

# SAFETY MANUAL AND REPORTING PROCEDURES

V1:4 | March 2016



■ **IMPACT-BULL®**

Air Cushion System

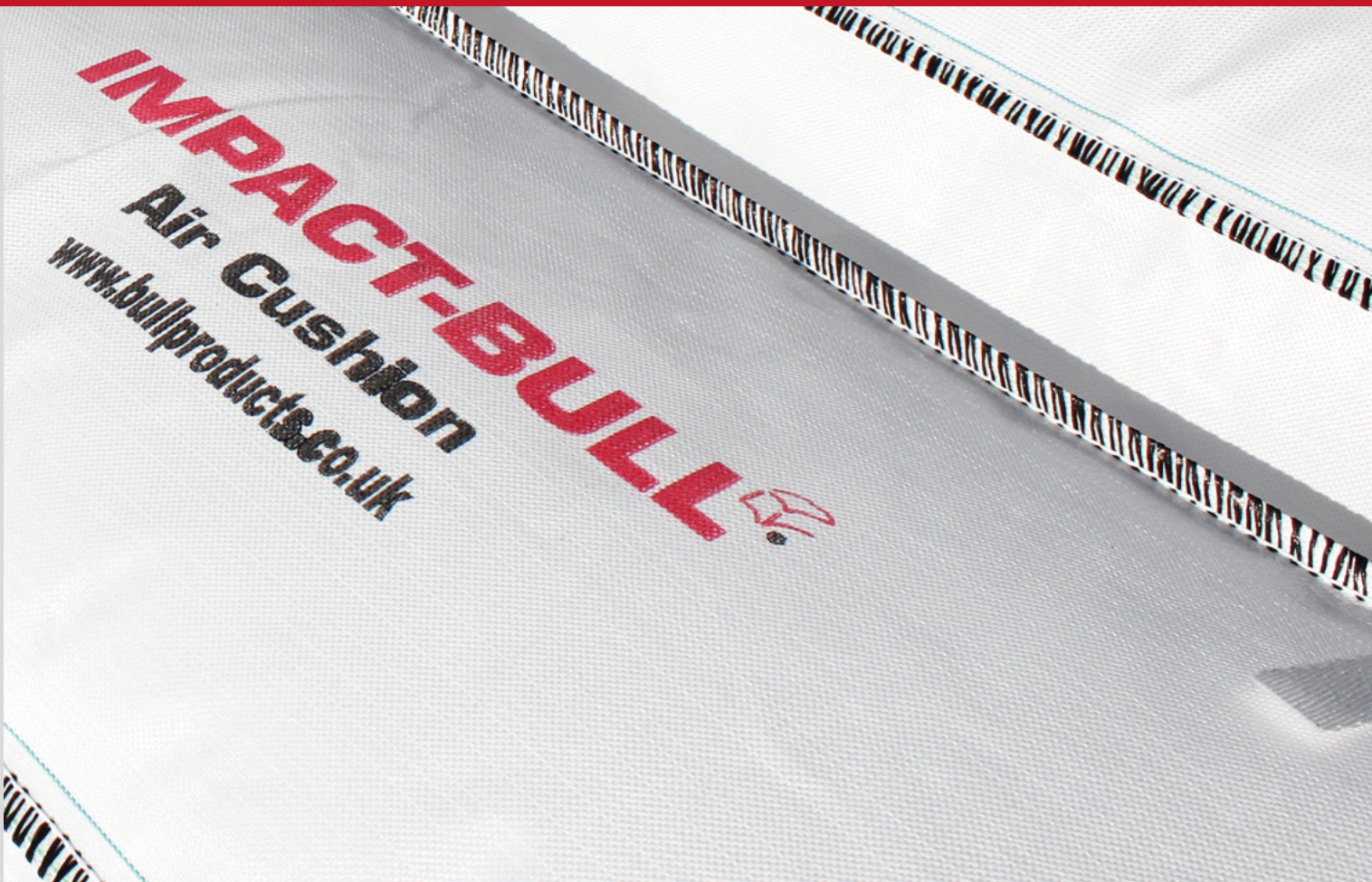


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 **IMPACT-BULL®**  
Air Cushion System



# IMPACT-BULL FALL ARREST AIR CUSHION SYSTEM

The Impact-Bull Fall Arrest Air Cushion System is designed for use inside a building during construction where the bags will be enclosed by walls or partitions. This system is installed to reduce the potential risk of operatives working at height, of no more than 2.5m from the top of the air cushion, and to provide a cushioned landing in the event of a fall. If the fall height exceeds 2.5m it is acceptable practice to add a further layer of air cushions to reduce the excess height.

