

Metal scaffolding —

Part 5: Specification for materials, dimensions, design loads and safety requirements for service and working scaffolds made of prefabricated elements

This Harmonization Document HD 1000:1988 has the status of a British Standard

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National foreword

This part of BS 1139 has been prepared under the direction of the Civil Engineering and Building Structures Standards Policy Committee.

This Part of BS 1139 is one of a series specifying requirements for the design, construction and testing of equipment for use in scaffolding and other temporary structures. BS 1139-5 is identical with HD 1000:1988 "Service and working scaffolds made of prefabricated elements. Materials, dimensions, design loads and safety requirements" published by the European Committee for Standardization (CEN). HD 1000 was produced as a result of agreement in CEN Technical Committee TC 53, Scaffolds, falsework and mobile access towers, in which the UK took an active part.

National annexes, referred to in Clause 4 exist for Austria, Denmark, Finland, France, Germany, Netherlands, Norway, Sweden and Switzerland but these are not reproduced here.

Attention is drawn to the following.

- a) This is the first time that prefabricated scaffold equipment has been covered by a specific British Standard which includes recommendations concerning the design criteria and basic minimum configuration for prefabricated scaffolds. The manufacturer is therefore given a broad framework to work within, and this is further encouraged by the inclusion of references to a number of national and international standards applicable to this type of scaffolding.
- b) As the document reflects practices current in many European countries, there is mention of items that are new to the UK scaffolding industry, such as the reference to provision for intermediate guard rails. These references are not intended to force the use of this additional equipment, but to leave the scaffolder the option of using it should this be required. However it is hoped the emphasis given in the standard to the various forms of side protection will encourage the use of such equipment, giving enhanced levels of protection above the minimum required by the UK's safety legislation.
- c) The reference to class 1, 2 or 3 scaffolds with a minimum width of 0.6 m should not be interpreted as implying such a width is legally acceptable in the UK in all circumstances. Compliance with the Construction Working Places Regulations is necessary.
- d) This is a standard for the manufacture of prefabricated scaffolds, which includes a requirement for the manufacturer to supply information for the use of the particular scaffold. BS 5973 "Code of practice for access and working scaffolds and special scaffold structures in steel" gives general guidance on scaffolds, but the information on the particular scaffold should be followed.
- e) Work is in progress in CEN/TC 53 to produce documents covering testing and assessment of prefabricated scaffolds.
- f) The current titles of the publications referred to in the national annex of the United Kingdom are given in national appendix NB.

BS 1139 is now published in separate Parts and Sections as follows:

- *Part 1: Tubes;*
- *Section 1.1: Specification for steel tubes;*
- *Section 1.2: Specification for aluminium tube;*
- *Part 2: Couplers;*
- *Section 2.1: Specification for steel couplers, loose spigots and base-plates for use in working scaffolds and falsework made of steel tubes;*
(Identical with EN 74)
- *Section 2.2: Specification for steel and aluminium couplers, fittings and accessories for use in tubular scaffolding;*
- *Part 3: Specification for prefabricated access and working towers;*

- *Part 4: Specification for prefabricated steel splitheads and trestles;*
- *Part 5: Specification for materials, dimensions, design loads and safety requirements for service and working scaffolds made of prefabricated elements.*

(Identical with HD 1000)

Attention is also drawn to Figure 6, drawing 2d in HD 1000 where the series of axial loads reads V_{12} , V_{13} , V_{14} , V_{16} , V_{17} with V_{15} omitted. This is an editorial error and will be notified to the CEN/TC 53 secretariat.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, the HD title page, pages 2 to 20 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Keywords: Site equipment, Scaffolding, Prefabricated elements, Mechanical strength, Loads: Forces, Dimensions, Specifications, Safety, Designation, Definitions.

