ASSOCIATION FOR ROAD TRAFFIC SAFETY AND MANAGEMENT

GUIDANCE DOCUMENT

WG1

MAY 2026

PROVIDING GUIDANCE TO MANUFACTURERS AND USER COMMUNITIES

GUIDANCE ON PRODUCT ADAPTATION AND TESTING REQUIREMENTS FOR PASSIVELY SAFE PRODUCTS

Introduction

Passively safe traffic products are designed to reduce the severity of injury to road users in the event of an impact. They are designed to deform or break on impact and formally tested and certified to show performance which minimises damage to vehicles and their occupants.

Many products are manufactured in families. When a product family is tested there are parameters that must apply within the defined performance classifications – e.g. the largest and the smallest are generally defined and most characteristics are expected to be the same. These requirements are identified in BS EN 12767.

When a product has been adapted during its life cycle - either a change in the manufacture or after installation, any such adaptation may change the way a product performs in situ. This guidance provides information on what to consider when any such change is to be made.

What sort of change requires new testing?

Manufacture

A Passively Safe product will need new testing for compliance with BS EN 12767, if something has fundamentally changed from the product that was originally tested and certified such that the characteristic may perform differently.

Examples of parameters that could change the performance characteristics and classification of a product and require a retest include:

- If a tested product changes in section size, outside that of the permissible manufacturing tolerances, with all other material properties and manufacturing processes remaining the same.
- If the tested product changes in wall thickness outside that of the permissible manufacturing tolerances, with all other material properties and manufacturing processes remaining the same.
- If the material properties of the product or manufacturing process used to produce the product changes in any way. For example, change in material composition or heat treatment.
- A product designed to be planted cannot be used as a surface mounted design without new test; similarly, a baseplate design cannot be used as a planted design
- Any modifications to bolts/fixings used in the breakaway mechanism,
- A baseplate that is different by form, material or design from the baseplate used in testing.
- If the product is adapted from a mains cable to a solar panel and include a battery within the product (e.g. increasing weight or affecting performance).
- For non-harmful structures, changes that impact on the breakaway mechanism may require new testing.

Virtual Testing

Whilst virtual testing can be an important part of a products development, it does not replace the need or requirement to physically test the product and must only be used when the comparison can be made against the original physically tested product.

User adaptations affecting testing

It is important to note that a product that is affixed to a "tested support" is not in itself a passively safe product. It has merely been used as the "load" for the testing of the support structure. Generally, poles which are designed for use with traffic signals, are tested with their heaviest traffic signal load; columns designed for use with lighting are tested with their heaviest lighting load; posts for traffic signs similarly.

Where there is a change to the asset load on an installation, the load intended should be confirmed as within the tested parameters of the original test for the support post/column (e.g. using a post installed for a fixed plate sign and replacing this with a VMS; or additional assets or furniture). Any change or addition to the size, weight and mounting height of the “load” may impact on the performance and classification of the original tested product.

April 2026

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