



BSI Standards Publication

Metal scaffolding

Part 6: Prefabricated tower scaffolds outside the scope of BS EN 1004, but utilizing components from such systems – Specification

Publishing and copyright information

The BSI copyright notice displayed in this document indicates when the document was last issued.

© The British Standards Institution 2022

Published by BSI Standards Limited 2022

ISBN 978 0 7864 2278 2

ICS 01.220

The following BSI references relate to the work on this document:

Committee reference B/514/24

Draft for comment 21/30412754 DC

Amendments/corrigenda issued since publication

Date	Text affected
July 2022	C1: See Foreword

Contents

	Page
Foreword	iii
1 Scope	1
2 Normative references	1
3 Terms and definitions and symbols	2
<i>Figure 1 — Bay</i>	3
<i>Figure 2 — Cantilever platform</i>	3
<i>Figure 3 — Base plate</i>	5
<i>Figure 4 — Bridge beam</i>	5
<i>Figure 5 — Bridge deck</i>	5
<i>Figure 6 — End frame</i>	6
<i>Figure 7 — Walk through end frame</i>	6
<i>Figure 8 — Step through end frame</i>	6
<i>Figure 9 — Portal end frame</i>	7
<i>Figure 10 — High clearance frame</i>	7
<i>Figure 11 — Cantilever tower scaffold</i>	7
<i>Figure 12 — Large deck tower scaffold</i>	8
<i>Figure 13 — Linked tower scaffold</i>	8
<i>Figure 14 — Stepped tower scaffold</i>	9
4 Classification	10
4.1 Load classes	10
<i>Table 1 — Load classes</i>	10
4.2 Access classes	10
4.3 Height classes	10
4.4 Configuration classes	10
4.5 Wind classes	10
<i>Table 2 — Wind classes</i>	11
5 Materials	11
6 General requirements	11
6.1 General and standard configurations	11
<i>Table 3 — Standard configurations - Limits</i>	11
6.2 Dimensions	12
<i>Figure 15 — High clearance frame</i>	12
<i>Figure 16 — Walk through frames</i>	13
<i>Figure 17 — Step through frames</i>	13
<i>Figure 18 — Portal end frames</i>	14
6.3 Openings within platforms	14
6.4 Side protection	14
6.5 Castor wheels and base plates	14
6.6 Access to platforms	14
6.7 Means for stabilizing	14
6.8 Connections	15
6.9 Working and access platform units	15
6.10 Assembly and dismantling	15
6.11 Requirements for prefabricated tower scaffolds less than 2 m working platform height	15
6.12 Requirements for prefabricated tower scaffolds used for access to another place	15
6.13 Vertical distances between platforms	15
<i>Figure 19 — Maximum distance between platforms</i>	16
7 Requirements for structural design	16

7.1	General	16
	<i>Table 4 — Service loads on the whole structure</i>	17
	<i>Table 5 — Service loads on parts of the structure</i>	17
7.2	Characteristic actions on the complete structure including its parts	18
7.3	Characteristic actions on parts of the structure	19
7.4	Deflections	20
8	Structural design	20
8.1	Basic design principle	20
8.2	Structural analysis	21
8.3	Verification	21
8.4	Positional stability	21
9	Deflection	23
10	Design validation	23
10.1	Method	23
10.2	Verification report	23
10.3	Design certificate	23
11	Information to be supplied with the prefabricated tower scaffold	24
11.1	General	24
11.2	Identification of components in the structure	25
11.3	Assembly, permissible alterations and dismantling	25
11.4	Stability	27
11.5	Application and moving	27
11.6	Inspection, care and maintenance	30
12	Marking	30
13	Assessment	31
Annex A	(informative) Contents of an assembly, use and dismantling plan	32
	Bibliography	34

Summary of pages

This document comprises a front cover, an inside front cover, pages I to IV, pages 1 to 34, an inside back cover and a back cover.

