

**TEST REPORT**

Your Ref : Letter dtd 13/9/96

Date : 1996-04-23

Our Ref : G171051/MPH  
(Please quote our ref. no. in reply)

Page : 1/2

DID : 8701838

Fax : 7793903



(PSB is established as a statutory and testing authority by an Act of Parliament, the PSB Act No 1 of 1996)

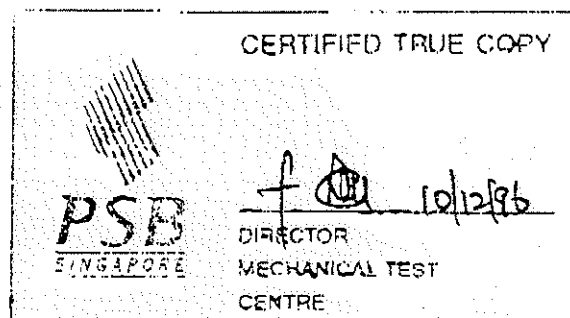
NOTE: This Report is issued subject to the "Terms and Conditions Governing Technical Services" set out in the "Request for Technical Services" form. The terms and conditions governing the issue of this report are set out overleaf. This Report is not a Certificate of Quality. It only applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results shall not be used to indicate or imply that they are applicable to other similar terms. In addition, such results must not be used to indicate or imply that PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that PSB in any way "guarantees" the later performance of the product/equipment.

**SUBJECT:**

Cyclic test on floor mounted door closer submitted by EPCO Architectural Hardware Pte Ltd on 1996-02-15.

**TESTED FOR:**

EPCO Architectural Hardware Pte Ltd  
107A, Jalan Kembangan  
Singapore 419146

**DESCRIPTION OF SAMPLE:**

Components of door leaf assembly were said to be of the following:-

| Component                   | Brand | Overall Dimension (mm) | Weight (kg) |
|-----------------------------|-------|------------------------|-------------|
| 1) Floor Spring 863-90 25Nm | EPCO  | 306 x 108 x 40         | -           |
| 2) Patch Fitting PF-10      | EPCO  | 166 x 52 x 31          | 0.60        |
| 3) Patch Fitting PF-20      | EPCO  | 166 x 52 x 31          | 0.66        |
| 4) Tempered Glass Door      | -     | 1000 x 2000 x 12 thick | 59.0        |

*Handwritten signature*

The report shall not be reproduced wholly or in parts and no reference shall be made by the Client to PSB or to the report or results furnished by PSB in any advertisements or sales promotion.

G171051/MPH

2/2

METHOD OF TEST:

- 1) A tempered glass door leaf, weighing 59 kg and of size 1000mm x 2000mm x 12mm thick was supported by "EPCO" floor spring 863-90 25Nm (door closer) by means of "EPCO" patch fitting PF-10 at the bottom. The top was secured to overhead pivot by means of "EPCO" patch fitting PF-20. The whole assembly thus simulated the actual use of the floor mounted door closer.
- 2) Before commencing the test, the door closer was adjusted to give a closing time of 6 seconds from a 90 degrees test door opening position.
- 3) The test door was opened by mechanical means from a completely closed position to an opening of not less than 80 degrees but not more than 90 degrees. The test door was then allowed to close by itself and thereafter starting a new cycle.
- 4) At 5,000 cycles and 500,000 cycles, the closing and opening moments at an angle of 5 degrees (door in an opening angle of 5 degrees) were measured.
- 5) The door closer and patch fittings were checked for proper functioning after 500,000 cycles. The door closer and patch fittings were also checked for undue wear or damages on any part of the assembly or other defects which could impair its reliability of functioning.

Results of Test:

| Floor Spring<br>863-90 25 Nm   | Opening moment<br>(at an opening angle of 5<br>degrees)   | Closing moment<br>(at an opening angle of 5<br>degrees) |
|--|---|---|
| At 5,000 cycles  | 33.1 Nm   | 25.7 Nm   |
| At 500,000 cycles  | 32.3 Nm   | 24.9 Nm   |
| Examination of door closer and patch fittings after completion of 500,000 cycles | Functioning of door closer and patch fittings remained satisfactory. No evidence of undue wear or damages on any part of the assembly or other defects which could impair its reliability of functioning. |   |

*Mah*

Mah Poh Huat  
Testing Officer

CERTIFIED TRUE COPY

*Joseph Chng*  
Joseph Chng  
Assistant Head (Fire Technology)  
Mechanical Test Centre

*10/12/96*

SINGAPORE  
MECHANICAL TEST  
CENTRE