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Summary of Initial Type Testing Reports for Garage Doors

RISE Research Institutes of Sweden has in its capacity as Notified Body no. 0402 assessed the performance of the construction product in accordance with the harmonized product standard **EN 13241:2003+A2:2016 Industrial, commercial, garage doors and gates –** Product standard, performance characteristics. Performances in this report can be used as support for a *Declaration of Performance* in accordance with *Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011* (the Construction Products Regulation or CPR).

This report is a summary of those reports and includes also results from type tests performed by other Notified Bodies. The content of this report may be used as support for an Declaration of Performance in accordance with the CPR. It shall be noted that the client shall specify all the involved Notified Bodies and their numbers in the Declaration of Performance.

Product name and description

Garage door name/type	CGU type RSC, RSC-T (2016), RES-X, RES 70, RES 200, RES 350, RS 70, RS 200, RSC-T residential sectional overhead door
Max. weight of door	Depending on spring break device (maximum of 3 springs) or operator, limitation see chapter 1.5 and 3 (Eval. report PX20720-03D, 2013-02-24)
Day-light, maximum Day-light, tested	width 5000; height 3000 mm width 2500; height 2610 mm
Panel manufacturer	Kingspan, Metecno Door Panel, Tecsedo, Flexi-Force (Full vision
Hardware Flexi-Force	2”track, code 215V, 215VC - rollers 2”, code 574RES, 574S, 576, 577, 575-100, 595RSR/F - vertical angle, code 915VB, 915VL - side/lintel seal, code 1085, 1085RB, 1088, 1088T, 1088TF - top seal, code 1036, 1036-36, 1036-52, 1036DN
Balancing system	FlexiForce Torsion / Tension springs
Spring break device	See chapter 1.5
Machinery / Operator	See chapter 3
Bottom seal	See chapter 3

Swedish Notified Bodies are appointed by SWEDAC, the Swedish Board for Accreditation and Conformity Assessment, under the terms of Swedish legislation. This report may not be reproduced other than in full, except with the prior written approval of SP.

1. Test of fully assembled Door

1. 1 Resistance to wind load according to part 4.4.3 of EN 13241:2003+A2:2016

Door (panel) type	Wind load class	Wind load [Pa] *	Ref
Kingspan with cassette	**4**	**-**	1)
Kingspan no cassette	**5**	**1350**	1)
Kingspan with passdoor SafeStep	**2**	**-**	1) 11)
Metecno Door Panel (Secuwall), no cassette	**5**	**1300**	1)
Metecno Door Panel (Secuwall), with cassette	**4**	**-**	1)
Metecno Door Panel, fingersafe, with pass door SafeStep	**2**	**-**	9)
Tecsedo	**5**	**1300**	1)
Tecsedo with pass door SafeStep	**2**	**-**	1) 11)
Flexi-Force Full vision (single glazed panels)	**5**	**1300**	1)
Flexi-Force- Kingspan / Metecno/Tecsedo, Full vision, fingersafe	**5**	**1300**	1) 11)
Flexi-Force- Kingspan / Metecno/Tecsedo, Full vision, fingersafe, with pass door SafeStep	**2**	**-**	1) 11)
Flexi-Force – Kingspan / Metecno, -Reflection Fv, fs, no reinforcement	**2**	**-**	17) 18) 19) 20) 21)
Flexi-Force – Kingspan / Metecno, -Reflection Fv, fs, reinforced profile	**2**	**-**	17) 18) 19) 20) 21)

Test reports SP No and date:
1) P403076, Feb 7, 2005 2) P805340E, 2008-12-15 3) P805340F, 2008-12-15
4) P805340H, 2008-12-15 5) P805340G, 2008-12-15 6) P805340I, 2008-12-15 7) P805340J, 2008-12-15
8) P905811-01B, 2009-10-01 9) P905811-01C, 2009-10-01 10) P900802B, 2010-03-22 11) P900807-03A, 2010-06-02
12) PX04884 B, 2010-11-01 13) PX04884 D, 2010-09-15 14) PX20720-03B, 2013-02-24 15) 3P00645B, 2013-02-12
16) 5P01839, 2015-03-25 17) 5P06232-1, 2015-08-24 18) 5P06232-2, 2015-08-24 19) 5P06232-3, 2015-08-24
20) 5P06232-5, 2015-09-18 21) 6P01821-2, 2016-04-18 Fv = Full vision, fs = fingersafe * only stated for class 5 results

