

# CERTIFICATE OF TEST

Issued by: TUV NEL Ltd.

Certificate No. : MUIV-01 Rev. 1

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TUV NEL Ltd.  
East Kilbride,  
Glasgow, G75 0QF, UK.

Tel No. 01355 220222.  
Fax No. 01355 272999

## Authorised Signatories:

D Hare, C Allison

**Customer** Capital Safety Group, 5A Merse Road, North Moons Industrial Estate, Redditch, Worcester, B98 9HL.

**Project No.** PPE171 **NEL Test Mark:** MUIV-01

**Specimen received date** 28 May 2012 **Date of Test:** 29 May -07 June 2012

**Specimen Description:** Railock Mk III guided type fall arrester on an extruded aluminium rail. The system was tested on a steel ladder. A full detailed description of the system, including component parts, is included in Appendix 1.

**Object of Test** Testing was carried out to determine the ability of the fall arrest system to arrest a 100 kg steel mass when subjected to dynamic strength testing in accordance with VG11 Recommendation Sheet 073 (CNB/P/11.073), Revision 1.

**Method of Test** The system was mounted in a strictly vertical orientation and positioned mid-span of the ladder rungs. Using a 100 kg steel mass the system was tested as described in Annex 2 of CNB/P/11.073. Tests undertaken included Dmin (Minimum distance dynamic test), Dmax (Maximum distance dynamic test), FB (Fall Back dynamic test) and SW (Sideways maximum distance dynamic test). For each of the tests the mass was raised and released using a hoist fitted with quick release device. Photographs of the test set-ups can be seen in Appendix 2.

**Results** Test results are detailed in Appendix 2.

**Comments** The Capital Safety Railock Mk III Vertical fall arrest system, complete with profiled aluminium rail lifeline, passed the dynamic strength tests as described in VG11 Recommendation Sheet 073 (CNB/P/11.073), Revision 1 when tested at TUV NEL Ltd.

## Distribution

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Tested by D. Hare.....

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PPE/Testcert\_general\_Issue 3.0



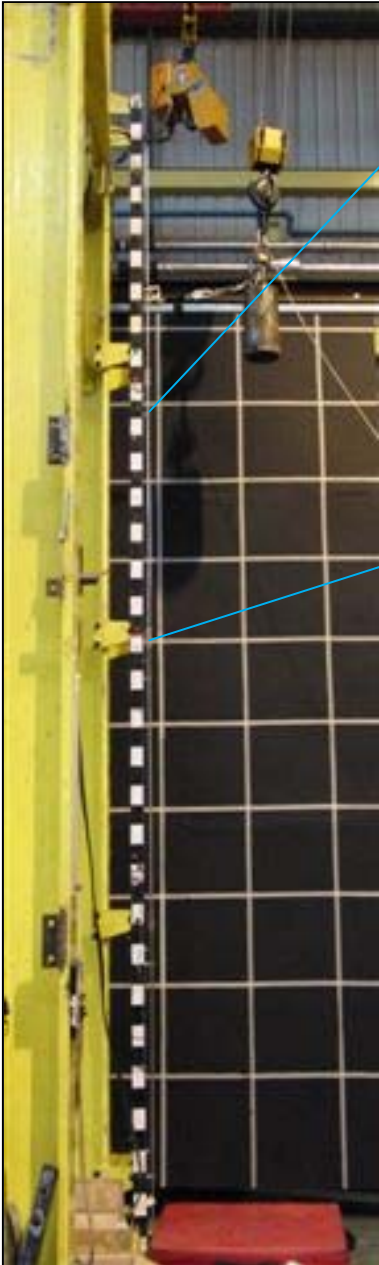
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# APPENDIX 1 - PRODUCT IDENTIFICATION

The **Railock Mk III Vertical Fall Arrest System** comprised of four 1.5 m spans of **Railock Aluminium Profiled Rail Ref. KC1P1051A** which were joined together at the ends via **Railock Joint Plates Ref. KC1P1059A** to form a 6.0 metre overall span. The rail was mounted strictly vertical on a TUV NEL steel ladder (Part of NEL's Test Rig PPE2) via **Adjustable Rung Mounted Brackets Ref. KC1P1052/5X**. The brackets were positioned on the top rung of the ladder and at intervals of 6 rungs thereafter. A total of 5 brackets were used to fix the rail to the ladder. A **Railock Mk III Guided Fall Arrester** was fitted to the rail. The Railock MK III fall arrester incorporated a **Type FTED IRLK/1 Absorber Pack** which had a captive double action snap hook complete with swivel fitted to the free end to allow attachment to a safety harness. Figure 1 shows the ladder and rail mounted on NEL Test rig PPE3. Figure 2 shows an **Adjustable Rung Mounted Brackets Ref. KC1P1052/5X** in-situ. Figure 3 shows the **Railock Joint Plates Ref. KC1P1059A** and figure 4 shows the **Railock Mk III arrester** employed with the system.



