



enclosures and consoles

MFB Products

Static Load Testing S2005 Racks

- **600 wide;**
- **800 wide reducer**

**Multi-piece top-frame &
base-frame configuration**



Introduction

Due the increased equipment load placed in computer racks, there is a requirement to be able to provide the marketplace with safe ¹static working load limits for common racks.

There is an expectation that our S2005 racks have a minimum safe static working load of 750kg and a desired safe static working load of 1000kg.

The safety margin for safe static work load is deemed to be a minimum of 10%.

This report documents the process and activity of performing a load test of the S2005 rack frame with the following dimensions:

Two heights (39RU & 45RU) and two widths (600/19" & 800/19" reducer) were tested as this typically covers all assembly configurations of the S2005 range.

Construction

All of the tested racks were of the following construction

- 4-piece top frame with a cast corner-bracket in each corner
- 4-piece base frame with a cast corner-bracket in each corner
- All assembly of the frame was with the Hemlock type rivet system
 - Rivets from 2 suppliers were used (Avdel & Fastfix); which were found to be comparable to each other in performance
- The vertical mounting angles and shelving were attached to the assembled frame with cage-nuts and 6mm screws

Date

Date of tests: December 2011 & January 2011

Duration of test: 100 hours (minimum)

Load Limit

Safe Static Load 1000kg

Safety margin: 10% (minimum)

Actual load: 1120kg

Distribution of Load

The total load was evenly distributed across 6 rack mounted shelves up to a height of 1.6m high

Equipment

Digital scales with a capacity of 300kg and a resolution of 0.1kg were used to verify the load weight per shelf. Refer MFB Plant & Equipment number **MFB154**.

¹ In a stable, level and non moving environment

Rack 1 (45RU 600w x 800d)

Height	45 rack units (RU) with 2 standard horizontal stiffeners per side
Overall height	~2145mm
Width	600mm
Depth	800mm
Rivets	Avdel Hemlock

Rack 2 (45RU 800w reducer x 800d)

Height	45 rack units (RU) with 2 standard horizontal stiffeners per side
Overall height	~2145mm
Width	800mm
Depth	800mm
Rivets	Avdel; Hemlock

Rack 3 (39RU 600w x 600d)

Height	39 rack units (RU) with 2 standard horizontal stiffeners per side
Overall height	~1875mm
Width	600mm
Depth	600mm
Rivets	Fastfix; Hemfix

Conclusion

The configuration of the 3 x S2005 19" racks were not negatively affected in operation carrying a static load of more than 1000kg evenly distributed across their structure.

In a stable, level and non moving environment, S2005 racks of these configurations are expected to be able to cope with this load for the life of the product.

Photos



S2005 rack; 45RU x 600w x 800d



S2005 rack; 45RU 800w reducer x 800d