

TOPAS

Traffic Open Products and Specifications

TOPAS 2546A

Performance Specification for Passive Safety Products under BS EN 12767

Revision	Date	Scope	Authorised by
A v5	19/7/23	FINAL	Board

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TOPAS 2546A

PERFORMANCE SPECIFICATION FOR PASSIVE SAFETY PRODUCTS UNDER BS EN 12767

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1 INTRODUCTION

- 1.1 This specification covers the performance requirements for Passively Safe Products required to meet BS EN 12767 and its National Annex that are intended for use on UK public highways.
- 1.2 This specification does not include other roadside products developed under BS EN 1317 - Road Restraint Systems, etc.
- 1.3 TOPAS specifications are explicitly purchasing specifications and compliance with them is not mandatory. However Local and other Purchasing Authorities may typically require that equipment purchased complies with TOPAS specifications and is TOPAS registered.
- 1.4 Manufacturers may register products as being compliant with this specification, using the process defined in TOPAS 0600.
- 1.5 TOPAS registration requires manufacturers submit a Technical File to an appropriate Technical Assessor to aid compliance verification. The content requirement for the Technical File is defined in Appendix Z of this specification.
- 1.6 Within this specification, "The Product" shall mean all components necessary to provide a complete operational unit meeting the requirements of this specification and the common requirements defined in TOPAS0600.

Glossary of Terms

- 1.8 TOPAS Terms are defined in TOPAS 0600 and TOPAS 0601.

Implementation

- 1.7 This specification will be immediately implemented from the date of issue for all new TOPAS registrations.

2 NATIONAL REQUIREMENTS

- 2.1 Equipment conforming to this specification shall comply with the class requirements of BS EN 12767 UK Annex.
- 2.2 Although BS EN 12767 is not called up expressly in UK legislation, users should be aware that other product standards which include references to BS EN 12767 for equipment that is mounted on passive support structures are called up in the following legislation:
- Traffic Signs Regulations and General Directions 2016 (as amended) (TSRGD),
 - Traffic Signs Regulations (NI) 1997 (as amended) (TSRNI) Great Britain the Traffic Signs Regulations and General Directions 2016 (TSRGD).
- 2.3 The attention of purchasers and manufacturers is drawn to the publications that inform how and what signs and signals can be deployed on UK public highways, namely:
- Traffic Signs Manual (TSM),
- Design Manual for Roads and Bridges (DMRB).
- 2.4 The scope of BS EN 12767 is not intended to provide all the requirements for safety of products intended for the UK. All products registered under this specification must also comply with all additional requirements stipulated under the respective product standards for the applicable use, including but not limited to BS EN 12899; BS EN 12966; BS EN 12368; BS 8442; BS EN 40. Consideration should also be given to any additional requirements for roadside cabinets and utility poles.
- 2.5 Registration to this specification does not confirm compliance to the requirements of those product standards identified above except for the passively safe test elements identified of EN 12767 called up within those standards. However, evidence of CE/CA marking to those product standards is required to be evidenced for this TOPAS specification under Appendix Z.

3 PERFORMANCE CLASSES

3.1 The performance levels and classes stated below have been copied from the National Annex (NA) to BS EN 12767.

3.2 All testing requirements are identified under BS EN 12767. TOPAS registration is for products and product families that have undertaken specified testing under that standard.

3.3 Class 0 – support structure with no performance requirements under BS EN 12767 do not have performance and/or test requirements and are therefore not permitted to be registered with TOPAS.