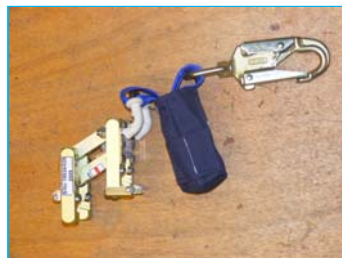
**Figure 1**  
Railock Mk III system  
mounted on the steel ladder  
of TUV NEL Test Rig PPE3



**Figure 2**  
Rung Mounted Brackets  
Ref. KC1P1052/5X



**Figure 3**  
Railock Joint Plates  
Ref. KC1P1059A



**Figure 4**  
Railock Mk III Guided Fall Arrester  
complete with webbing absorber  
pack and double action snap  
hook.

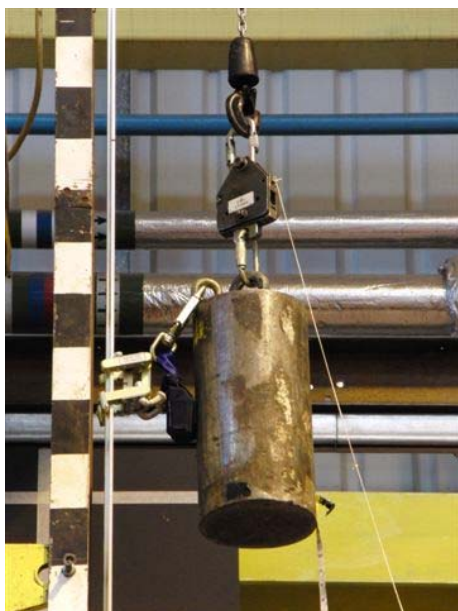
## APPENDIX 2 – TEST RESULTS

### VG11 Recommendation Sheet 073 (CNB/P/11.073), Revision 1

#### Test 1 - Dmin: Minimum Distance Dynamic Test TUV NEL Test Mark: MUIV-01 T01

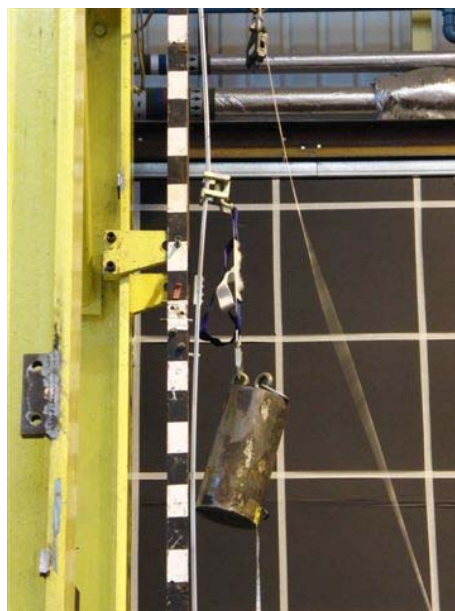
Arrester Ref: Railock Mk III Model No: KC11050234, s/n 24081/013  
Webbing absorber pack Ref No: FTED1RLK/1, s/n 00729115035  
Captive double action snap-hook complete with swivel eye.

Arrester position (Pre-release): Between two top rail mounts.  
Gap between 100 kg steel test mass and rail: 145 mm  
Steel Mass to floor (Pre Release): 5.00 m  
Steel Mass to floor (Post Release): 4.00 m  
Steel Mass Displacement (H1): 5.00 - 4.00m = 1.00 m (Allowable 1.0 m)  
Railock Mk III Arrester displacement on rail (H2): 140 mm  
Energy Absorber deployment: 335 mm  
Comments: Mass held clear of floor  
Result: **Pass**



**Figure 1**

Dmin Test Pre-release.  
Test mass positioned as  
closely as linkage would  
allow



**Figure 2**

Dmin Test Post-arrest  
Test mass arrested by  
system within requirements  
of draft test spec.

