

Metal scaffolding —

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

ICS 91.220

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee B/514, Access and support equipment, to Subcommittee B/514/24, Access towers, upon which the following bodies were represented:

British Ladder Manufacturers' Association
Construction Industry Training Board
Department of Trade and Industry
Health and Safety Executive
Hire Association Europe
Prefabricated Aluminium Scaffolding
Co-opted members

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Foreword

This part of BS 1139 has been prepared by Subcommittee B/514/24

It should be read in conjunction with and is complementary to BS EN 1004.

Attention is drawn to the Manual Handling Operations Regulations 1992 (revised 1998) [1] and the Work at Height Regulations 2005 [2].

Information on training is given in Annex A.

Product certification. Users of this British Standard are advised to consider the desirability of third-party certification of product conformity with this British Standard. Attention is drawn to BS EN 1004:2005, Clause 13 in respect of product assessment.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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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 part of BS 1139 specifies requirements for prefabricated mobile tower systems conforming to BS EN 1004 in the assembly of:

- a) access towers outside the scope of BS EN 1004;
- b) other configurations that also incorporate components outside the scope of BS EN 1004.

These comprise high clearance towers, high level towers, linked towers, room scaffolds, cantilevered platform structures and roof scaffolds, all intended, where appropriate, for both indoor and outdoor use.

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.

BS EN 1004:2004, *Mobile access and working towers made of prefabricated elements — Materials, dimensions, design loads, safety and performance requirements*.

BS EN 1298, *Mobile access and working towers — Rules and guidelines for the preparation of an instruction manual*.

3 Terms and definitions

For the purposes of this part of BS 1139 the definitions given in BS EN 1004 and the following apply.

3.1 Frames

3.1.1

step-through frame

tower frame designed to allow through access

NOTE See Figure 1 for an example of a step-through frame.

3.1.2

walk-through frame

tower frame designed to allow through access at ground level

NOTE See Figure 2 for an example of a walk-through frame.

3.2 Scaffolds

3.2.1

roof scaffold

scaffold structure supported by a roof and giving access to a chimney, dormer window etc.

NOTE 1 See Figure 3 for an example of a roof scaffold giving access to a chimney.

NOTE 2 A full unit normally consists of four quarter sections. Where 360° access is not required, one, two or three quarter sections can be used for access to one or more sides.

3.2.2

room scaffold

mobile or static scaffold structure with a height less than 2.5 m, supporting a single decking component or multiples of decking components to give a working platform area at incremental levels

NOTE See Figure 4 for an example of a mobile room scaffold.

3.3 Structures

3.3.1

cantilevered platform structure

tower structure with a working platform projecting beyond the footprint of the structure

NOTE See Figure 5 for an example of a cantilevered platform structure.

3.3.2

scaffold structure

structure which is assembled using mobile access tower components, including those used for tower structures

3.3.3

tower structure

access structure which:

- is assembled using prefabricated components supplied either as a complete kit or as a design that specifically identifies the components being used;
- is capable of being moved manually on firm, level ground, or is static;
- has the dimensions fixed by the design;
- is capable of being used free-standing;
- has one or more working platforms

3.4 Towers

3.4.1

high clearance tower

tower structure with bracing designed either for bridging ground-based obstructions or for maintaining thoroughfares

NOTE See Figure 6 for an example of a high clearance tower.

3.4.2

high level tower

tower structure with a height above 12 m indoors and above 8 m outdoors

NOTE See Figure 7 for an example of a high level tower including tying in points.

3.4.3

linked tower

tower structure linked to form one or more levels of working platform

NOTE See Figure 1 and Figure 8 for examples of linked towers. Figure 8 includes an example of a tying in point.

