

TEST REPORT



Your Ref: 54Q0402563

Date: 12 Sep 2004

Our Ref: 54S044164/1/OKB

Page: 1 of 4

DID: 68851429

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Subject: Endurance test (100,000 cycles) of shower hinge.

Tested for: KSY Marketing Pte Ltd
10 Admiralty Street, #06-49, North Link Building
Singapore 757695

Attn: Mr Eric Koh

Sample description: 3 samples of shower hinges described as follows, were submitted;

Brand: Rowell
Model no: SH-773-1 Wall to glass
Material: Brass
Finishing: Bright Chrome Plated

Drawing Submitted: 1 sheets of company's detail drawing on page 3.

Technical Details: 1) Self-closing function when the door stays within 25°.
2) Suitable for 6mm to 10mm door thickness.
3) Maximum door weight, 45 kg.

Method of Test: Adopted from BS 7352: 1990 Specification for strength and durability performance of metal hinges for side hanging applications and dimensional requirements for template drilled hinges - Clause 4.3 - Endurance test.

David Li
Associate Engineer

Ong Khay Beng
Engineer
Building & Industrial Products
Testing Group



TEST SEQUENCE:

Clause 4.3: Endurance test (100,000 cycles)

- 1) At 20 and 10,000 cycles, measure and record the initial horizontal and vertical gaps between the hinged leaf and the datum surfaces.
- 2) At 4,000 and 100,000 cycles, measure and record the torque required to initiate movement of the hinged leaf at opening angles of $0 \pm 5^\circ$, $30 \pm 5^\circ$, $60 \pm 5^\circ$ and $90 \pm 5^\circ$.

TEST RESULTS:

Date of test: 12 Aug 2004

The door used was design according to client's details as given.

Width: 800mm

Weight: 35 kg

Glass thickness: 10mm

(1) Measurement of horizontal and vertical gaps

	Initial at 20 cycles (mm)	After 100,000 cycles (mm)	Wear measurement (mm)	Results	BS 7352: 1990 requirements Clause 5.3.2.1
Horizontal gap	140.7	140.8	0.1	Passed (See remarks *)	The amounts of lateral and vertical wear of the hinge tested measured as displacements of the datum surfaces shall be within the shaded area as shown in Figure 1.
Vertical gap	56.7	56.8	0.1		

Remarks *: The shower hinge was unable to perform the self-closing function at 25° after the 100,000 cycles based on product's specifications.

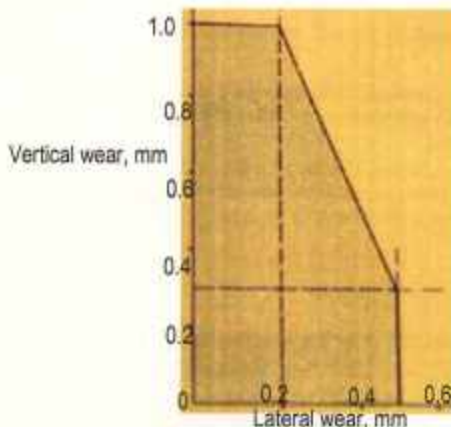


Figure 1: Limits of allowable wear in endurance test



Figure 2: Test sample

(2) Torque to initiate movement of the hinged leaf

Door opening	Torque measurement (Nm)	
	Initial at 4,000 cycles	After 100,000 cycles
$0 \pm 5^\circ$	6.3	1.6
$30 \pm 5^\circ$	6.3	1.6
$60 \pm 5^\circ$	3.9	3.1
$90 \pm 5^\circ$	3.9	3.9

Parvathi J



KSY MARKETING PTE LTD

Leading in Architectural Hardware & Accessories
for Doors & Windows

ROWELL

SH-773-1 Wall to Glass



FEATURES:

MATERIAL: Brass

DOOR THICKNESS: 6mm to 10mm

DOOR WEIGHT: 3.5 kgs maximum

FINISH: Bright Chrome Plated (CP)

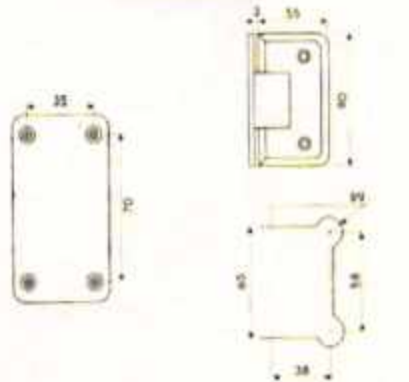
Satin Chrome Plated (SC)

Titanium Plated (TI)

Polished Brass (PB)



Double action spring
return door from 25°
in each direction



Glass cut-out top and bottom

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Rowell

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June 2004