This safety manual is to help the user look after their fall arrest system and to provide maximum safety.

## SAFETY CHECKS

**WARNING** – The manufacturer's instructions shall be followed in the installation of this product and shall be undertaken by trained and competent personnel only.

Each Impact-Bull Air Cushion is to be assessed thoroughly before use, as follows:

1. Check year of manufacture and date of last inspection for validity in accordance with manufacturer's instructions.
2. Examine the outer casing for any tears or visible signs of damage.
3. Inspect the fastening buckles for damage. These must be fully operational.
4. Remove any build-up of mortar or mud with a stiff hand brush.
5. Inspect the height and absorbent filling of the each bag. If the bag is crushed, remove from service.

## INSTALLATION

ONLY COMPETENT PERSONNEL SHOULD CARRY OUT THE INSTALLATION.

**WARNING** – Top clip fall arrest bags are designed for constrained use only where the fall arrest system extends to boundary walls on all sides.

- Thoroughly clear the floor space of all debris and rubbish.
- Make sure any stairwells or recesses are covered.
- Working from the furthest corner from the plot entrance, install the air cushions adjacent to one another and arrange them in order to provide maximum coverage.
- Ensure each air cushion is clipped together using the fastening buckles and adjust the webbing straps to reduce any gaps between the cushions.
- The bags must be tightly packed using the following procedure; the installer must perform a push and fill test by pushing the bags up as tight as is reasonably practical and adding additional cushions to form a tightly packed layer of cushions. This will ensure the system has a minimum finished height of 600mm. The fall distance from the top of the bag is tested to 2.5 meters giving a full work height from floor level of 3.1 meters.
- Where a leading edge is directly above a doorway opening, window opening or open scaffolding the opening should be adequately boarded to provide a constrained area for the fall arrest bags to be positioned within.

**WARNING** – Keep away from flame and other sources of ignition.

This product has been tested to PAS59: 2014 and is a trademark of Bull Products Ltd, Hereford.

## ARTICULATED TRAILER PROTECTION

- Only air cushions with buckles at the top and bottom of the bag must be used for trailer protection.
- Ensure all buckles are fastened top and bottom.
- Follow installation steps above until the trailer is completely surrounded with cushions.

## IN THE EVENT OF A FALL

In the event of a person falling onto the fall arrest bags, or any other significant impact, the air cushion must be replaced by a competent person and the damaged bags inspected and repaired accordingly. The manufacturer should be notified of any falls or significant impacts to the air cushion.

## INSPECTION

Fall arrest bags must be inspected before each use and a thorough inspection must be carried out at regular intervals, but not exceeding twelve months, by an approved company.

Any damaged air cushions identified during inspection must be marked with a red cross and replaced immediately. These should be disposed of to prevent any unintentional reuse.

## GENERAL GUIDANCE

This air cushion system is designed to mitigate the worst effects of a fall, however, we do not accept liability for injury or death.

By using this product the user takes full responsibility for the use and maintenance of the system.

**WARNING** – The system is tested to fall height of 2.5m from the top of the bag to the work height, giving a total height of 3.1m from floor to work height.

Safe storage procedures should be adhered to. Fall arrest bags should be stored where possible internally or in stillages/protective cages. Where possible keep out of direct sunlight and away from flammable substances.



## BULL PRODUCTS ANNUAL INSPECTION

Our bag inspectors will only carry out inspections on bags that are easily accessible and are readily available for inspection. Bull Products provide a risk assessment and method statement for all works carried out in this regard.

**To book an inspection call 01432 371170.**

1. Check year of manufacture and date of last inspection.
2. Examine the outer casing for any rips, tears or damage. Bags with holes greater than 2 inches in length/diameter shall be condemned.
3. Inspect the fastening buckles for damage. These must be fully operational. Replace missing buckles and sliders.
4. Remove any build-up of mortar or mud with a stiff hand brush.
5. Inspection of air cushions on site – by the same method as filling the cushion in the manufacturing process the volume of fill shall be the test method. The air pocket volume must completely fill the outer cushion.
6. Bags that have passed all of the above tests will be spray marked with a coloured dot (except red) on one corner of the bag.
7. Failed bags will be marked with a red 'X', and these must be removed from service immediately.
8. Bull Products provide a chargeable collection service for condemned bags.
9. Upon completion of inspection a full report/certificate is submitted to the site representative which is signed by both parties.

The inspector can only determine “fit for purpose” of bag at the time of inspection. It is the responsibility of the user/contractor to inspect bags prior to each use.





- 1** Clear area of all rubble, materials and sharp objects etc.



- 2** Make sure all low windows and doorways are boarded up and stairwells are covered.