1.2 Air permeability according to part 4.4.6 of EN 13241:2003+A2:2016

1.2.1 Door test

Door (panel) type	Air perme-ability class	Ref
Kingspan with cassette	**3**	1)
Kingspan no cassette	**3**	1)
Kingspan with pass door SafeStep	**1**	1) 11)
Metecno Door Panel (Secuwall), no cassette	**3**	1)
Metecno Door Panel (Secuwall), with cassette	**3**	1)
Metecno Door Panel (Secuwall), 3 windows 2200	**2**	1)
Metecno Door Panel (Secuwall), 3 windows 2240	**3**	1)
Metecno Door Panel (Secuwall), T F windows	**2**	1)
Metecno Door Panel, fingersafe, with pass door SafeStep	**0**	9)
Tecsedo	**3**	1)
Tecsedo with pass door SafeStep	**1**	1) 11)
Epco, U-series, 40 mm, fs	**2**	14
Flexi-Force Full vision (single glazed panels)	**3**	1)
Flexi-Force- Kingspan / Metecno/Tecsedo, Fv, fs	**3**	1) 11)
Flexi-Force- Kingspan / Metecno/Tecsedo, Fv, fs, with pass door SafeStep	**1**	1) 11)
Flexi-Force – Kingspan / Metecno, -Reflection Full vision, finger safe no reinforcement	**3**	17) 18) 19) 20) 21)
Flexi-Force – Kingspan / Metecno, -Reflection Full vision, finger safe reinforced profile	**3**	17) 18) 19) 20) 21)

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8) P905811-01B, 2009-10-01 9) P905811-01C, 2009-10-01 10) P900802B, 2010-03-22 11) P900807-03A, 2010-06-02
12) PX04884 B, 2010-11-01 13) PX04884 D, 2010-09-15 14) PX20720-03B, 2013-02-24 15) 3P00645B, 2013-02-12
16) 5P01839, 2015-03-25 17) 5P06232-1, 2015-08-24 18) 5P06232-2, 2015-08-24 19) 5P06232-3, 2015-08-24
20) 5P06232-5, 2015-09-18 21) 6P01821-2, 2016-04-18 Fv = Full vision, fs = fingersafe * only stated for class 5 results

1.2.2 Window test

FF window types tested separately. One window was tested except for window type 2230 and 2250, for which the worst case is shown in the table.

Window type, No (ref)		Air leakage, m^3/h	Window type, No (ref)		Air leakage, m^3/h
2210	1)	**<0.01**	2430	1)	**0.02**
2225	1)	**<0.01**	2250	1)	**0.04**
2230	1)	**0.77**	2450N	2)	**0.01**
2235	1)	**<0.01**	2460N	2)	**0.11**

Test reports SP: 1) P805340K, 2008-12-15 2) P908002A, 2010-02-19

1.3 Water tightness according to part 4.4.2 of EN 13241:2003+A2:2016

1.3.1 Door test

Door (panel) type	Water penetration class	Maximum pressure [Pa]	Ref
Kingspan with cassette	**3**	**190**	1)
Kingspan no cassette	**3**	**130**	1)
Kingspan with passdoor SafeStep	**0**	**-**	1) 11)
Metecno Door Panel (Secuwall), no cassette	**3**	**90**	1)
Metecno Door Panel (Secuwall), with cassette	**3**	**90**	1)
Metecno Door Panel (Secuwall), 3 windows 2200	**0**	**-**	1)
Metecno Door Panel (Secuwall), 3 windows 2240	**2**	**-**	1)
Metecno Door Panel, fingersafe, with pass door SafeStep	**0**	**-**	9)
Tecsedo	**3**	**110**	1)
Tecsedo with pass door SafeStep	**0**	**-**	1) 11)
Flexi-Force Full vision (single glazed panels)	**3**	**70**	1)
Flexi-Force- Kingspan / Metecno / Tecsedo, Full vision, finger safe	**3**	**70**	1) 11)
Flexi-Force- Kingspan / Metecno / Tecsedo, Full vision, finger safe, with pass door SafeStep	**0**	**-**	1) 11)
Flexi-Force – Kingspan / Metecno, -Reflection Full vision, finger safe, no reinforcement	**3**	**70**	17) 18) 19) 20) 21)
Flexi-Force – Kingspan / Metecno, -Reflection Full vision, finger safe, reinforced profile	**3**	**70**	17) 18) 19) 20) 21)

