

Guide to the selection and installation of covers for manholes and inspection chambers - BS 7903: 2020

Introduction

The updated publication BS 7903: 2020 '*Guide to the selection and installation of manhole tops and gully tops within the highway*' provides information to help those designing drain and sewer systems in highways to deliver safe, durable, maintainable and usable installed cover systems through appropriate selection and installation of products to the latest version of BS EN 124.

BS EN 124 Parts 1 to 6 '*Gully tops and manhole tops for vehicular and pedestrian areas*' was published in 2015 and completely replaced BS EN 124: 1994.

The expansion into six parts reflects the wide range of materials now used for manufacture of covers – with common requirements set out in Part 1 and material specific requirements (iron, steel, aluminium, composites and thermoplastics) in Parts 2 to 6. The standard therefore offers a wide choice of products to the market.

Despite the titles, which were retained from the earlier version, **BS EN 124: 2015 and the guidance in BS 7903: 2020 are applicable to covers for gullies, manholes and inspection chambers.**

Good design and installation together with a properly specified product will ensure the long-term performance of the cover and the frame system. Plastic manholes and inspection chambers are paired with the most suitable covers for the location of the installation, so the BPF Pipes Group welcomes the revision of BS 7903 and was pleased to be able to work closely with representatives from the trade associations for iron, steel and composite covers to support BSI in the preparation of the new guidance.



Correct specification

BS EN 124: 2015 Parts 1 – 6 is a voluntary specification against which manufacturers can seek product certification (such as the BSI Kitemark) and purchasers can specify products suitable for their projects.

All manufacturers should now be using this version of the standard to demonstrate the performance of the products sold. Similarly, all designers and purchasers should be using it to specify the product performance expected in tender documents and engineering specifications.

Covers need to conform to Part 1 of BS EN 124 (*Definitions, classification, general principles of design, performance requirements and test methods*) and any specific materials requirements given in the relevant Part 2 to 6. So, for example, thermoplastic covers are required to meet BS EN 124-1: 2015 in combination with BS EN 124-6: 2015.

Best practice guidance

BS 7903: 1997 was prepared to accompany BS EN 124: 1994 providing additional information on materials, dimensions, and installation of products for the UK. It is therefore out of date and should not be used.

BS 7903 has been fully revised to provide guidance on the selection and use of products meeting the requirements of the current version of BS EN 124.

It has been structured such that additional information on any topic in BS EN 124-1: 2015 can easily be found by reading across to the clause of the same name and number.

Unlike many 'off the shelf' products, covers and their supporting frames are just one part of an overall installation in the highway. The road surface, the backfilling around the cover and chamber, and quality of workmanship all make a major contribution to a single system which is safe, durable and maintainable in service. BS 7903: 2020 therefore provides valuable guidance to specifiers on how to get the best long-term performance from covers after they leave the factory gate.

In particular, this includes:

- Consideration of the loads and any additional protection during the construction period to ensure that the installed product starts its service life as intended;
- Identifying the various factors which influence the choice of product for safe and durable operations;
- Coating options for aesthetic or functional purposes;
- Matching the performance of bedding and packing materials to the product and installation conditions; and
- Choosing designs to help with surface water run-off or conversely sealing of chambers.

Often the most extreme conditions are seen during the construction phase with unfinished road surfaces and heavy construction traffic. BS 7903: 2020 recognises this and offers suggestions for managing this risk.

In revising BS 7903, the BSI committee has retained and where appropriate extended, best practice guidance especially on topics such as minimum clear opening sizes for safe ingress and egress, features for securing and handling covers on site, and the practicalities of specifying sizes and shape of covers and frames to dissipate traffic loads.

Highways

Strangely, the term 'highway' was not defined in either BS EN 124 or BS 7903. This is now described in BS 7903: 2020 as an "area that includes some, or all, of the following features: carriageway, cycleway, footway, verge, hard shoulder, hard strip and central reservation".

For very high risk parts of the highway network i.e. motorways and trunk roads, Highways England will no longer be permitting covers to be installed in carriageways (including hard strips, hard shoulders and central reserve crossovers). For sections of motorway and trunk road outside of the carriageway, Highways England has specific requirements to manage the risk. Readers are advised to carefully check CD/534, Highways England, 2020.

CE Marking

The European Commission did not cite the EN 124: 2015 suite of standards in the Official Journal of the European Union. Therefore, it is currently not possible (or legal) to affix CE Marking to gully tops and manhole tops.

CE marking declares that a product complies with all applicable European Directives and Regulations. It does not necessarily demonstrate that a product is durable and fit for purpose.

Third party assessment and certification

The British Plastics Federation (BPF) Pipes Group and its members strongly advise that compliance with the product standards is verified by a third-party certification scheme (for example, the BSI Kitemark or equivalent).

Covers are required to meet both BS EN 124-1: 2015 and the Part relevant to the material. The certificate should list both parts of the standard.