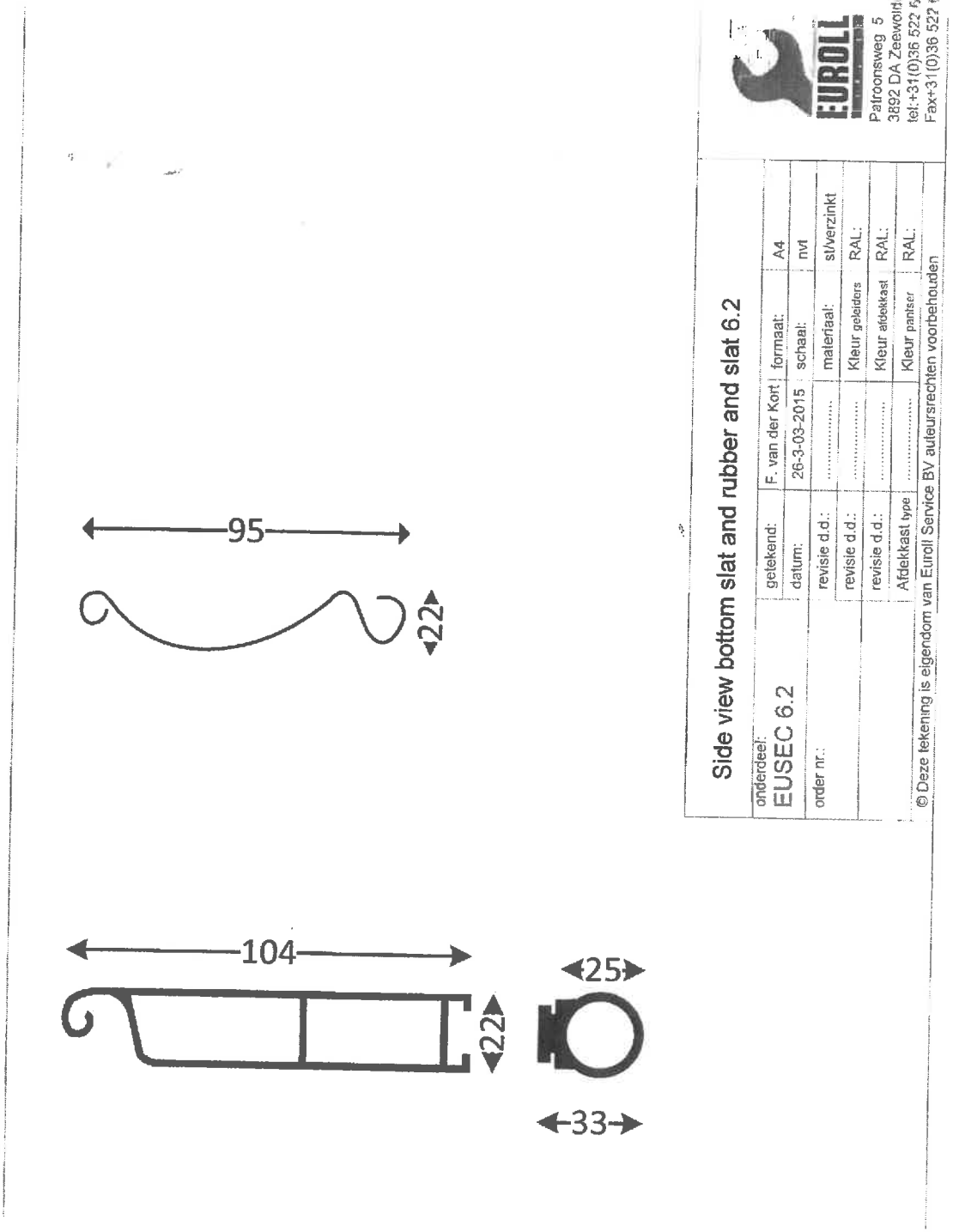
3-1 Component sheet EUSEC 6.2 roller shutter



3-2 Horizontal cross-section EUSEC 6.2 roller shutter



3-3 Side view bottom slat and rubber and slat 6.2



Appendix 4: User & installation manual of the Rolling Shutter and the drive including operation [1)]

4-1	Euroll Service User/ Installation & Maintenance manual	version E.1.01
4-2	Tedsen Teletaster Manual motor controller MO710	version 4V

1) For downloads of the separate documentation:
From Euroll B.V: www.euroll.nl
From Tedsen Teletaster Benelux B.V.: www.tedsen.com