Test reports SP No and date: 1) P403076, Feb 7, 2005 2) P805340E, 2008-12-15 3) P805340F, 2008-12-15
4) P805340H, 2008-12-15 5) P805340G, 2008-12-15 6) P805340I, 2008-12-15 7) P805340J, 2008-12-15
8) P905811-01B, 2009-10-01 9) P905811-01C, 2009-10-01 10) P900802B, 2010-03-22 11) P900807-03A, 2010-06-02
12) PX04884 B, 2010-11-01 13) PX04884 D, 2010-09-15 14) PX20720-03B, 2013-02-24 15) 3P00645B, 2013-02-12
16) 5P01839, 2015-03-25 17) 5P06232-1, 2015-08-24 18) 5P06232-2, 2015-08-24 19) 5P06232-3, 2015-08-24
20) 5P06232-5, 2015-09-18 21) 6P01821-2, 2016-04-18 Fv = Full vision, fs = fingersafe * only stated for class 3 results

1.3.2 Window test

FF window types tested separately. One window was tested except for window type 2230 and 2250 where 2 windows were tested for which the lowest class is given in the table below.

Window type, No (ref report)		Water penetration class	Maximum pressure [Pa] *
2210	1)	**3**	**150**
2225	1)	**3**	**150**
2230	1)	**0**	**-**
2250	1)	**0**	**-**
2235	1)	**3**	**150**
2430	1)	**3**	**150**
2450N	2)	**3**	**110**
2460N	2)	**3**	**110**

Test reports SP: 1) P805340K, 2008-12-15 2) P908002A, 2010-02-19 * only stated for class 3 results

1.4 Thermal resistance according to part 4.4.5 of EN 13241:2003+A2:2016

Door panel type, mm size 2500 x 2610	Note	**Thermal transmittance, U_{door} [W/(m²K)]**			
		p	**pw4**	**pd**	**g**
Kingspan /pass door SafeStep	1) 5)	**1.4**	**1.5**	**2.5**	-
Metecno Door Panel (Secuwall) /pass door SafeStep	1) 3)	**1.5**	**1.7**	**2.5**	-
Metecno Door Panel, fingersafe /pass door SafeStep	3)	**1.8**	-	**2.5**	-
Tecsedo /pass door SafeStep	1) 5)	**1.4**	**1.6**	**2.5**	-
Epco, R-series 40 mm fs /pass door SafeStep	3) 5)	**1.6**	-	**2.5**	-
Epco, U-series 40 mm fs /pass door SafeStep	8) 5)	**1.6**	-	**2.5**	-
Epco, R6, 60 mm, fs, No aluminium profile (#5)	9)	**1.3**	-	-	-
Epco, R6, 60 mm, fs, With aluminium profile (#4)	9)	**1.5**	-	-	-
Epco, R6, 60 mm, fs (Top seal: alu endcap 103860, lintel 915VB, seal 1085 RB, Side seal: 915VB, 215V and seal 1085RB, Bottom seal: 1035QSE)	10)	**1.5**	-	-	-
Epco, R6, 60 mm, fs (Top seal: Lintel 915VB and seal 1085RB, Side seal: 915VB, 215V and seal 1085RB, Bottom seal: 1035QSE)	11)	**1.3**	-	-	-
Flexi-Force Full vision (single glazed panels)	1)	-	-	-	**6.0**
Flexi-Force Kingspan,/ Metecno / Tecsedo, Full vision, fingersafe, with pass door SafeStep	1) 5)	-	-	**6.0**	**6.0**
Flexi-Force Kingspan / Metecno, (4000x3400mm) -Reflection Full vision, finger safe, no reinforcement, fully glazed	18, 19				**3.4**
Flexi-Force Kingspan / Metecno, (4000x3400mm), -Reflection Full vision, finger safe reinforced profile, fully glazed	18, 19				**3.4**
Flexi-Force (4000x3400mm), -Reflection Fv, fs	17, 19		**2.1**		
Flexi-Force (4000x3400mm) finger safe	15,16, 19	**1.6**		**1.8**	

p = covered panels only
pw4 = covered panels with four windows
Fv = Full vision; fs=fingersafe;
pd = covered panels and a pass door SafeStep
g = fully glazed door
nfs=non-fingersafe; cov=covered