3.4 Annex K BS EN 12767 'Deemed to Comply' products are not permitted to be registered with TOPAS.

Table NA 1 12767:2019 Performance class recommendations

Situation	Location	Type of Support Structure		
		Lighting Column	Sign or signal support	Non-harmful support structure
Non-built up all-purpose roads and motorways with speed limits > 40 mph	Generally, in verges of motorways, dual carriageways, and single carriageway roads	100:NE:NR:NR:NR:MD:0	100:NE:NR:NR:NR:MD:0	100:NE:A
	With significant volume of non-motorised users at the times when impact events occur	100:HE:NR:NR:NR:MD:0	100:HE:NR:NR:NR:MD:0 100:LE:NR:NR:NR:MD:0 100:NE:NR:NR:NR:MD:0	100:NE:A
	When major risk of items falling on carriageways below (e.g. at grade separated interchanges)	100:HE:NR:NR:NR:MD:0	100:HE:NR:NR:NR:MD:0 100:LE:NR:NR:NR:MD:0 100:NE:NR:NR:NR:MD:0	100:NE:A or 70:NE:A
Built up roads and other roads with speed limits ≤ 40 mph	All locations	70:HE:NR:NR:NR:MD:0 100:HE:NR:NR:NR:MD:0 70:LE:NR:NR:NR:MD:0 100:LE:NR:NR:NR:MD:0 70:NE:NR:NR:NR:MD:0 100:NE:NR:NR:NR:MD:0	70:HE:NR:NR:NR:MD:0 100:HE:NR:NR:NR:MD:0 70:LE:NR:NR:NR:MD:0 100:LE:NR:NR:NR:MD:0 70:NE:NR:NR:NR:MD:0 100:NE:NR:NR:NR:MD:0	100:NE:A or 70:NE:A
<ul style="list-style-type: none"> For roads >40mph preference is given in the order stated from top to bottom. For roads ≤40mph no preference is required. Sign or signal support includes supports for items of similar weight to that of the item supported in the test, such as variable message signs and speed cameras Category NE can be accepted in any situation where the standard steel posts defined as 'deemed to comply' in Annex K are used Category MD is the most preferable in all situations, followed by category BD or category SD 				

4 REFERENCES

General

4.1 Where undated references are listed, the latest issue of the publication applies.

British Standards

4.2 The British Standards Institution, London, publishes British Standards.

BS EN 12767	Passive safety of support structures for road equipment - Requirements and test methods
BS EN 12899	Fixed, Vertical Road Traffic Signs
BS EN 12966	Road Vertical Sign - Variable Message – Traffic Signs
BS EN 12368	Traffic Control Equipment – Signal Heads
BS EN 40	Lighting Columns

Specifications

4.3 TOPAS Limited publications are available from www.topasgroup.org.uk

TOPAS 0600	TOPAS Registration process
TOPAS 0601	TOPAS Registration Additional Guidance

Other Publications

4.4 Other publications can be obtained from the Stationary Office publishing.service.gov.uk

TSRGD The Traffic Signs Regulations and General Directions
 Traffic Signs Manual, all Chapters

 Design Manual for Roads & Bridges, National Highways

APPENDIX A - INFORMATIVE GUIDE

Product Family Groups

- A.1 Registration of products under this TOPAS specification may be identified as family groups using the constant characteristics listed in the table below. All products that fall within the specific category will be assumed to be part of the group.
- A.2 The manufacturer by the Declaration of Conformity submitted to TOPAS affirms that these constant characteristics apply to all product variants that are listed in Appendix 2 of the Declaration of Conformity.
- A.3 Any product(s) with any one or more characteristic(s) which do not meet the above criteria must be registered as a separate family group.
- A.4 Under Item 7 of Appendix Z Applicants must provide full test reports in the Technical File for the product families to be registered, which testing must be undertaken by an appropriately qualified independent approved test house. A list of test schedules will not be sufficient.
- A.5 Test results must include details of all elements identified in the list of constant characteristics below.

Constant Characteristics of product family under the TOPAS Registration

1	The product range must be covered by the same product norm (such as EN40 or EN12899)
2	The product range must have the same impact speed(s)
3	The product range must have the same energy absorption level (HE or LE or NE)
4	The product family range must have the same direction sensitivity (MD, SD, BD)
5	The product family range must have the same roof indentation – only Cat 0 will be accepted
6	The object length must be within the stated certified range and smaller than 1.1x the parent length
7	The object mass must be ≤ 1.1 tested parent mass
8	The product must have the same shape of cross section (such as circular, octagonal, profiled shape)
9	The product family range must be of the same material/alloy properties
10	The presence of connecting systems or stiffness changes must be the same or scaled down related to the parent member
11	Attachments must be the same, smaller or none above 2.0kg above minimum mounting length for UK
12.	Connections for attachments must be equal to or higher than the connection of the attachment present during the test
13.	All products in the family must have the same or lower bending capacity
14.	All products in the family must have the same or lower shear capacity
15.	Systems used must be identified in full

APPENDIX Z TECHNICAL FILE CONTENT

This appendix defines the necessary content for a Technical File (a collection of relevant documents) which must be reviewed by an appropriate Technical Assessor as part of the TOPAS Registration process (See TOPAS 0600).

