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**LAUNCHING ITS INNOVATIVE  
ANTI-IMPALEMENT REACTOR CAP**

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**SPECIALIST CONSTRUCTION  
ACCESSORY SUPPLIERS**

## RFA-TECH CONTINUES TO OFFER NEW AND INNOVATIVE PRODUCTS TO ITS CUSTOMERS IN ORDER TO ENHANCE ITS POSITION IN THE MARKETPLACE, WHILE ALSO HELPING TO DRIVE IMPROVEMENTS IN CONSTRUCTION METHODS WITH A PARTICULAR EMPHASIS ON HEALTH & SAFETY

This has led to the introduction of the ReACTer Anti-impalement Cap.

It began when the Company received an enquiry for a product offering anti-impalement protection on starter bars on construction sites.

RFA-Tech initiated a detailed investigation on the issue of impalement protection, its related injuries and fatalities, before starting discussions with a local manufacturer of rebar safety caps to assess the possibility of finding a solution to such an issue.

Research allowed RFA-Tech to make an initial assessment of the issue of anti-impalement, which found that there was no UK standard for a safety cap, while there was development in the US, where test guidelines had been developed to achieve anti-impalement protection from falls of up to 2.3 metres.

There was conclusive data that demonstrated high levels of injuries and fatalities arising from falls on construction sites.

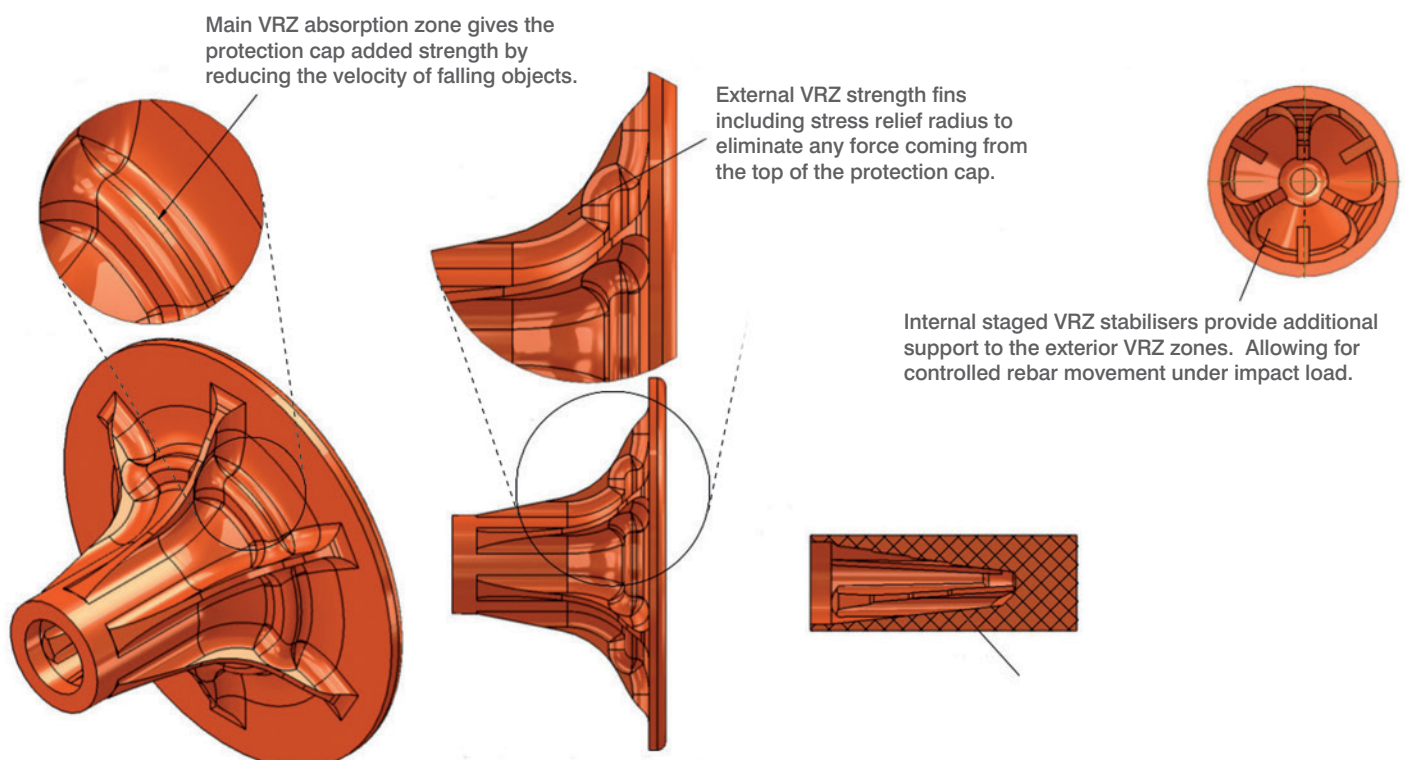
The HSE statistics recorded for 2012/13 showed there were 39 fatalities during the period, even though this was down on the average from the past five years of 53. Of these deaths, more than half were the result of falls, including impalement.

