

Test Report No. 7191132843-MEC16-SL
dated 08 APR 2016



PSB Singapore

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SUBJECT:

Load test on cable grille and cable railing

TESTED FOR:

Legate Enterprise Pte Ltd
7030, Ang Mo Kio Avenue 5
#01-47, North-Star @ AMK
Singapore 569880

Attn: Ms Evelyn

SAMPLE DESCRIPTION:

The following five sets of test frame with the respective cable configurations were received on 29th Feb 2016 and 06th Apr 2016:

- 1) Three sets of 850mm x 850mm test frame with vertical tension cables spacing out at 75mm apart (Refer photo 1 & 2);
- 2) Three sets of 850mm x 850mm test frame with vertical tension cables spacing out at 75mm apart and a restrainer cable running across the vertical cables at 425mm (Refer to Photo3 & 4);
- 3) Two set of 500mm x 500mm test frame with vertical tension cables spacing out at 75mm apart (Refer to Photo 5 & 6);
- 4) Two set of 500mm x 500mm test frame with vertical tension cables spacing out at 75mm apart and a restrainer cable running across the vertical cables at 205mm (Refer to Photo 7 & 8).

TEST METHODS:

As requested by the client, the following test procedures were conducted:

Compressive Load Test

- 1) The 850mm x 850mm test frame with vertical tension cables spacing out at 75mm apart was placed onto the test bed of the Universal Testing Machine (UTM). An indenter plate with a dimension of 600mm x 600mm was then placed at the centre of the test frame (Refer to Photo 9). Compressive load was applied to the indenter till failure occurs and the maximum load was recorded.



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TEST METHODS (CON'T):

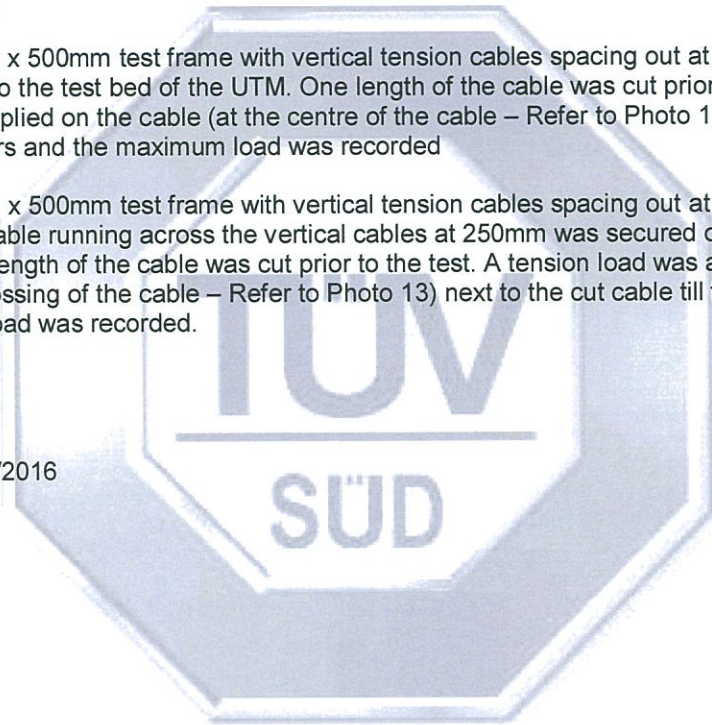
- 2) The 850mm x 850mm test frame with vertical tension cables spacing out at 75mm apart was placed onto the test bed of the UTM. A sphere indenter with a diameter of 150mm was then placed at the centre of the test frame (Refer to Photo 10). Compressive load was applied to the indenter till failure occurs and the maximum load was recorded.
- 3) The 850mm x 850mm test frame with vertical tension cables spacing out at 75mm apart and a restrainer cable running across the vertical cables at 425mm was placed onto the test bed of the UTM. A sphere indenter with a diameter of 150mm was then placed at the centre of the test frame (at the inter-crossing of the cable – Refer to Photo 11). Compressive load was applied to the indenter till failure occurs and the maximum load was recorded.

Tension Load Test

- 1) The 500mm x 500mm test frame with vertical tension cables spacing out at 75mm apart was secured onto the test bed of the UTM. One length of the cable was cut prior to the test. A tension load was applied on the cable (at the centre of the cable – Refer to Photo 12) next to the cut cable till failure occurs and the maximum load was recorded
- 2) The 500mm x 500mm test frame with vertical tension cables spacing out at 75mm apart with a restrainer cable running across the vertical cables at 250mm was secured onto the test bed of the UTM. One length of the cable was cut prior to the test. A tension load was applied on the cable (at the inter-crossing of the cable – Refer to Photo 13) next to the cut cable till failure occurs and the maximum load was recorded.

