



Test Certificate

Office: **Lloyd's Register EMEA - Energy, Birmingham**

Date: **13 May 2016**

This Certificate is issued to **Gantry Railing Limited** to certify that the undersigned Surveyor to Lloyd's Register EMEA did, at their request, attend their **Sudmeadow Works, Gloucester** on 27 April 2016 for the purpose of witnessing the testing of the undernoted Gantry Railing Limited Clip in accordance with the requirements of Gantry Railing Limited Order No. 15148.

Gantry Railing Limited Type 3224 Clip.
M24 Bolt Material BS EN ISO 898-1 Grade 10.9
M24 Nut Material BS EN ISO 898-2 Grade 10
Design Load 300kN

Test Procedure

The above Clip was subjected to lateral testing in accordance with Gantry Railing Limited Test Procedure No. Cliptst Issue 4 & recorded as GTR-111. The procedure is based on BS 5950 Part 1: 2000 – Section 2.1.2.5 and Section 7.

The Clip was bolted down with the cap at the centre position onto a test rig simulating normal fixing conditions with a measured torque of 750 Nm.

Pre Load Test (Design Load)

The Clip was subjected to a pre-load of 300kN for one minute duration as a preliminary bedding down load.

Acceptance Test Load (1.3 x Design Load)

A test load of 390kN was applied in gradual stages.

Strength Test Load (1.6 x Design Load)

The proof load was increased in gradual stages to 464kN until the washer cracked. The desired 1.6 x Design Load of 480kN was not achieved.

Proof / Strength Test Result

The pre-load test & proof test were considered acceptable. The Strength Test was unacceptable

Failure Load

At 462kN the clip washers cracked. Components were still in locked up position & pressure was holding but the test was stopped. Upon disassembly of the components, the clip body showed no signs of damage or deformation. The fixings were in good condition, but the bolts had bent in the direction of the load. The washers cracked at the edge of the clip slot.

Gantry Railing Ltd Equipment Record Card Item No. 150.
Pressure gauge serial No. S8814 (HFGP274 Hydraulic) 0-10000 psi,
calibrated 29/08/2014, Certificate No. PG274.
Certificate issued by Hi-Force Hydraulic Tools (UKAS 022)
Calibration due 28/08/2016 (Ref. E.R.C Item No. 150)
Gantry Railing Ltd Equipment Record Card Item No. 133
Torque Wrench Serial No. 1999/54063-1000 Nm, calibrated
10/07/2015, due 09/07/2016. Certificate No. U154083,
Certificate Issued by Quasartronics Ltd (UKAS 0511)



Birmingham Office
Lloyd's Register EMEA

David Hodges
Surveyor to Lloyd's Register EMEA

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