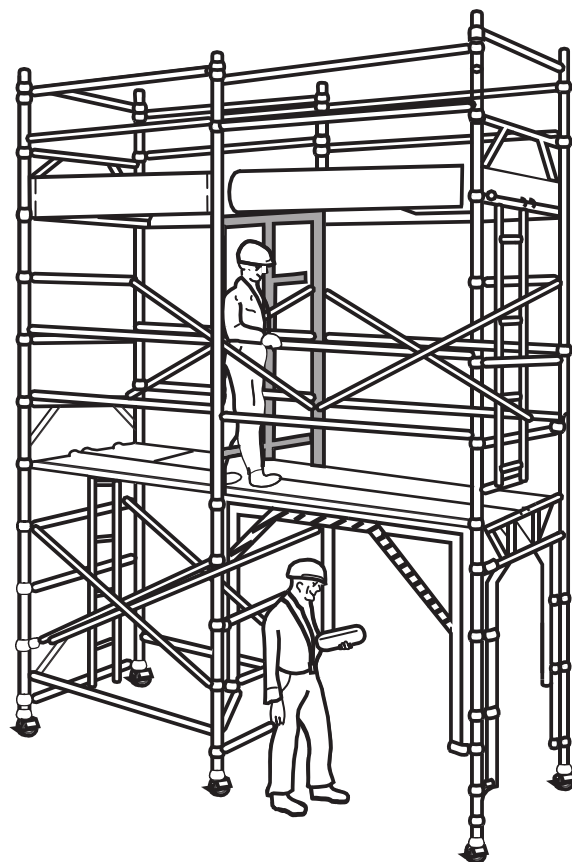


Figure 1 — Example of a step-through frame in linked towers

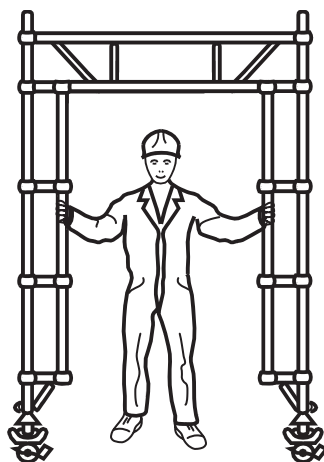


Figure 2 — Example of a walk-through frame

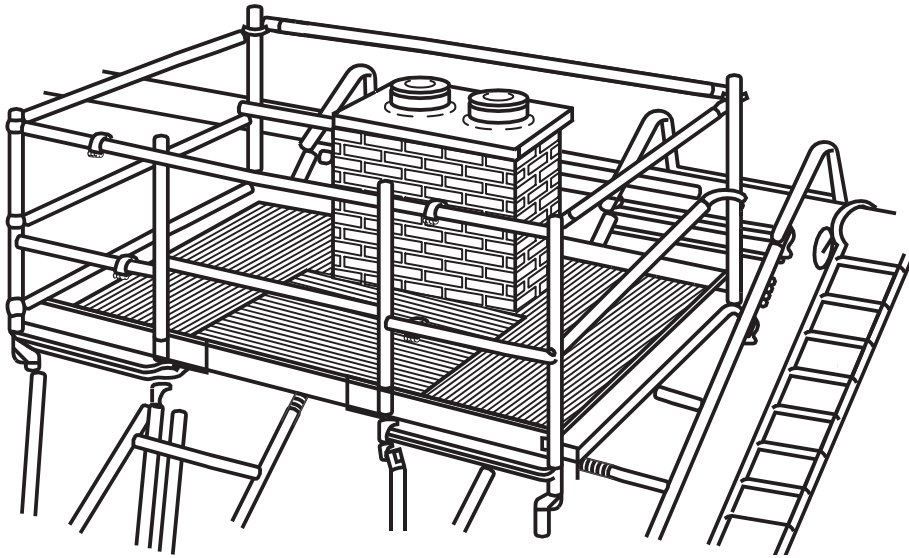


Figure 3 — Example of a roof scaffold



