

Description

The Frangible Safety Post is a novel glass and carbon fibre reinforced, composite, cylindrical post that is intended for the installation of vertical traffic signs and other devices installed adjacent to the roadway. This post is not recommended for uses where an access panel is cut into it.

The product is strong and stiff and is of uniform diameter and wall thickness. The post has the following dimensions and physical characteristics:

Physical Properties

Outside diameter: 139.7mm
 Wall thickness: 5.2 mm
 Unit weight: 4.2 kg / metre
 Standard colour: Mouse grey RAL 7005

Note: A range of colour options and anti fly poster coatings are available on request.



Typical installation of an FSP post

Structural Characteristics

Except where noted, properties were determined by physical measurement. Test methods and physical properties have been verified by an independent chartered engineer. The declared values below are minimums for each characteristic.

Structural Properties

Max bending moment, M_u : 24.4 kNm
 Stiffness for bending, EI : 174.6 kNm²
 Max moment for torsion*, T_u : 14.07 kNm
 Stiffness for torsion, GI_t : 51.87 kNm²
 Shear capacity*, V : 108.6 kN
 Shear capacity (measured**), V : >8.3 kN
 * calculated value
 ** test equipment unable to safely apply greater force

The structural characteristics of the Frangible Safety Post, above, are used to calculate the sign carrying capacity given the load requirements of BS EN 12899-1 or BS EN 1991-1-4.

These calculations may be done using proprietary or off the shelf software packages that have included the structural details of this product.

Testing/Approvals

The Frangible Safety Post – Series 140 has been tested using BS EN 12767. The overall rating for this post is NE2 with individual speed ratings of:

Impact Speed (kph)	Sign	Rating	ASI	THIV
100	on a single post	NE3	0.5	10
70	on a single post	NE2	0.3	17
35	on a single post*		0.3	14
100	on 2 posts, 1 hit**	NE3	0.4	10
100	on 2 posts, 2 hit***	NE2	0.6	22

* EN 12767 does not allow for energy ratings in the 35kph test. When tested at 35kph, the post collapsed in a way consistent with an NE rating.

** The posts were installed at >1.6m separation

*** The posts were installed at 750mm separation

BS EN 12767:2019 Classification

140mm: 50,70,100:NE:B:S:SE:MD:0

General Performance Considerations

The intended use of the Frangible Safety Post is for the mounting of appropriately sized, vertical traffic signs and other roadside devices. Other uses (i.e. where access holes are created low on the pole) have not been investigated and are not recommended.

It is the responsibility of the road authority to specify Frangible Safety Posts in locations appropriate for NE rated products.

When specifying / installing signs on multiple posts equal loading of each post is recommended to maximise wind load carrying capacity for that installation. When multiple Frangible Safety Posts are used for a sign they may be installed as close as 750mm apart.

Mounting another sign on installed posts

A post and foundation suitable to support a particular sign may not be sufficient to carry another in that location. Any substitution of signs or unplanned additions of supplemental plates to an existing installation should only be done after confirming that the post / foundation are not taken beyond its maximum wind load design capacity.



Post uses standard fixings

Effect of vehicle impact

Frangible Safety Posts tend to collapse when hit by a car. Depending on the speed of impact the sign may fall with the post (very slow impact) or slide off post and fall behind the car that hit it and near the post installation spot (medium or high speed impact). In the unlikely event that a post is bumped by a vehicle but not knocked down it may still be damaged and be unable to continue to carry the sign. Replacement of any Frangible Safety Post which has been involved in a vehicle impact is recommended.

When damaged by a vehicle, the Frangible post fragments generated may have some ragged edges and fibrous residue.

Health & Safety

Please follow all safety information contained in this product bulletin when using the Frangible Safety Post. Refer to this and/or other documentation for health, safety, and handling information on the products referenced in this bulletin.

Warning: Ensure that personnel use personal protective equipment appropriate for clear up activities.

Frangible Safety Posts Ltd. reserve the right to investigate any Frangible Safety Post reported to have failed inappropriately.

Product Handling

The posts have been specifically designed to be frangible on impact. Care should be taken when handling the posts not to impart any undue impact (such as dropping the posts on the ground from height) as this may detrimentally affect the structural performance of the product.

IMPORTANT NOTICE TO PURCHASER

Technical information provided by Frangible Safety Posts Ltd. is based on experience and/or tests believed to be reliable but its accuracy is not guaranteed and the results may not be relevant to every user's application. Frangible Safety Posts Ltd. does not accept responsibility or liability, direct or consequential, arising from reliance upon any information provided and the user should determine the suitability of the products for their intended use.

Nothing in this statement will be deemed to exclude or restrict Frangible Safety Posts Ltd's liability for death or personal injury arising from its negligence.

All questions of liability relating to Frangible Safety Posts Ltd products are governed by the seller's terms of sale subject where applicable to the prevailing law.

If any goods supplied or processed by or on behalf of Frangible Safety Posts Ltd prove on inspection to be defective in material or workmanship Frangible Safety Posts Ltd will (at its option) replace the same or refund to the Buyer the price of the goods or services.

Except as set out above, all warranties and conditions, whether expressed or implied, statutory or otherwise are excluded to the fullest extent permissible at law.

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