The 'ticked' items are required to be present in a Technical File used to support TOPAS Registration against TOPAS 2546A. **Please read the description criteria carefully.**

<i>Ref</i>	<i>Item</i>	<i>Description</i>	<i>Required</i>
1	Overview document	<p>A summary document outlining the product, specifying which TOPAS and other relevant specification(s) the product has been designed to comply with, together with a detailed table of contents for the Technical File.</p> <p>Where external certificates or documents are referred to these shall be included either:</p> <p>(a) within this overview document; or (b) (b) supplied separately as part of this Technical File.</p>	✓
2	QA accreditation certificate(s)	A copy of the Quality Management Registration Certificates for the organisation applying for TOPAS Product Registration.	✓
3	Details of all required standards and regulations including CE/CA requirements that apply to the Product	<p>A list of all standards to be complied with.</p> <p>Including explicit CE/CA declarations of performance/conformity for those standards, including all certificates, shall be included in this Technical File.</p>	✓
4	A functional design description of the product	Title, document number, version and date of the overall System Design Document for the Product.	✓
5	Product part numbers	A list of top-level assembly part numbers and their issue states including all firmware / software part numbers and issues.	✓

6	Statement of Compliance	<p>A clause-by-clause statement of compliance against TOPAS 2546A confirming compliance or non-compliance and referencing supporting evidence.</p> <p>(An example template can be found on the TOPAS website)</p>	✓
7	Functional test procedures and results	A list of all functional test schedules and test result documents (by document number and issue) that substantiate the Statement of Compliance.	✓
8	BS EN 50293 EMC test procedures and results	<p>(a) Title, document number, version and date of the EMC test performance requirement document.</p> <p>(b) Copies of the results of EMC testing undertaken by an appropriately qualified independent approved test house <u>must</u> be included in the Technical File.</p>	N/A
9	Optical test procedures and results required by this specification	<p>For all products which have any defined optical performance requirements</p> <p>(a) Title, document number, version and date of the optical test performance requirement document.</p> <p>(b) Copies of the results of optical testing undertaken by an appropriately qualified independent approved test house <u>must</u> be included in the Technical File.</p>	N/A
10	Environmental test results	<p>(a) A list of relevant Environmental tests performance requirements defined in TOPAS 2130.</p> <p>(b) Copies of the results of the Environmental testing undertaken by an appropriately qualified independent approved test house <u>must</u> be included in the Technical File.</p>	N/A

11	Radio Equipment Regulations test results	<p>For all products which include any transmitting and/or receiving radio equipment</p> <p>(a) A copy of the RER Declaration Of Conformity</p> <p>(b) Reference to the RER Technical Documentation for the product (by title, document number and version).</p> <p>(c) Copies of the results of radio testing, undertaken by an appropriately qualified independent approved test house <u>must</u> be included in the Technical File. The test results should be those identified in the RER Technical Documentation and should cover any specific IR2030 requirements for the type of radio used.</p> <p>(d) A copy of the Type Examination Certificate for radio equipment not covered by a Designated EN standard.</p>	N/A
12	Primary Safety Test procedure and results	<p>For Traffic signal Control equipment only:</p> <p>(a) The title, document number, version and date of the Primary Safety Test schedule.</p> <p>(b) A copy of the test results must be included as part of the Technical File.</p>	N/A
13	Failure Mode Analysis	<p>For Traffic signal Control equipment only</p> <p>Title, document number, version and date of the product failure mode analysis requirements and results.</p>	N/A