Figure 4 — Example of a room scaffold

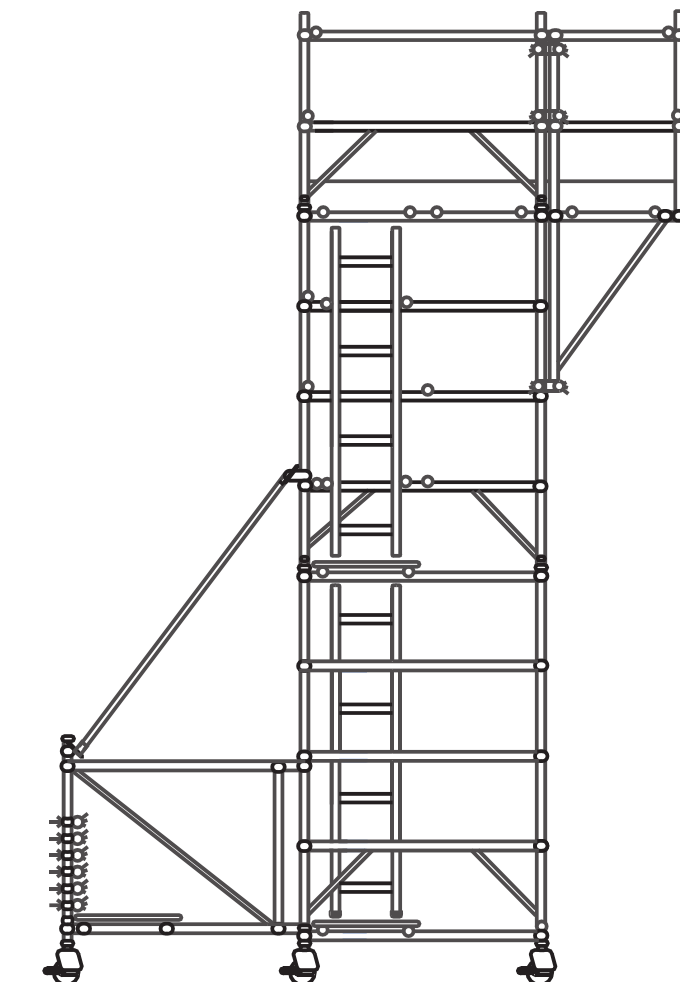


Figure 5 — Example of a cantilevered platform structure

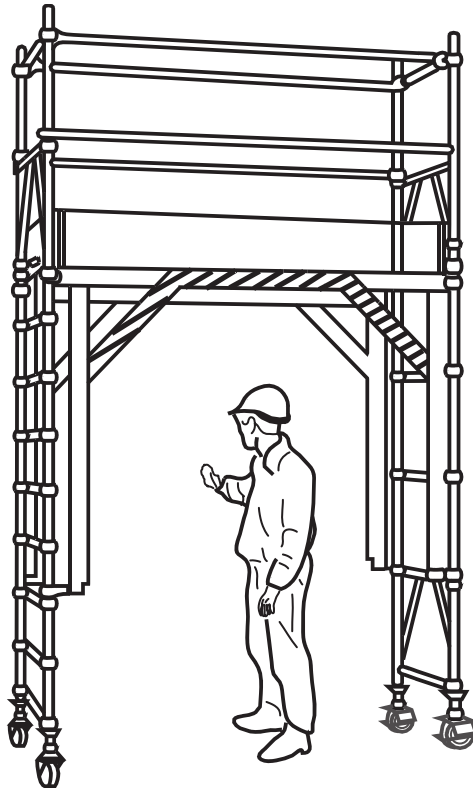
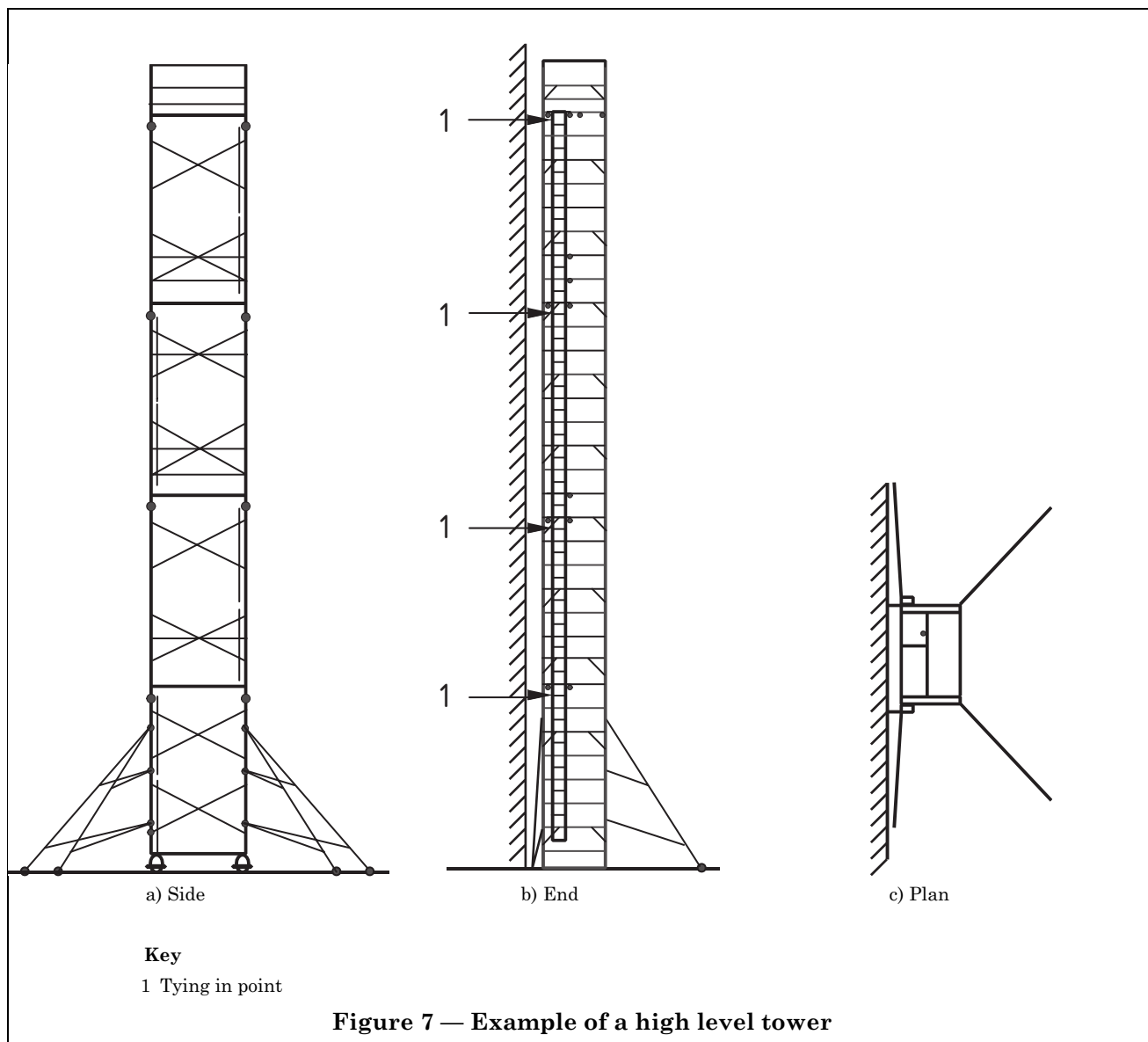
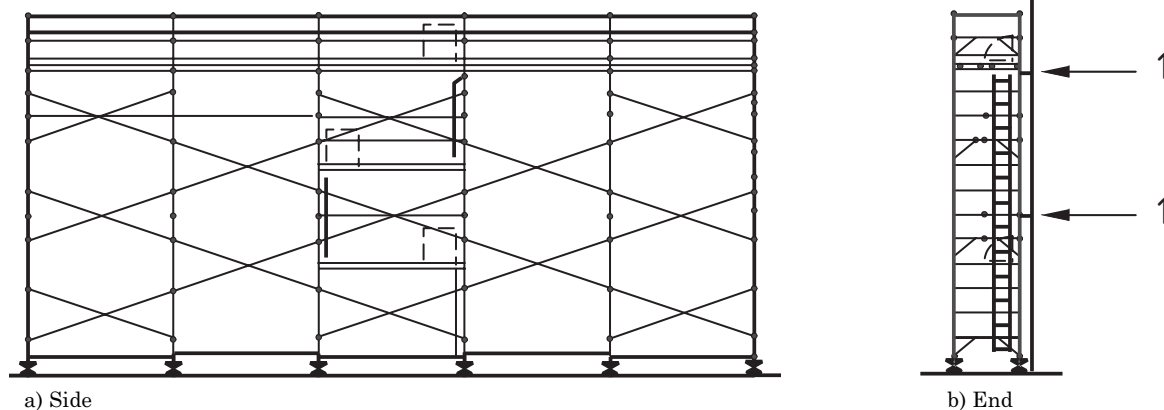


