

Test Report No. 719195584-MEC11-MHA
dated 03 May 2011



PSB Singapore

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SUBJECT:

Cyclic movement endurance test on "GCC" GTS-650 EN 2 floor spring submitted by First Access International Pte Ltd.

TESTED FOR:

Good Credit Corporation
No. 13, Longmen Road., Situn Dist,
Taichung 40757
Taiwan

Attn: Mr. Harrison Liao

DATE SUBMITTED:

25 Jan 2011

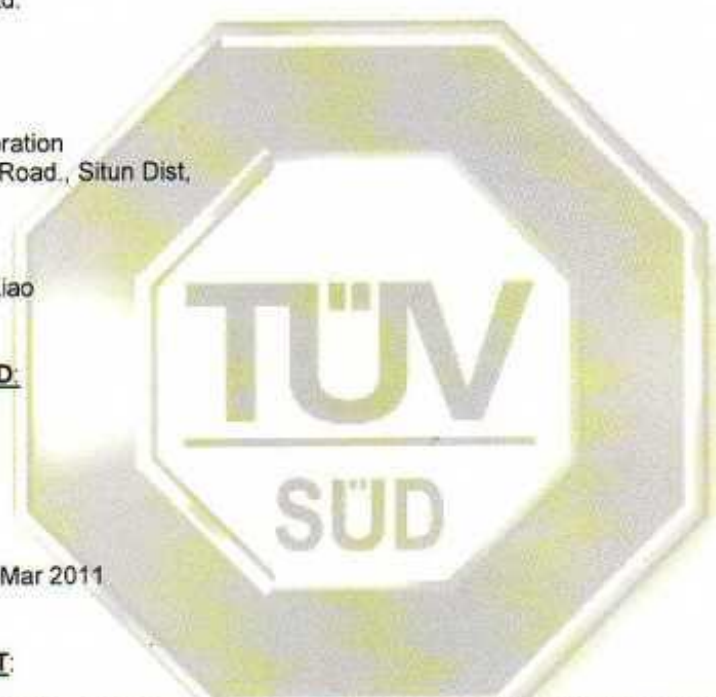
Test duration:

25 Jan 2011 to 31 Mar 2011

METHOD OF TEST:

Singapore Standard 332: 2007: Annex F- Clause 5.1 - For mechanical performance and durability.

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



Laboratory:
TÜV SÜD PSB Pte. Ltd.
No. 1 Science Park Drive
Singapore 118221

Phone : +65-6865 1333
Fax : +65-6776 8670
E-mail: testing@tuv-sud-psb.sg
www.tuv-sud-psb.sg
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223
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		LA-2017-0380-A LA-2017-0380-A-1 LA-2017-0381-F LA-2017-0382-B LA-2017-0383-Q LA-2017-0384-Q LA-2017-0385-E LA-2017-0386-C	The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme. Tests/Calibrations marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our laboratory.
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DESCRIPTION OF SAMPLES :

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

- 1.1 Brand : "GCC" GTS-650 EN2 without backcheck function.
- 1.2 Overall dimension (Closer with casing) : 275mm (L) x 97mm(W) x 40mm(H)
- 1.3 Country of origin : Taiwan
- 1.4 Permanent marking on closer body : GCC GTS-650 25 10 06
(Brand/model number/year and week of manufacture)
- 1.5 The manufacturer's installation instructions were provided.
- 1.6 There was no manual hold open device.
- 1.7 The control regulators operated only by means of a tool.
- 1.8 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		SS 332 : 2007 Clause 5.1 (Annex F) Requirements Size 2
		Right	Left	
Between 0° to 4°	Closing moment	16.5	16.6	13 to < 18 N.m
	Opening moment	25.0	24.5	-
Between 88° to 92°	Closing moment	5.8	4.7	4 N.m minimum
	Opening moment	23.5	24.1	-
Min. closing torque at max. opening angle 90° permitted by the closer	Closing moment	7.7	7.9	3 N.m minimum
Between 0° to 60°	Opening moment	26.3	26.2	36 N.m maximum
Between 0° to 4°	Efficiency	66.0	67.8	50 % minimum
Closing time from 90°				
Adjustability		2.09	2.47	3 sec. or less
		> 20		20 sec. or more
Closing overload test		Yes		Able to withstand



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3.0 Continuation of 5,000 test cycles to 500,000 cycling test

Description	Measurements		SS 332 : 2007 Clause 5.1 (Annex F) Requirements Size 2
	Right	Left	
Adjustability (clause 5.2.8.1)	5.0	5.53	3-7 sec

4.0 Measurement after 500,000 test cycles

Description	Measurements		SS 332 : 2007 Clause 5.1 (Annex F) Requirements Size 2	
	Right	Left		
Time taken to close from 90° to fully closed position	5.16 <small>(original value : 5.3s)</small>	4.97	Shall be less than 2 times or more than 0.7 times the original value. <small>(i.e Between 3.7 and 10.6 sec)</small>	
Between 0° to 4°	Closing moment	16.1	16.8	13 to < 18 N.m
	Opening moment	24.3	24.1	-
Between 88° to 92°	Closing moment	7.0	5.9	4 N.m minimum
	Opening moment	24.0	24.1	-
Min. closing torque at max. opening angle 90° permitted by the closer	Closing moment	7.3	7.8	3 N.m minimum
Between 0° to 60°	Opening moment	25.3	25.4	36 N.m maximum
Between 0° to 4°	Efficiency	66.3	69.7	50 % minimum
Closing time from 90°				
Adjustability	2.25	2.38	3 sec. or less	
	>20		20 sec. or more	
Closing overload test	Yes		Able to withstand	
Free play at the zero position	1		6mm maximum	

5.0 Observations throughout test

Description	Measurements	SS 332 : 2007 Clause 5.1 (Annex F) 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 :

According to Singapore Standard 332: 2007: Annex F:- Clause 5.1 - for 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.



Min Htet Aung
Associate Engineer



Sharon Teng
Senior Engineer
(Fire Safety & Security Products)
Mechanical Centre

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March 2010