DATE OF TEST:

03/04/2016 – 06/04/2016





TEST RESULTS:

Table 1: Compressive Load Test with 600 x 600 Plate

Sample Reference	Max Load (N)	Observation
Premium Aplus - 850mm x 850mm test frame with vertical tension cables.	9988	Cables broke (Refer to Photo 14)
Supreme Black - 850mm x 850mm test frame with vertical tension cables.	8800	Cable broke (Refer to Photo 15)

Table 2: Compressive Load Test with Ø150mm Sphere

Sample Reference	Max Load (N)	Observation
Premium Aplus - 850mm x 850mm test frame with vertical tension cables.	986	Cable broke (Refer to Photo 16)
Supreme Black - 850mm x 850mm test frame with vertical tension cables.	1073	Cable broke (Refer to Photo 17)
Premium Aplus - 850mm x 850mm test frame with vertical tension cables and a restrainer cable.	1354	Cable broke (Refer to Photo 18)
Supreme Black - 850mm x 850mm test frame with vertical tension cables and a restrainer cable.	1767	Cable broke (Refer to Photo 19)



TEST RESULTS (CON'T):

Table 3: Tension Load Test Result

Sample Reference	Max Load (N)	Observation
Premium Aplus - 500mm x 500mm test frame with vertical tension cables.	726	Cable pulled-off (Refer to photo 20)
Supreme Black - 500mm x 500mm test frame with vertical tension cables.	94	Cable broke (Refer to Photo 21)
Premium Aplus - 500mm x 500mm test frame with vertical tension cables and a restrainer cable	764	Cable broke (Refer to Photo 22)
Supreme Black - 500mm x 500mm test frame with vertical tension cables and a restrainer cable	772	Cable broke (Refer to Photo 23)

Sean Loh
Associate Engineer

Oh Heng Hwa
Executive Engineer
Industrial Group
Mechanical Centre



Appendix:



Photo. 1 : 850 x 850 (Premium Aplus)



Photo. 2 : 850 x 850 Supreme Black)



Photo. 3 : 850 x 850 (Premium Aplus with cross wire)



Photo. 4 : 850 x 850 Supreme Black with cross wire)

A handwritten signature in black ink, appearing to be 'Sam Q'.

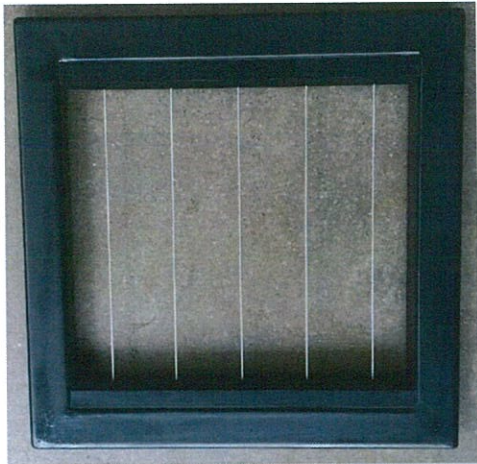


Photo. 5 : 500 x 500 (Premium Aplus)

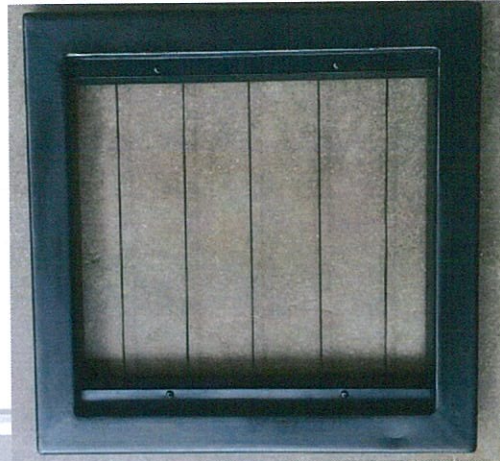


Photo. 6 : 500 x 500 Supreme Black)



Photo. 7 : 500 x 500 (Premium Aplus with cross wire)



Photo. 8 : 500 x 500 (Supreme Black with cross wire)

A handwritten signature in black ink, appearing to read 'Sam Q'.



Photo. 9 : Typical test setup for Compression Test Method 1



Photo. 10 : Typical test setup for Compression Test Method 2





Photo. 11 : Typical test setup for Compression Test Method 3



Photo. 12 : Typical test setup for Tension Test Method 1





Photo. 13 : Typical test setup for Tension Test Method 2



Photo. 14 : Wire broke



Photo. 15 : Wire broke



Photo. 16 : Wire broke



Photo. 17 : Wire broke



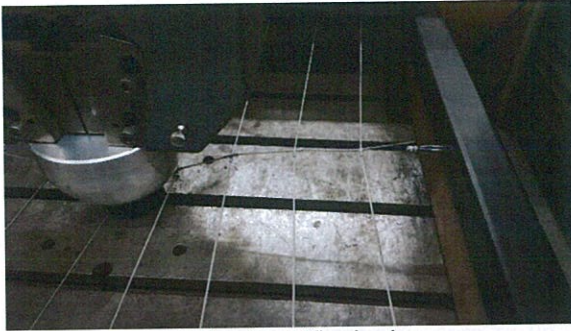


Photo. 18 : Wire broke



Photo. 18 : Wire broke



Photo. 20 : Wire pull-off



Photo. 21 : Wire broke



Photo. 22 : Wire broke



Photo. 23 : Wire broke





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July 2011

