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TEST REPORT

Title : **Testing of KeeGuard Roof Edge Protection System with 440-7 Counter Weights to EN 14122-3**

Laboratory No. : **084505-20849**

Client : 
Kee Safety Ltd
1 Boulton Road
Reading
Berkshire
RG2 0NH

For Attention of : **Philip Higgs**

Your Reference : **Kee-Guard with 440-7 counter weights**

Date of Issue : **27th August 2008**

Our Reference : **H/shared/grainger/084505-20849**

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TESTING OF THE KEE-GUARD 440-7 ROOF EDGE PROTECTION SYSTEM TO EN ISO 14122:PART 3

1.0 INTRODUCTION

Kee-Safety Ltd. supplied a free standing roof edge protection system referenced as Kee-Guard 440-7, for static load testing to EN ISO 14122 Safety of machinery. Permanent means of access to machinery. Part 3 Stairways, stepladders and guard-rails.

2.0 SAMPLE

The test sample was a freestanding counterbalance system made up of free end counterbalance arms of Ø42.4mm x 3.2mm thick galvanised steel tube 1575mm long and intermediate arms of the same material 1075mm long. The free end counterbalance consisted of 4 no. nominally 13.5kg weights and the intermediate counterbalance consisted of 1 no. nominally 13.5kg weight. The weights were secured to the tubes with 75.7 collars. Uprights were positioned at 2000mm centres. Two horizontal guardrails were fixed onto the inside of the uprights. These consisted of Ø48.3mm x 3.2mm thick galvanised steel and were fixed at 590mm and 1100mm above the base. The uprights were Ø48.3mm x 4.0mm thick galvanised steel.

A 6m run was set-up as shown in Figures 1.

3.0 TEST PROGRAMME

A load was applied to the system at 1100mm above the base in 5 positions as detailed below and shown in Figure 1:

- Free end upright
- Mid -span of end bay
- Intermediate upright with intermediate counterbalance
- Mid-span, central bay

4.0 TEST METHOD

A 1.2mx 2.4m x 18mm thick plywood sheet was fixed to the structures laboratory strong floor at each upright position and torch-on green mineral finish roofing felt was fixed down to the plywood to achieve a co-efficient of friction between the counterbalance surface and the test surface of greater than 0.4. The system was then set-up as detailed in section 2 above and as shown in Figure 1.

Using a hydraulic ram and load cell, a preload of 150N was applied at the test position and held for 1 minute. The load was then released and a linear voltage displacement transducer was positioned on an independent frame to measure deflection of the system at the load position. The transducer was zeroed and a load of 600N was applied and held for 1 minute. The deflection reading was taken and the load was released.

The test was repeated at each load position.

5.0 RESULTS

The maximum deflection recorded at each test position is given in Table 1.
A General view of the test arrangement is shown in Plates 1.

6.0 SUMMARY

According to EN ISO 14122 Part 3, the system under a static load must achieve a displacement of no more than 30mm at the applied load.

For each test position the maximum deflection was measured as less than 30mm see Table 1. In addition, there was no perceivable deformation of the system at maximum deflection.

Authorised by: .



Matthew Grainger
TESTING CO-ORDINATOR, CBT



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TABLE

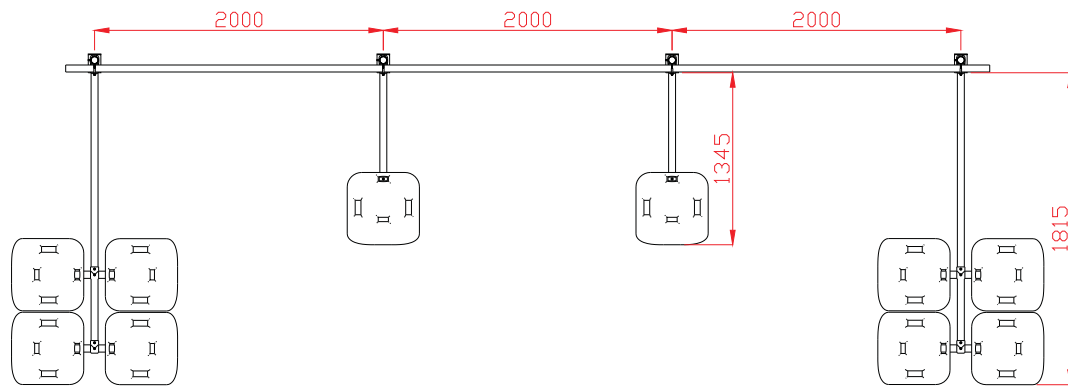
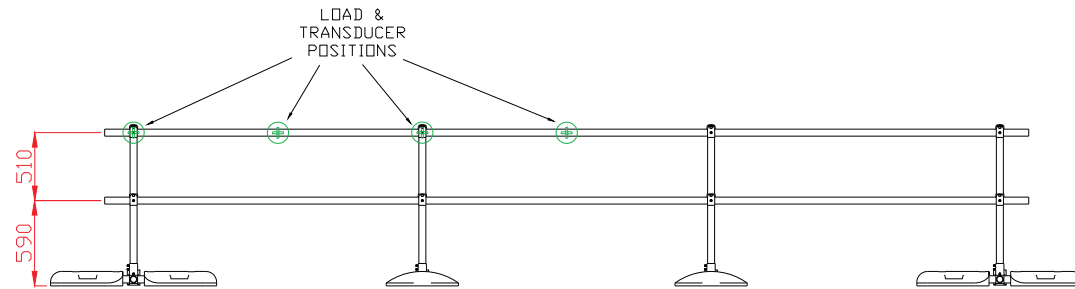
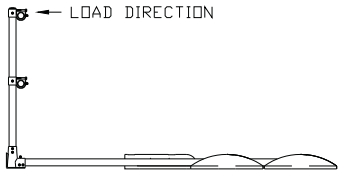
Table 1

Maximum Recorded Deflections after 1 minute of 600N load application

Test Position	Applied Load (N)	Maximum Deflection (mm)	¹ Residual Deflection (mm)
Free end upright	600	29.14	6.37
Mid-span intermediate bay	600	20.70	1.12
Intermediate upright with counterbalance	600	24.62	2.12
Mid-span, central bay	600	27.88	2.25

Note 1: There are no requirements for residual deflection in the standard this is for client information only.

FIGURES



DWG. N°: **Figure 1** SCALE: NOT TO SCALE DATE DRAWN: 27/08/2008 DRAWN BY: A. BELLAMY

TITLE:
Detail and dimensions for system tested to EN ISO 14122-3



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PLATE



Plate 1

General view of Intermediate Upright of the Fall Protection System