In addition, there were almost 2,000 major injuries on construction sites during the same time - again, down compared to the average over the five previous years. Of these accidents, falls accounted for 28% of that number.

Because of the highest volumes of accidents coming from falls, RFA-Tech decided that the use of anti-impalement on starter bars on construction sites warranted further investigation.

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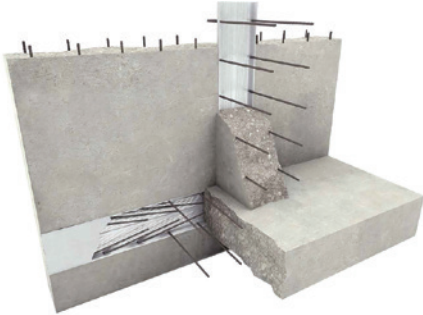
### THE NEW ANTI-IMPALEMENT - REACTER CAP



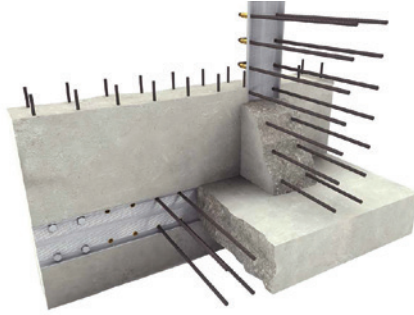
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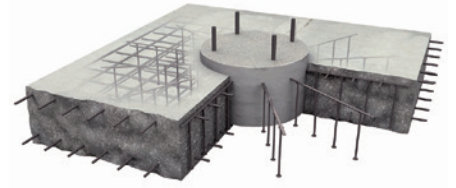
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Guidelines to anti-impalement do not exist in the UK so it was decided that any solution should be based on the guidelines in the US, which were developed as a result of the increase in the number of impalement accidents resulting in serious injury or death in the US.

No anti-impalement safety caps are manufactured in the UK, and many deem them as expensive and limited in performance.

As a result, RFA-Tech has had several meetings with its rebar safety cap manufacturer, who subsequently invested a large amount of its own resources to design, produce and test an anti-impalement cap to provide cushioned restraint as well as an impalement prevention performance that can perform better than products supplied to the US market.

This has seen the creation of the ReACTer Cap.

It works in two ways. Firstly, the inner flutes reduce the speed the cap is pushed down onto the reinforcement. Secondly, the ribs and ridge underneath the head dissipate the impact force by flexing and directing the force over the sides of the cap.

These two features combine to give what is known as the Velocity Reduction Zone, (VRZ).

The VRZ, in conjunction with the careful selection of a thermoplastic polymer, prevents the reinforcement from breaching the cap and therefore prevents impalement.

Below the head of the visually unique cap, there is a set of ribs to support the head and provide the VRZ.

The ribs give the cap added strength by reducing velocity of the falling objects, while external fins eliminate any force coming from the top of the protection cap.

Inside the cap, internal stabilisers provide additional support to the external VRZ zones and allow for controlled rebar movement under impact load.

Caps are designed for use on all standard sizes of rebar.

The CAL/OSHA testing parameters require a test weight sandbag of 113kg to be dropped from a height of just over three metres onto a rebar cap fitted to a 12mm diameter rebar. The cap will bear the full force of the weight and not allow any penetration of the face of the cap by the rebar. This test allows the cap to be approved for working at heights of up to 3.05 metres.

All designs were based upon exceeding these test parameters because this is the prediction of the direction in which the market is going, and its added safety will prevent serious injury from impalement.

Therefore, it was decided to test the cap with a sandbag of 121kg but from a height of five metres. The caps passed these tests using the increased parameters, and were witnessed by an accredited UKAS testing body.

## CAL/OSHA DROP TEST

- Drop weight 113kg.
- Drop height 3.05m above top of cap.
- 12mm rebar held vertical in concrete.
- 150mm protruding.
- All as per OSHA test parameters.



## RFA-TECH DROP TEST

- Drop weight 121kg.
- Drop height 5m above top of cap.
- 12mm rebar held vertical in concrete.
- 150mm protruding.
- All as per OSHA test parameters.



- The results of all tests were similar.
- The cap absorbed all of the impact without damage.
- Rebar bent.

In order to provide a more flexible and cost effective anti-impalement solution for customers, RFA-Tech has also designed a ReACTer Cap Rail System, which has been produced and tested to the parameters outlined above.

The rail system consists of a purpose-designed rail manufactured from thermoplastic polymer which, along with four caps, will provide reinforcement cover of up to 2.25 metres.

It also passed the same tests carried out on the individual caps.

A great deal of research, investigation, planning, design, product development and testing has gone into the anti-impalement cap, and the innovative solution has now been launched, which RFA-Tech hopes will revolutionise the use of rebar caps on construction sites in the UK.

It should be reiterated that the commitment to reducing construction site accidents in the UK is high, and has resulted in a drop in fatalities and injuries over the past five years.