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- 5** Perform a push and fill test and if the bags spread install more bags to reduce any gaps. Push bags up to make room for additional bags. This ensures extra protection.



- 6** If potential fall height is more than 2.5 metres from top of bag to work height, install another layer of cushions to reduce the 2.5 metres fall height.



**3** Bring air cushions into the room and working from the furthest corner lay the air cushions out.

**4** Make sure all clips are fastened top and, if applicable, bottom.

## METHOD STATEMENT



**7** Once installation is complete it should be thoroughly checked by site safety officer or representative and signed-off accordingly.



**8** Air cushions require a visual inspection before use and any work at height should not commence until this is completed. Damaged units need to be notified to the site safety officer and replaced immediately.



Summary of test results

**PAS 59:2014 Drop Test**

**Result of tests carried out according to PAS 59:2014**

<b>Bag Tested:</b> Impact-Bull Air Cushion Single Stack connected with plastic buckles and slide bars.	
<b>Dimensions:</b> nominal dimensions 600mm wide, 600mm deep and 1920mm long (each bag)	
<b>Configuration:</b> A single stack of six standard air cushion bags connected with plastic buckles and slide bars. Overall depth 600mm.	
<b>Client:</b> Bull Products Ltd	
<b>Date of test:</b> 16 <sup>th</sup> March 2016	<b>Report Number:</b> P103628-1000
<b>Report Prepared by:</b> Dr P Blackmore – Associate Director, Building Technology Group	
<b>Signed:</b> 	<b>Date:</b> 29 <sup>th</sup> March 2016
<b>Approved on behalf of BRE by :</b> Dr J Bregulla – Director, Building Technology Group	
<b>Signed:</b> 	<b>Date:</b> 29 <sup>th</sup> March 2016
<b>Results</b>	
<b>Drop test 1 - Drop height 2.5m:</b> Maximum deceleration – 12.29g	
<b>Drop test 2 - Drop height 2.5m:</b> Maximum deceleration – 12.13g	
<b>Drop test 3 - Drop height 2.5m:</b> Maximum deceleration – 12.95g	
<b>Overall Result: PASS at drop height of 2.5m (3.1m above ground level)</b>	



4 Results

The maximum deceleration measured for each drop is given in Table 1. Annex A shows the time-deceleration curves measured during the testing. Figure 3 shows the array of bags after an impact.

Table 1 Summary of test results for 600mm standard air cushion bags top connected

Test No.	Drop Height (m)	Test Mass (kg)	Temperature (°C)	Humidity (%RH)	Peak Deceleration (g)
1	2.5	101Kg	17.4	38.5	12.29
2	2.5	101Kg	17.4	38.5	12.13
3	2.5	101Kg	17.4	38.5	12.95



Figure 3 View of the bags after an impact





# IMPACT-BULL FALL ARREST SYSTEM INSPECTION SYSTEM LOG

**WARNING** – The manufacturer’s instructions shall be followed in the installation of this product and shall be undertaken by trained, competent personnel only.

Fall Arrest bags should be inspected and declared fit for use before being installed in accordance with the manufacturers requirements.

DATE OF INSTALL	BUCKLES FASTENED	BAGS INSPECTED	No. BAGS INSTALLED	INSPECTORS NOTES / RECOMMENDATIONS



If you have any enquiries or want to book in an inspection please contact:

Bull Products Ltd  
Beacon House, 4 Beacon Road  
Rotherwas Industrial Estate  
Hereford, HR2 6JF

01432 371170  
service@bullproducts.co.uk  
www.bullproducts.co.uk

IB01/IB02 Constrained Use

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# IMPACT-BULL FALL ARREST SYSTEM

## RECORD OF DAMAGED BAGS AND FALLS

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DATE	TYPE OF EVENT	DATE OF MANUFACTURE	OUTCOME / INSPECTION NOTES



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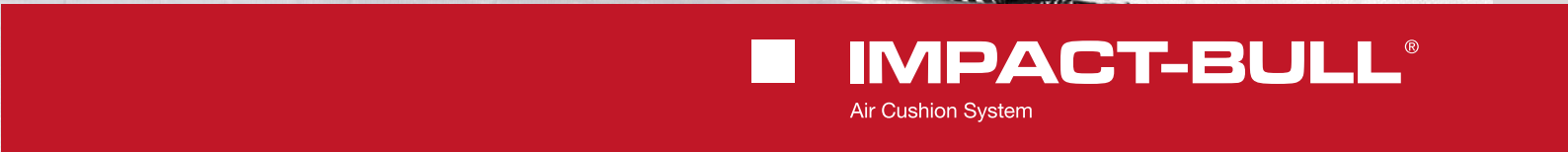
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**For more information**

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