Test report SP No:
1) P403076, 2005-02-07
2) P805340L rev 2009-05-15
3) P905811-02, rev 2009-12-11
4) P908002-U, 2010-04-06
5) P900807-03A, 2010-06-02
6) PX04884-01A, 2010-11-01
7) PX04884-01B, 2010-11-01
8) PX20720-03B, 2013-02-24
9) PX29005r2 2014-05-16
10) 3P08507-2 2014-05-05
11) 3P08507-1, 2014-05-05
12) 3P08507-7, 2014-05-05
13) 3P08507-8, 2014-05-05
14) 5P01839-01, 2015-05-12
15) 5P06232-02-1, 2015-12-01
16) 5P06232-02-2, 2015-12-01
17) 5P06232-02-3, 2015-12-01
18) 5P06232-02-4, 2015-12-01
19) 6P01821-2, 2016-04-18

1.5 Safe opening according to part 4.2.8 of EN 13241:2003+A2:2016

Component Flexi-Force Spring break device, SBD	**Result** **Door weight**	**Test report** **SP No, date**
FF type: SBD 651, 667	**Pass** 85 kg/SBD	P403076, 2005-02-07 PX20720-03D, 2013-02-24
FF type: SBD 656, 656T, 656C, 656TC	**Pass** 112.5 kg/SBD	P803817, 2008-07-09 PX20720-03D, 2013-02-24
FF type: SBD 656 SR/L, 656 STR/L, 656 SCTR/L	**Pass** 114 kg/SBD	PX20720-02A, 2012-06-04 PX20720-03D, 2013-02-24
FF type: Vertical Tension Spring set	**Pass** Total door weight 83 kg	4P07490, 2014-11-05
FF type: Vertical Tension Spring set (2016)	**Pass** Total door weight 126 kg	5P02948, 2015-03-24

1.6 Durability of water tightness, thermal resistance and air permeability against degradation according to part 4.4.7 of EN 13241:2003+A2:2016

Requirement	Result	Test Report, dated
Durability of water tightness, thermal resistance and air permeability	**Pass**	TNO 2005-BCS-R0014, Jan 11, 2005 (TNO Built Environment and Geosciences, The Netherlands)

2. Resistance to wind load, Single panel test according to part 4.4.3 of EN 13241:2003+A2:2016

Door panel type	Note	Width [mm]	Height [mm]	Wind load Class	Wind load [Pa] *	Maximum pressure [Pa]
Kingspan	1)	2500	490	**5**	2393	3291
Kingspan	1)	5000	500	**2**	-	864
Kingspan, three windows	1)	2540	490	**5**	1197	1646
Kingspan, five windows 420*280	1)	5000	490	**1**	-	457
Metecno Door Panel (Secuwall)	1)	2500	500	**5**	2599	3574
Metecno Door Panel (Secuwall)	1)	5000	500	**2**	-	1030
Metecno Door Panel (Secuwall), 3 windows	1)	2540	500	**4**	-	1392
Metecno Door Panel (Secuwall),5 windows 420*280	1)	5000	490	**1**	-	556
Tecsedo	1)	2500	490	**5**	2649	3642
Tecsedo	1)	5000	490	**2**	-	918
Tecsedo, three windows	1)	2540	490	**5**	1137	1563
Tecsedo, five windows 420*280	1)	5000	490	**1**	-	530
Flexi-Force 1.3 FS - No Reinf – 4 Windows	13) 14)	4045	610	4	-	1033
Flexi-Force 1.3 FS - No Reinf – 5 Windows	13) 14)	5045	610	2	-	556

Test reports SP No:
1) P403076, dated 2005-02-07
2) P805340-02A, 2009-03-25
3) P805340-02B, 2009-03-25
4) P805340-02C, 2009-03-25
5) P805340-02D, 2009-03-25
6) P805340-02E, 2009-03-25
7) P905811, 2009-10-22
8) P908002-01, 2010-02-25
9) PX04884-03, 2010-11-01
10) SP 3P00645-01, 2013-03-07
11) PX20720-03B, 2013-03-07
12) 5P01839-02, 2015-04-21
13) 5P06232-01, 2015-09-28
14) 6P01821-2, 2016-04-18
** only stated for class 5 results*

3. Operating forces according to part 4.3.3 of EN 13241:2003+A2:2016

The following operators were tested together with the test door and performed in accordance with the requirements. Bottom seal FF=Flexi-Force, Std=standard.