**Test 2 - Dmax: Maximum Distance Dynamic Test**  
**TUV NEL Test Mark: MUIV-01 T02**

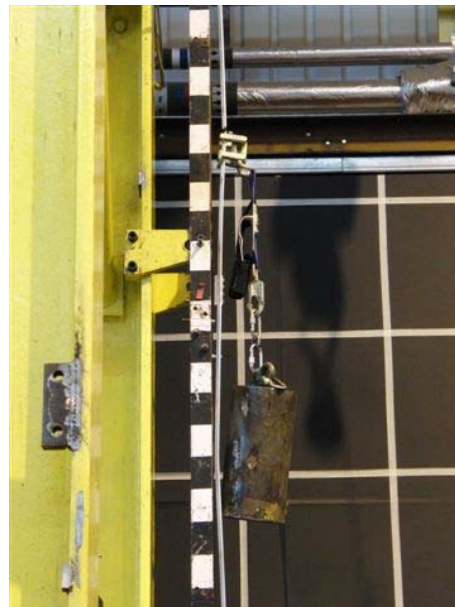
Arrester Ref: Railock Mk III Model No: KC11050234, s/n 23445/051  
Webbing absorber pack Ref No: FTED1RLK/1, s/n 10651331159  
Captive double action snap-hook complete with swivel eye.

Arrester position (Pre-release): Between two top rail mounts  
Gap between 100 kg steel test mass and rail (L1+L2): 250+205=455 mm  
Steel Mass to floor (Pre Release): 5.24 m  
Steel Mass to floor (Post Release): 4.39 m  
Steel Mass Displacement (H1): 5.24 - 4.39 m = 0.85 m (Allowable  $2L1 + L2 + 1$  m = 1.665 m)  
Railock Mk III Arrester displacement on lifeline (H2): 5 mm  
Energy Absorber deployment: 235 mm  
Comments: Mass held clear of floor  
Result: **Pass**

**Note:** L1 + Fall arrester including lanyard, L2 = 210 mm +/- 5 mm consisting of EN362 type Q connectors actual length 205 mm.



**Figure 3**  
Dmax Test Set-up  
Test mass positioned 455 mm from the system rail.



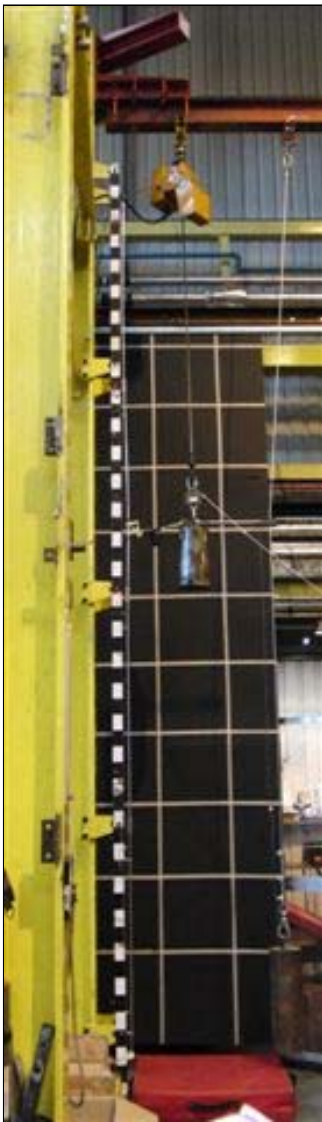
**Figure 4**  
Dmax Test Post-arrest  
Test mass arrested by system within requirements



