

# TEST REPORT



Your Ref: FEPL/KL/L/2002/279

Date: 2002-12-10

Our Ref: 54S021420/ST

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BID: 68653771

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**NOTE: This Report** is issued subject to the "Terms and Conditions Governing Technical Services" set out in the "Request for Technical Services" form. The terms and conditions governing the issue of this report are set out overleaf.

Subject:

Cyclic movement endurance test on 'GCC' GTS-840-362, size 3 floor spring with fixed backcheck function submitted by FireLine Engineering Pte Ltd.

Tested for :

Good Credit Corporation  
P.O. Box 1700 Taichung 400  
Taiwan. R.O.C

Attn: Mr Harrison Liao

Date submitted:

2002-05-30

Test duration:

2002-06-04 to 2002-09-30

Method of test:

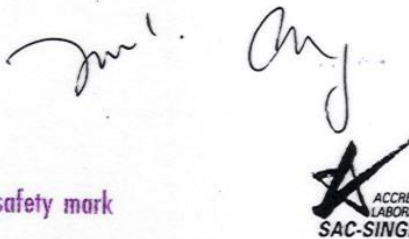
- 1.0 EN 1154 : 1996 (except clause 7.2.2 & 7.4) : Building hardware-Controlled door closing devices – Requirements and test methods or Singapore Standard 332 : 2000 : Clause 5 : Cyclic movement endurance test.

Description of sample:

- 2.0 The description of the door closer submitted for the test, is as follows:
- 2.1 Brand : "GCC" GTS -840-362 with fixed backcheck function
- 2.2 Overall dimension : 306mm x 108mm x 40mm(H)



Your product quality and safety mark



LA-2001-0212-A  
LA-2001-0213-F  
LA-2001-0214-E  
LA-2001-0215-B  
LA-2001-0216-G  
LA-2001-0217-G

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

Results:

- 3.0 The door closer was verified to comply with the following items :
- 3.1 Permanent marking on closer body : 'GCC' GTS-840-362  
(Brand/model number/power size)
- 3.2 The manufacturer's installation instructions were provided.
- 3.3 There was no manual hold open device.
- 3.4 The control regulators operated only by means of a tool.
- 3.5 Adjustment of closing action was by means of tool.
- 3.6 There was no delayed action function.

4.0 Measurement after 5,000 test cycles

Description		Measurements		EN 1154 : 1996 (SS 332 : 2000 : Clause 5) Requirements
		Right	left	
Between 0° to 4°	Closing moment	22.3	23.5	18 to < 26 N.m
	Opening moment	39.2	39.5	-
Between 88° to 92°	Closing moment	17.8	16.4	6 N.m minimum
	Opening moment	47.3	51.6	-
Between 0° to 90°	Closing moment	7.0	11.2	4 N.m minimum
Between 0° to 60°	Opening moment	43.0	43.9	47 N.m maximum
Between 0° to 4°	Efficiency	56.9	59.5	55% minimum
Closing time from 90°				
Adjustability		Yes		3 sec. or less
		Yes		20 sec. or more
Closing overload test		Yes		Able to withstand

5.0 Verification after 100,000 test cycles

Backcheck	Complied	The test door shall stop before the 90° open position.
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6.0 Measurement after 500,000 test cycles

Description		Measurements		EN 1154 : 1996 (SS 332 : 2000 : Clause 5) Requirements
		Right	Left	
Time taken to close from 90° to fully closed position		6.6 sec (original value : 4.8 s)		Shall be less than 2 times or more than 0.7 times the original value. (i.e Between 3.4 and 9.6 sec.)
Between 0° to 4°	Closing moment	22.4	20.5	18 to < 26 N.m
	Opening moment	37.2	34.9	-
Between 88° to 92°	Closing moment	18.7	23.4	6 N.m minimum
	Opening moment	45.9	51.9	-
Between 0° to 90°	Closing moment	17.4	16.0	4 N.m minimum
Between 0° to 60°	Opening moment	41.7	41.2	47 N.m maximum
Between 0° to 4°	Efficiency	60.2	58.7	55% minimum
Closing time from 90°		Yes		Not less than 20 sec.
Closing overload test		Yes		Able to withstand
Free play at the zero position		Complied		6mm maximum

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7.0 Observations throughout test


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 EN 1154 : 1996 (except clause 7.2.2 & 7.4) or Singapore Standard 332 : 2000 : Clause 5 : Cyclic movement endurance test, the test results obtained show that the floor spring door closer 'GCC' GTS-840-362 size 3, floor spring with fixed backcheck function, meet with the requirements and is classified as:

3	8	3	1	1	0
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 Sharon Tong  
 Senior Engineer

  
 Joseph Chng  
 Assistant Vice President  
 (Fire Safety & Security Products)  
 Mechanical