



21-11775761-2

WITNESSING OF IMPACT LOAD TEST

On behalf of

Eye-Catcher Innovations

8th of September 2021



BUREAU
VERITAS

Eye-Catcher Innovations
Unit 1, 83 Goodwood Road
Goodwood SA 5034

Move Forward with Confidence

Bureau Veritas Asset Integrity and Reliability Services Pty Ltd
ABN 86 000 928 816
22A Taminga Street
Regency Park SA 5010 Australia

ATTENTION:

Mr. Michael Barkovic

CLIENT REFERENCE:

Request

SAMPLE IDENTIFICATION:

402-121 yellow - Protect-it 3M

WORK REQUESTED:

3rd party witness of impact testing of the Protect-it plastic column guards whilst attached to a range of rack profiles

WITNESSING OFFICER(s):

Somayeh G. Fard, Materials Engineer,
Bureau Veritas

TESTED BY:

Eye-Catcher Innovations

1. INTRODUCTION

Bureau Veritas witnessed impact testing of the **Protect-it 3M (402-121 yellow)** whilst attached to a range of rack profiles. Testing was carried out at the premises of Eye Catcher Innovations on Wednesday the 4th of August 2021 and was witnessed by a Bureau Veritas Materials Engineer 'Somaye G. Fard'.

2. RESULTS – Table 1

Protect-it product	Rack Profile type	Profile Width	Steel Thickness	Result
Protect-it 3M	Schaefer Interlock 600 Profile	88mm (3.46")	2.0mm (0.079")	Front Impact - PASS

3. TEST STANDARD

Impact testing was undertaken in accordance with the following racking standards.

Europe - EN 15512-2009, EN 15635-2008, FEM 10.2.10

Australia -AS4084-2012

UK - SEMA

All of the above standards use the following test procedure

ACCIDENTAL IMPACT LOADS

"The minimum requirements for the protection of corner uprights shall be as follows:

(a) An upright protector with a height of not less than 400 mm (15.75 inches) shall be positioned at the end upright of each run of racking between cross-aisles.

(b) An upright protector shall be positioned at all those uprights positioned at aisle and gangway intersections.

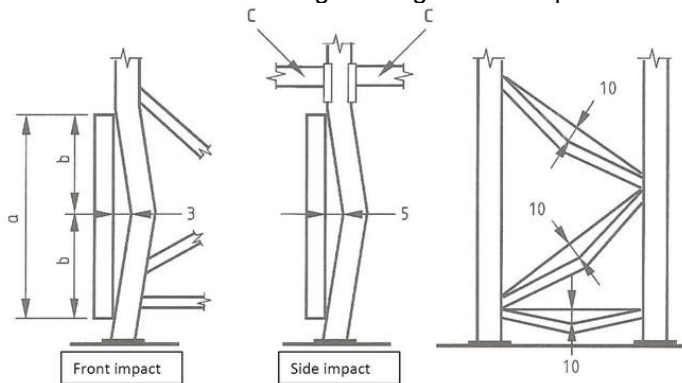
(c) The upright protector shall be designed for an energy absorption of not less than 400 Nm (3540 pound-force-inches) in any direction at any height between 0.1 m and 0.4 m.

(d) The upright protector shall be positioned in such a way that, after its deformation by absorbing an impact, the upright will not be damaged.

Uprights other than corner uprights may be protected in a direction normal to the aisle"

4. METHOD FOR MEASURING DAMAGE

The method for determining “damage” is also specified in all of the aforementioned standards.



- A 1 metre long straight edge was placed against the corner edges of the impacted face to measure deflection.
- Maximum allowable front deflection at any time was within 3mm (0.118 inches)
- Maximum allowable side deflection at any time was within 5mm (0.197inches)

5. RACK FRAME DETAIL

Testing was carried out using frame assemblies of approximately 1.2 metres(47.25”) in length using standard components and profiles, including cross braces, diagonal cross braces, base plates, bolts, nuts and spacers. To facilitate testing the base plates were used at both ends to secure the frame safely.

6. TEST APPARATUS and PROCEDURE

The test jig consisted of a vertical frame and an impact weight which has an impact footprint of 300mm (11.8”) long by 200mm (7.9”) wide and weighs 40kg (88.185 pounds)

The weight was attached to a pulley system to lift the weight.

Three Protect-it 3M rack guards were installed on each rack assembly delivering 400mm (15.75”) of protection to the rack assemblies.

The weight was then raised 1.02 metres (40.16 inches) above the face of the profile and released to impact the target zone. An impact energy of 400Nm (3540 pound-force-inches) was applied to the to the rack assembly between 100mm (3.94”) and 400mm (15.75”) above the base plate.

The column assembly was then removed from the jig and inspected for damage the procedure in section 4 (see table 1 on page 3 of 4 for the test results)

Reviewed by:



Paul Hosking
Laboratory Manager
Bureau Veritas Materials Testing

On Behalf Of: Eye Catcher Innovations
Report No. 21-11775761-2
Date: 8 September 2021



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