**Test 3 - Fall Back Dynamic Test 100 kg Test Mass.**  
**TUV NEL Test Mark: MUIV-01 T03**

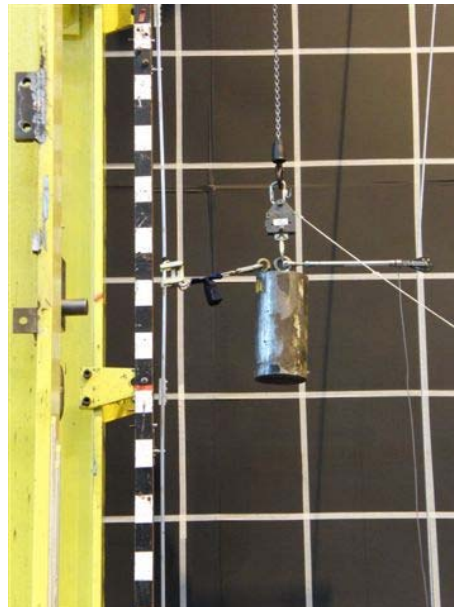
Arrester Ref: Railock Mk III Model No: KC11050234, s/n 24081/012  
Webbing absorber pack Ref No: FTED1RLK/1, s/n 00729115037  
Captive double action snap-hook complete with swivel eye.

Arrester position (L3) (Pre-release): 3.0 m +/- 50 mm below guide cable suspension point.  
Gap between 100 kg steel test mass and rail (L1): 250 mm  
Rigid Quick-link Assembly including load cell: 0.5 m  
Tension (F) applied by moving the guide lanyard suspending 150 kg mass ( $m_2 =$ ): 150 N +/- 20 N  
Steel Mass to floor (Pre Release): 3.67 m  
Steel Mass to floor (Post Release): 3.09 m  
Steel Mass Displacement (H1): 3.67 – 3.09 m = 0.58 m (Allowable 1.0 m)  
Railock Mk III Arrester displacement on lifeline (H2): 5 mm  
Energy Absorber deployment: 210 mm  
Comments: Mass held clear of floor  
Result: **Pass**



**Figure 5**

FB: Fall Back Test Set-up.  
Test mass held away from the rail  
with a perpendicular force of 150 N  
pre-release.



**Figure 6**

FB: Fall Back Test Pre-release.  
Test mass positioned 3.0 m  
below top cable anchorage.



**Figure 7**

FB: Fall Back Test Post-arrest.  
Test mass arrested by system  
within requirements of draft test  
spec.

**Test 4 - Sideways Max Distance Dynamic Test**  
**TUV NEL Test Mark: MUIV-01 T03**

Arrester Ref: Railock Mk III Model No: KC11050234, s/n 23445/047  
Webbing absorber pack Ref No: FTED1RLK/1, s/n 10651331254  
Captive double action snap-hook complete with swivel eye.

Arrester position (Pre-release): Between two top rail mounts  
Gap between 100 kg steel test mass and rail (L1+L2): 250 +205 mm = 455 mm  
Steel Mass to floor (Pre Release): 5.23m  
Steel Mass to floor (Post Release): 4.41 m  
Steel Mass Displacement (H1): 5.23 - 4.41 m = 0.82 m (Allowable 2L1+L2+1.0 m = 1.705 m)  
Railock Mk III Arrester displacement on lifeline (H2): 4 mm  
Energy Absorber deployment: 273 mm  
Comments: Mass held clear of floor  
Result: **Pass**

**Note:** L1 + Fall arrester including lanyard, L2 = 210 mm+/- 5 mm consisting of EN362 type Q connectors actual length 205 mm.



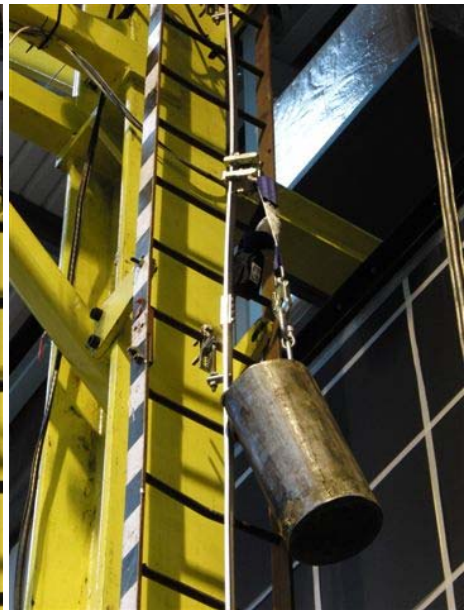
**Figure 8**

SW: Side Ways Dynamic Test Set-up.  
Test mass positioned 455 mm from the system rail.



**Figure 9**

SW: Side Ways Dynamic Test Pre-release.  
Test mass positioned between two rail mounts.



**Figure 10**

SW: Side Ways Dynamic Test Post-arrest.  
Test mass arrested by system within requirements of draft test spec.

\*\*\*End of certificate\*\*\*