

Event: National Passive Safety Crash Demonstration Day
Organizer: Andrew Pledge, PSUK
Post installed by: Mason Street Furniture (MSF) Post
supplied by: Frangible Safety Posts (FSP)
Product: CELsafe Passive Safety System

The Passive Safety UK Crash Demonstration Day is organised to raise awareness of passive safe products and how these can be deployed to provide better outcomes in the event of a vehicle colliding with highway infrastructure such as traffic information signs.

We were invited by Andrew Pledge, PSUK, to demonstrate our **CELSafe Passive Safe system**. Our Technical Manager, Ivan Hawtin, designed a test system which was situated track side to monitor the event and capture the results.

Our CELsafe system is available in four configurations:

Configuration 1:

- Pillar based disconnection with ground chamber snatch plug and column impact sensor

Configuration 2:

- Pillar based disconnection with column mounted impact sensor

Configuration 3:

- Ground chamber-based disconnection with impact sensor and snatch plug

Configuration 4:

- Ground chamber-based disconnection with snatch plug

The demonstration was to record the operation and disconnection time of the system on a live crash test to demonstrate compliance with BSEN 12767:2019.

Equipment Set-up:

Retention socket fitted with FSP post and live traffic signals head 230V ac connecting back to a feeder pillar on a passive safe disconnection circuit.

The CEL V5 passive safe inertia switch was fitted to the post and wired back to the feeder pillar.

Camera 1 – recording the crash test and car impact on the post.

Camera 2 – recording the digital storage oscilloscope point of impact and disconnect time.

Camera 3 – recording the electrical disconnection trip and attached 2P MCB.



On the next page, you will see before and after images of the system operation.

The Results:

When the car collided with the post, the CEL V5 electronic passive safety device fully disconnected all electrical supplies to the post within 80ms from the point of impact.

On the oscilloscope:

Time base was set to 20ms per division.

CH1 (yellow trace) shows the mains voltage 230V ac (supply to the traffic signals head).

CH2 (purple trace) shows the inertia switch triggered at the point of impact (switch going open circuit).

Charles Endirect

Ingenuity at work

CEL V5 configuration 2 system operated successfully and well within the disconnect time required by BSEN 12767:2019. Our Technical Manager captured the event on camera and a video of the full demonstration is available to view on our website. If you would like to know more about our Passive Safe System capability, please contact us, our Technical Team are always happy to offer help and advice.