English version

**Service and working scaffolds
made of prefabricated elements
Materials, dimensions, design loads and safety
requirements**

Echafaudages de service en éléments
préfabriqués; Matériaux, dimensions,
charges de calcul et exigences de
sécurité

Arbeitsgerüste aus vorgefertigten
Bauteilen (Systemgerüste);
Werkstoffe, Gerüstbauteile, Abmessungen,
Lastannahmen und sicherheitstechnische
Anforderungen

This Harmonization Document was accepted by CEN on 1988-02-09. CEN members are bound to comply with the requirements of the CEN/CENELEC Rules which stipulate the conditions for giving this Harmonization Document the status of a national document without any alteration.

Up-to-date lists and bibliographical references concerning such national Harmonization Documents may be obtained on application to the CEN Central Secretariat or to any CEN member.

This Harmonization Document exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to CEN Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Brief history

At the request of Denmark CEN/TC 53 began work in 1974 on the standardization of the item "Service and Working Scaffolds made of Prefabricated Elements — Materials, Dimensions, Design Loads and Safety Requirements". Since then twelve draft proposals have been studied. At its 19th plenary meeting in March 1984 CEN/TC 53 decided to publish a revised draft proposal as a European Harmonization Document. After discussion of technical changes proposed on the occasion of the preliminary vote CEN/TC 53 decided in November 1986 to propose a revised Harmonization Document and sent it to the Central Secretariat for final vote. As soon as International Reference Standards for materials and factors of safety are available this Harmonization Document can be considered for adoption as an EN.

During discussion of the draft it was noted that the average height of people is increasing and that consideration will have to be given in later editions to altering vertical dimensions.

Work is proceeding in CEN/TC 53 on the preparation of European Standards for:

- Methods of test for elements and assembled scaffolds and
- methods of assessment and calculation.

According to the Common CEN/CENELEC rules, the following countries are bound to implement this Harmonization Document:

Finland, France, Germany, Greece, Ireland, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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1 Object and field of application

This Harmonization Document applies to unsheeted anchored prefabricated service and working scaffolds for facades. The requirements described are intended to ensure that scaffolds complying with this Harmonization Document are capable of being erected to a height of 30 m (measured from ground level to the highest platform) under specified loading conditions. The Harmonization Document:

- gives guidelines for the choice of the main dimensions of prefabricated scaffolds
- classifies prefabricated scaffolds according to their loading
- specifies properties for materials to be used
- gives safety engineering requirements and dimensions
- specifies a basic version of an assembled structure.

This Harmonization Document does not specify requirements for ladder components or other means of access between platforms or for sheeted scaffolds.

2 References to other standards

Since other European Standards are not at present available, reference should be made to the relevant standards listed in the national annexes of this Harmonization Document.

NOTE From the date of completion of these European Standards the national standards are to be considered as B-deviation. For the sake of simplicity the concerning applications are already now indicated as B-deviations. At that moment a time limit for the application of national standards as B-deviations should be published.

3 Definitions

For the purpose of this Harmonization Document the following definitions apply (see also Figure 1):

3.1

prefabricated scaffold

scaffold in which some or all the dimensions are predetermined by connections or connecting devices that are permanently fixed to the components

3.2 Bracing member

3.2.1

bracing member in the horizontal plane

frames, framed panels, diagonal braces and rigid connections between transoms and ledgers, etc. used for horizontal bracing

3.2.2

bracing member in the vertical plane

closed frames with or without corner bracing, open frames, ladder frames with access openings, rigid connections of the transoms to the vertical tubes, diagonal bracing, etc. used for vertical bracing

3.2.3

tie member

component connecting the scaffold to the anchorages in the facade of the building

3.3

basic version

see clause 11

3.4

horizontal frame

component which provides a continuous horizontal stiff plane (see typical example given in Figure 2)

3.5

vertical frame

component which provides a continuous vertical stiff plane (see typical example given in Figure 3)

3.6

horizontal/vertical framing system

systems that are continuously braced in vertical and horizontal planes, thus using both types of units defined in 3.4 and 3.5

3.7

modular system

a prefabricated scaffold where the connections to standards are made by prefabricated joints which are at regular (modular) intervals