



# CRASH DEMONSTRATION DAY

## REVIEW

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This event, organised by UK Roads Ltd, was held in association with **MIRA, Mott MacDonald and Traffex/Road Expo**. The exhibition of related products and services on display inside the marquee included stands from: MIRA; FSP; 3A Composites/ASD Metal Services; JPCS; Tofco; FLI Structures; Highway Care; Gloucester Composites; Traffex/Road Expo; Brett Landscaping; NAL and SAPA. As well as the crash demonstrations, other live demonstrations and exhibits took place outside the marquee including barrier products supplied by Highway Care and Screwpile demonstrations conducted by FLI Structures. Video footage and still photographs of the day's events will soon be available to view on the gallery pages of [www.passivesafetyuk.com](http://www.passivesafetyuk.com)

### **CRASH DEMONSTRATIONS - RESULTS**

#### **Demo 1:**

A Ford Fiesta was crashed at 35kph sideways into a traditional unforgiving steel lighting column. The column was mounted in a Retention Socket supplied and installed by NAL. (No power supply).

Neither the column nor the socket was affected by the impact. The side of the vehicle suffered appreciable damage and there was significant intrusion into the driver area. According to Police Officers present, the damage inflicted was likely to have resulted in serious head, arm and leg injuries for the driver. The column was subsequently removed with ease from the NAL Retention socket which was then available to be re-used to support a replacement column.

#### **Demo 2:**

A Suzuki Swift was crashed at 100kph into two 140mm diameter passively safe composite posts simultaneously. The posts were provided by Frangible Safety Posts Ltd. The demonstration was to highlight that despite two of these products being struck at the same time they do not significantly reduce the speed of the vehicle, and therefore do not subject the occupants to unacceptable deceleration forces. In tests, a single 140mm FSP post results in a 100:NE:3 classification, whilst two posts struck simultaneously results in a 100:NE:2 classification, which is a very impressive performance. The posts were mounted in Orion sockets provided by Poletech (No power supply) and supported a lighter weight composite sign plate provided by 3A Composites and ASD Metal Services.

The FSP posts performed perfectly, yielding upon impact during the impact. The Orion sockets were unaffected by the impact which were then available to be re-used for replacement posts. The lightweight sign plate fell where it was struck, which is to be expected, as no energy was transferred to the plate by the posts during the impact.

During the demonstration (and to the amusement of the audience) the metal release mechanism that detaches the cable pulling the vehicle immediately before impact, struck

and severed a brake pipe upon release, rendering the brakes inoperable. As a result, instead of the car then being brought to a stop as would normally be the case, the vehicle travelled some distance before coming to rest at the edge of the test area, where it collided with safety barrier and a parked vehicle. The MIRA team were able to quickly confirm that this unfortunate turn of events (the parked vehicle was MIRA owned) was as a result of their test equipment and not in any way associated with the product being demonstrated.

**Demo 3:**

A Ford Fiesta was crashed at 35kph sideways into a passively safe 15m lighting column provided by SAPA. The column was mounted in a Retention Socket supplied and installed by NAL. (No power supply).

Despite the low speed and orientation of the impact, the product still performed perfectly, shearing away as it is designed to do, causing very little damage or intrusion to the side of the car (and significantly less than that caused by the traditional column in Demo 1). It is very unlikely that any serious injury would have been sustained by the driver as a result. The remaining portion of the column was subsequently removed with ease from the NAL Retention socket, which was then available to be re-used for a replacement column. This was an impressive display of how safe the SAPA range of columns are, and SAPA are to be thanked for having the confidence in their product to allow us to conduct this type of demonstration and they should be congratulated on its subsequent performance.

**Demo 4:**

A Vauxhall Vectra was crashed at 100kph into a TAU Crash Cushion provided by Highway Care. The purpose of the demonstration was to show how the crash cushion protects the occupants of the vehicle from serious injury as a result of the impact.

The demonstration was a perfect example of how crash cushions can prevent serious injury and save lives. The car was brought to a controlled halt by the TAU Cushion without it experiencing any rotational or overturning forces.

Our thanks go to MIRA for hosting this event, to Highway Care for providing the complimentary hot food and to both Highway Care and FLI Structures for the complimentary cold drinks. We would also like to thank all the remaining exhibitors for their input and participation.