Despite this though, the statistics mentioned earlier show that the recorded fatalities and injuries caused from falls is six times as many as those arising from being hit by moving vehicles.

The introduction of RFA-Tech's fully tested anti-impalement cap will lead the way in changing contractors' attitudes to the

ongoing risk of death or serious injury from impalement on rebar starter bars.

RFA-Tech's aim is to ensure that the relatively small cost of providing the solution to workers will result in major contractors demanding fully tested anti-impalement products to be used on their sites.

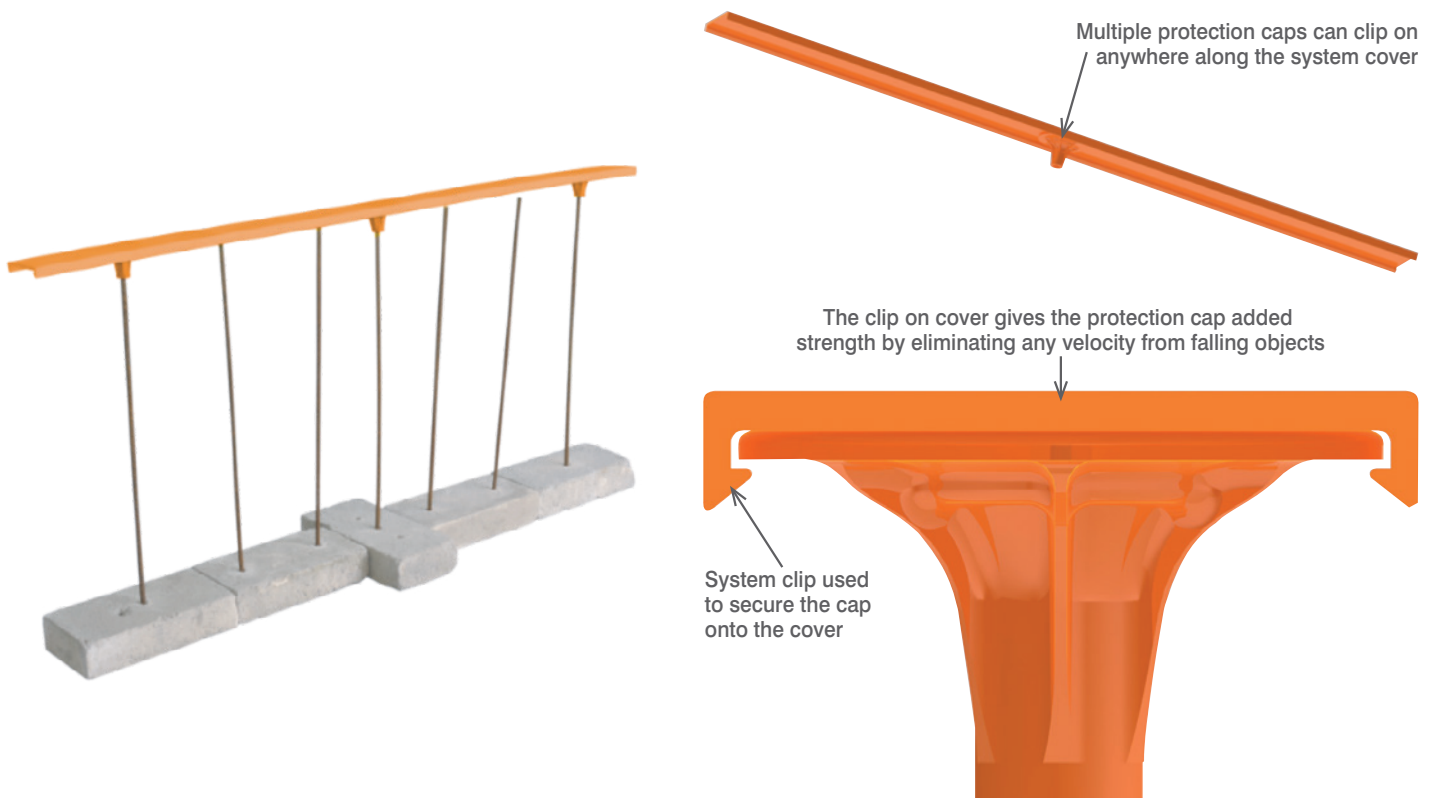
Following its launch in August 2014, RFA-Tech has entered the ReACTer Cap for the 2014 Construction Health & safety Initiative Award which, it is hoped will provide extra impetus towards achieving this aim.

RFA-Tech is proud of its work on this, as well as the close partnership with local rebar safety cap manufacturer ACT (Europe) Ltd, which has seen this solution become a reality.

In order to make contractors aware of the ReACTer Cap, RFA-Tech will be marketing the solution so that it raises awareness of anti-impalement in the UK.

Going forward, RFA-Tech will continue to work closely with ACT (Europe) Ltd to develop the product further in order to meet the needs of the construction industry and its workers.

## REACTER CAP RAIL SYSTEM





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