



AUSTRALIAN DESIGN AWARD
19" Racks
Licence No. 84394



enclosures and consoles

MFB Products
Static Load Testing
S2005 Rack
(600 wide x 800 deep)



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:

Dimensions

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

Date

Date of test:	4 th June 2010
Duration of test:	60 hours (minimum)

Load Limit

Safe Static Load	1000kg
Safety margin:	10% (minimum)
Actual load:	1115kg

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**.

Conclusion

The configuration of this S2005 19" rack was not negatively affected in its operation carrying a static load of more than 1000kg evenly distributed across its structure.

In a stable non moving environment, a rack of this configuration is expected to be able to cope with this load for the life of the product.

¹ In a stable non moving environment

Photos

Preloaded

Configuration of rack and fixed 19" shelving, prior to loading of weight.

Fully laden

Photos showing static load after 60 hours.

Load of 1115kg distributed evenly across 6 fixed 19" rackmount shelves

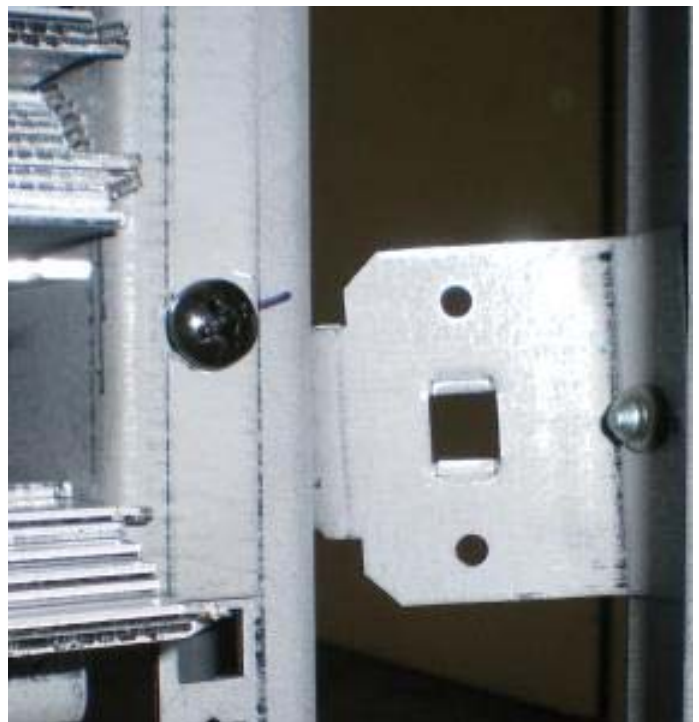
Note: The rack columns were still parallel after the load was applied.



Base frame

Photos of static load stress on base frame & horizontal stiffeners after 60 hours.

There was no evidence of any negative impact on functionality of rack.



Top frame

Photos of static load stress; top frame & vertical mounting angles after 60 hours.

There was no evidence of any negative impact on functionality of rack.

