

Test Report No. 7191046530-MEC12/02-DA
dated 30 Jan 2013



PSB Singapore

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SUBJECT:

Cyclic movement endurance test on "CKS 840" EN 2 floor spring submitted by CKS Glass Hardware Sdn Bhd.

TESTED FOR:

CKS Glass Hardware Sdn Bhd
No. 37, Jalan Tembaga SD5/2G
Bandar Sri Damansara
52200 Kuala Lumpur
Malaysia

DATE SUBMITTED:

20 June 2012

Test duration:

22 November 2012 to 30 January 2013

METHOD OF TEST:

Adopting BS EN 1154:1997/A1:2002 - Clause 7.3 : Mechanical performance and durability.

The test was conducted at TÜV SÜD PSB fire test laboratory located at No. 10, Tuas Avenue 10, Singapore 639134.

David J...



Laboratory:
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TÜV SÜD Asia Pacific Pte. Ltd.
3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223
TUV®



DESCRIPTION OF SAMPLES :

1.0 One piece of floor spring was received. The following descriptions were said to be :

- 1.1 Brand : CKS 840 (20NM) EN2 with fixed backcheck
- 1.2 Overall dimension (Closer with casing) : 310mm (L) x 108mm(W) x 43mm(D)
- 1.2 Country of origin : China
- 1.3 Permanent marking on closer body : CKS 20NM 12 03
(Classification and number of this standard not marked on the tested sample)
(Brand/model number/year and month of manufacture)
- 1.4 The manufacturer's installation instructions were provided.
- 1.5 There was no manual hold open device.
- 1.6 The control regulators operated only by means of a tool.
- 1.7 There was no delay action function.
- 1.9 Free play at the zero position was not exceeding 3mm.

RESULTS:

2.0 Measurement after 5,000 test cycles

Description		Measurements		Requirements (Size 2)
		Right	Left	
Between 0° to 4°	Closing moment	14.8	14.5	13 to < 18 N.m
	Opening moment	21.3	19.5	-
Between 88° to 92°	Closing moment	5.7	4.8	4 N.m minimum
	Opening moment	20.7	21.3	-
Min. closing torque at max. opening angle permitted by the closer	Closing moment	6.5	4.2	3 N.m minimum
Between 0° to 60°	Opening moment	22.8	22.0	36 N.m maximum
Between 0° to 4°	Efficiency	69.5	74.4	50 % minimum
Closing time from 90°				
Adjustability		3.0	3.0	3 sec. or less
		> 20		20 sec. or more
Closing overload test		Yes		Able to withstand

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3.0 Verification after 100,000 test cycles

Description	Measurements		Requirements (Size 2)
	Right	Left	
Backcheck	Comply	Comply	The test door shall stop before the 90° open position.

4.0 Measurement after 500,000 test cycles

Description		Measurements		Requirements (Size 2)
		Right	Left	
Time taken to close from 90° to fully closed position		4.6	4.8	Shall be less than 2 times or more than 0.7 times the original value. (i.e Between 3.6 and 10.4 sec)
		(original value : 4.9sec)	(original value : 4.8sec)	
Between 0° to 4°	Closing moment	14.0	13.5	13 to < 18 N.m
	Opening moment	20.5	19.6	-
Between 88° to 92°	Closing moment	5.6	5.7	4 N.m minimum
	Opening moment	21.3	20.4	-
Min. closing torque at max. opening angle permitted by the closer	Closing moment	5.6	5.8	3 N.m minimum
Between 0° to 60°	Opening moment	23.0	21.2	36 N.m maximum
Between 0° to 4°	Efficiency	68.3	68.9	50 % minimum
Closing time from 90°				
Adjustability		3.0	2.8	3 sec. or less
		>20		20 sec. or more
Closing overload test		Yes		Able to withstand
Free play at the zero position		0	1	6mm maximum

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5.0 Observations throughout test

Description	Measurements	Requirements (Size 2)
Fluid leakage	No leakage	No fluid leakage from door closer.
Damage	No damage	No damage to door closer or its arms that would adversely affect its performance.

CONCLUSION :

Adopting BS EN 1154:1997/A1:2002 - Clause 7.3 : Mechanical performance and durability, the test results obtained show that the samples tested meet with the requirements and is classified as:

3	8	2	0	1	0
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REMARK :

For the test the door closer was installed according to the installation manual for size 2.



David Ang
Engineer



Sharon Fong
Senior Engineer
(Fire Property)
Mechanical Centre

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July 2011

