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Specification for steel trench struts

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Committees responsible for this British Standard

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- Health and Safety Executive
- UK Steel Association
- Co-opted member

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Foreword

This British Standard has been prepared by Subcommittee B/514/28. Together with BS EN 1065:1999, it supersedes BS 4074:1982, which is withdrawn.

Safe working loads of trench struts are not specified in this standard. It is recommended that the axial concentric compression working load of trench struts be less than 30 kN.

The principal changes from the 1982 edition are as follows.

- a) Adjustable telescopic steel props (previously known as metal props), which are primarily intended for use in falsework and other structures requiring temporary compression support members, are now covered in BS EN 1065:1999.
- b) The title has been changed to *Specification for steel trench struts* to describe the common usage of the product more accurately.
- c) The details for designing a trench strut according to its geometric characteristics have been amended to include thinner-walled thread-rolled outer tubes and thinner-walled higher-strength inner tubes, which will result in lighter, more economical designs.
- d) Cut threads on the outer tubes are no longer included.
- e) A test to verify that the component parts of trench struts do not become inadvertently disengaged in use has been added.
- f) There is now a requirement aimed at preventing shear failure caused by any reduction in the pin cross-section.
- g) There is now a requirement to mark trench struts with the year of manufacture.

The previously accepted characteristic resistance, f_k , of trench struts has been retained at 50.0 kN.

Examples of calculations on trench strut pin connections are given in annex A.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 11 and a back cover.

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1 Scope

This British Standard specifies requirements for adjustable compression tubular steel trench struts. The requirements relate to materials, design, dimensions, strength and resistance to unintentional disengagement. The dimensions specified include the lengths fully open and fully closed.

The standard does not give information on the use of trench struts.

NOTE 1 The requirements of this standard are intended to ensure that the struts will have a characteristic resistance of 50 kN at all extensions. The standard does not specify a requirement for this characteristic resistance or a means of verifying it. Annex A gives examples of calculations on trench strut pin connections.

NOTE 2 Various protective finishes are specified in BS EN 1065:1999.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication applies.

BS EN 1562, *Founding — Malleable cast irons*.

BS EN 1563, *Founding — Spheroidal graphite cast iron*.

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1

trench strut

compression member, of adjustable length, intended for use as a temporary horizontal support for building and civil engineering works

NOTE See Figure 1.

3.2

claw plate

plate with upturned corners, which is welded to a tube end and is intended to grip a timber waler

3.3

collar nut

internally threaded casting, incorporating a handle and a podger hole, providing fine adjustment to a trench strut

3.4

outer tube

larger diameter tube, one end of which is threaded and slotted

3.5

inner tube

smaller diameter tube provided with holes for the coarse adjustment of the trench strut

3.6

length fully open

distance measured between the outer faces of the claw plates when the pin is in the hole furthest from the inner tube claw plate and the collar nut is at its maximum distance from the outer tube claw plate

3.7

length fully closed

distance measured between the outer faces of the claw plates when the pin is in the hole nearest the inner tube claw plate and the collar nut is at its minimum distance from the outer tube claw plate