Machinery	Bottom seal	Maximum weight [kg]	Test report No, dated SP/ TÜV/ SKG
Marantec Comfort 211, 220 1)	FF std	160	P403076, 2005-02-07
Marantec Comfort 250, 252 2), 3)			
Marantec Comfort 260, 270, 280, 380			SP 3P05828, 2013-08-15
Marantec Comfort 220.2 1)	FF std	160	P403076, 2005-02-07
Marantec Comfort 250.2 2)			TÜV 08325554799-001
Marantec Comfort 252.2 3)			23.09.2008
Marantec Comfort 360, 370			SP 3P05828, 2013-08-15
Marantec KSX/KSY 450, 550	FF 1039	160	P602685A, 2006-06-21
Marantec KSX/KSY 700, 1000			
Compact Marantec 4)	FF std	160	P403076, 2005-02-07
Sommer Marathon 800 SL 5)	FF std	140	P403076, 2005-02-07
Sommer Marathon 1100 SL 6)		160	
Sommer Duo 650 SL		140	
Sommer Baseline 2900 V001	FF 1037, FF 1039	100	P502949C, 2005-06-20

Machinery	Bottom seal	Maximum weight [kg]	Test report No, dated SP/ TÜV/ SKG
Sommer S9040 base 14)	FF 1035-RES	160	5P09431D, 2015-12-21
	FF 1037		
Sommer S9060 base 15)	FF 1035-RES	160	5P09431D, 2015-12-21
	FF 1037		
Sommer S9080 base 16)	FF 1035-RES	160	5P09431D, 2015-12-21
	FF 1037		
Sommer S9110 base 17)	FF 1035-RES	250	5P09431E rev1, 2016-03-02
	FF 1037		
Chamberlain Liftmaster 60, 800	FF std	110	P403076, 2005-02-07
Chamberlain Liftmaster 1000, 5580	FF std	160	
Chamberlain LM80R-128, LM80R-128H	FF std	110	PX10532-01A, 2011-03-21
Chamberlain Liftmaster LM50K /EVO *3	FF 1035RES	100	SKG 11.1114 revA 2011-12-06
Chamberlain Liftmaster LM3800	FF 1035L, treshold profile 1041L3000	100	SKG 11.1115, 2011-11-30
Chamberlain Liftmaster LM 3800	FF std	146	P805340-01-D, 2009-01-22
Chamberlain HE60XX/ML500XX	FF std	160	P805340-01-D, 2009-01-22
Chamberlain LM50EVO *4	FF 1037	126	7P01864D, 2017-05-15
	FF 1035REN		
	FF 1035		
	FF 1035RES		
Chamberlain LM55EVO *4	FF 1037	126	7P01864D, 2017-05-15
	FF 1035REN		
	FF 1035		
Chamberlain LM55EVO	FF 1035RES		
	FF 1037		
Chamberlain LM60EVO	FF 1035RES	158	5P08340C, 2015-11-12
	FF 1037	126	5P08340B, 2015-11-12
Chamberlain LM80EVO	FF 1035RES	140	SKG 12.1121, 2013-01-09
	FF 1035	223	
Chamberlain LM100EVO	FF 1035	220	SKG 12.1122, 2013-01-09
Chamberlain LM130EVO	FF 1037	225	7P01864A, 2017-05-15
	FF 1035REN		
	FF 1035		
	FF 1035RES		
Chamberlain LM130EVO *4	FF 1037	225	7P01864C, 2017-05-15
	FF 1035REN		
	FF 1035		
	FF 1035RES		
Nice Spin 10	FF 1039	140	P502949B, 2005-06-21
Nice Spin 20, Nice Spin 30	FF 1037, FF 1039	160	
Nice Spin 40	FF 1039	160	

*3 Statement from Chamberlain that LM50EVO is the same construction and the same performance as tested LM50K

*4 Also approved for double horizontal track with straight upper tracks, code RSCHS

RISE Research Institutes of Sweden AB
Notified Body No. 0402

Performed by

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