Foreword

Publishing information

This part of BS 1139 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 January 2022. It was prepared by Subcommittee B/514/24, *Access towers*, under the authority of Technical Committee B/514, *Access and support equipment*. A list of organizations represented on this committee can be obtained on request to the committee manager.

Supersession

This part of BS 1139 supersedes [BS 1139-6:2014](#), which is withdrawn.

Relationship with other publications

BS 1139, Metal scaffolding, was published in six parts:

- Part 1.1: *Tubes - Specification for steel tube* (superseded by BS EN 39:2001);
- Part 1.2: *Tubes - Specification for aluminium tube*;
- Part 2.1: *Couplers - Specification for steel couplers, loose spigots and wash-plates for use in working scaffolds and falsework made of steel tubes* (superseded by BS EN 74-1:2005);
- Part 3: *Specification for prefabricated mobile access and working towers* (superseded by BS EN 1004-1:2020);
- Part 4: *Specification for prefabricated steel splithead and trestles*;
- Part 5: *Specification for materials, dimensions, design loads and safety requirements for service and working scaffolds made of prefabricated elements* (superseded by BS EN 12810-1:2003);
- Part 6: *Specification for prefabricated tower scaffolds outside the scope of BS EN 1004, but utilizing components from such systems*.

This part of BS 1139 should be read in conjunction with, and is complementary to, BS EN 1004-1, *Mobile access and working towers made of prefabricated elements — Materials, dimensions, design loads, safety and performance requirements*.

Information about this document

Text introduced or altered by Corrigendum No. 1 is indicated in the text by tags C1 C1. Minor editorial corrections are not tagged.

This publication can be withdrawn, revised, partially superseded or superseded. Information regarding the status of this publication can be found in the Standards Catalogue on the BSI website at <http://www.bsigroup.com/standards>, or by contacting the Customer Services team.

Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient’s own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This part of BS 1139 specifies requirements for the structural design of prefabricated tower scaffolds utilizing components from mobile access and working towers specified in BS EN 1004-1 but in configurations that are outside of the scope of that standard.

These configurations include:

- a) high level tower scaffolds outside the maximum height limits of BS EN 1004-1;
- b) tower scaffolds with more than one working platform at one time;
- c) large deck tower scaffolds;
- d) linked tower scaffolds;
- e) cantilever tower scaffolds;
- f) stepped tower scaffolds;
- g) tower scaffolds used as a means of access to another place;
- h) non-mobile towers built on base plates instead of castors; and
- i) tower scaffolds subject to wind loads greater than 0.1 kN/m^2 .

NOTE Towers with wind loads up to 0.1 kN/m^2 are specified in BS EN 1004-1. Where a prefabricated tower scaffold might be subject to wind in excess of 0.1 kN/m^2 , and it cannot be dismantled or moved to avoid these winds, suitable wind design criteria can be found in this British Standard.

This British Standard does not cover prefabricated tower scaffolds using guys as a method of stabilization.

This British Standard does not cover prefabricated towers intended to be lifted.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Standards publication

[BS 1139-1.2](#), *Metal scaffolding – Part 1: Tubes – Section 1.2 Specification for aluminium tube*

[BS 1139-2.2](#), *Metal scaffolding – Part 2: Couplers and fittings – Section 2.2 Couplers and fittings outside the scope of BS EN 1004 – Requirements and test methods*

[BS 5075](#), *Code of practice for temporary works procedures and the permissible stress design of falsework*

[BS 8539](#), *Code of practice for the selection and installation of post-installed anchors in concrete and masonry*

BS EN 174 (all parts), *Couplers, spigot pins and baseplates for use in falsework and scaffolds*

BS EN 1004-1, *Mobile access and working towers made of prefabricated elements – Materials, dimensions, design loads, safety and performance requirements*

BS EN 1993-1-1, *Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings*

BS EN 1995-1-1, *Eurocode 5: Design of timber structures – Part 1-1: General – Common rules and rules for buildings*

BS EN 1999-1-1, *Eurocode 9: Design of aluminium structures – Part 1-1: General structural rules*