



21-11775761-1

## **WITNESSING OF IMPACT LOAD TEST**

On behalf of

**Eye-Catcher Innovations**

8<sup>th</sup> 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:**

600-100c yellow - Protect-it 3XL

**WORK REQUESTED:**

3<sup>rd</sup> 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 3XL (600-100c yellow)** whilst attached to a range of rack profiles. Testing was carried out at the premises of Eye Catcher Innovations on Wednesday the 4<sup>th</sup> 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 3XL	Dexion Mk6 Speedlock 90M	90mm (3.54")	1.9mm (0.075")	Front Impact - <b>PASS</b>
	Dexion Mk6 Speedlock 90H	90mm (3.54")	1.6mm (0.063")	Side Impact - <b>PASS</b>

## 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.*

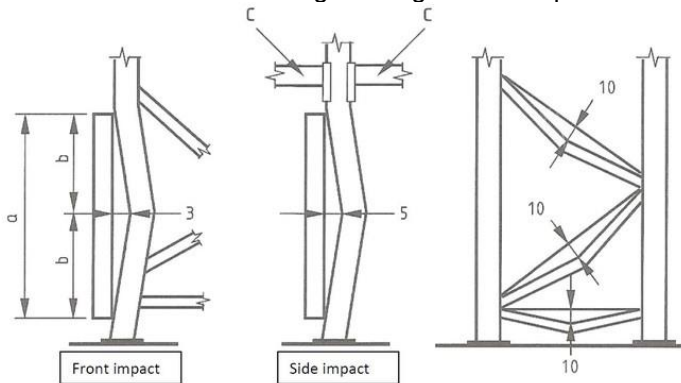
*(c) The upright protector shall be designed for an energy absorption of not less than 400 Nm (3540 pound-force-inches) in any direction at any height between 0.1 m and 0.4 m.*

*(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.

One Protect-it 3XL rack guard was installed on each rack assembly delivering 500mm (19.69”) 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. 21-11775761-1  
Date: 8 September 2021

---



Disclaimer: This report has been prepared by Bureau Veritas Asset Integrity and Reliability Services Pty Ltd (BVAIRS) for use by, and is confidential to the customer nominated above (Client). BVAIRS on its own behalf and that of any person acting on its behalf disclaims any warranty existing insofar as such is able to be disclaimed at law and does not make any warranty, either express or implied, with respect to the results of use of any information in this report by the Client or any third party. Unless otherwise agreed in a written contract by BVAIRS, neither BVAIRS nor any person acting on its behalf assumes or will accept any liability whatsoever with respect to the use by the Client or any third party of any information set out in this report. Unless otherwise agreed in a written contract by BVAIRS, any recipient of this report by their receipt and use or reliance upon (in any way whatsoever) of this report releases BVAIRS and its affiliates from any liability for direct, indirect, consequential and special loss, damage, cost or expense suffered by any party whether arising in contract, warranty (express or implied), indemnity, tort or otherwise, and irrespective of fault, negligence and strict liability insofar as such liability can be disclaimed at law. Copyright in this report is owned by BVAIRS, and neither the whole nor any part of this report or the information contained in it may be published or disclosed to third parties without BVAIRS and the Client's prior written approval. Reports are not approved by BVAIRS unless signed by an authorised representative of BVAIRS and must not be modified in any way without BVAIRS's written consent. All information pertaining to the test item was supplied by the Client. Samples will be stored for thirty days.