Figure 6 — Example of a high clearance tower



**Key**

1 Tying in point

Figure 8 — Example of linked towers**4 Dimensions**

The dimensions shall be in accordance with BS EN 1004:2005, **7.2**.

NOTE Attention is drawn to the Manual Handling Operations Regulations 1992 (revised 1998) [1] in respect of the safe handling size of components.

5 Materials

The materials shall be in accordance with BS EN 1004:2005, Clause **6**.

6 Structural design**6.1 Room scaffold and roof scaffold**

Room scaffolds and roof scaffolds shall be in accordance with BS EN 1004:2005, Clause **8**.

6.2 High level towers

Stabilizing guys and their fixings, where used, shall be capable of transmitting the loads arising from BS EN 1004:2005, Table 4 for groups 3, 4 and 5, when calculated in accordance with BS EN 1004:2005, Clause **11**.

6.3 High clearance towers

Towers with a platform height greater than 4.4 m shall be individually designed for the specific application. The structural design loads shall be calculated in accordance with BS EN 1004:2005, Clause **11**.

6.4 Cantilevered platform structures

When calculated in accordance with BS EN 1004:2005, Clause **11**, the structure shall be capable of supporting:

- a) a maximum uniformly distributed load on the platform of 0.7 kN/m^2 , or 1.0 kN , whichever is the greater; and
- b) a vertical service load at a position of 100 mm from the most unfavourable edge of the cantilevered platform of 0.75 kN .

For resistance to overturning, cantilevered platform structures shall have a safety factor against overturning of a ratio of 3:1.

6.5 Linked towers

Where access through a tower structure or a linked tower is required, either a walk-through frame shall be used at ground level or a step-through frame at intermediate levels.

Where towers are linked, unrestricted access along the top platform shall be provided, e.g. by the use of vertical posts or specifically designed frames in the place of the original guard-rail end-frames.

7 Components

7.1 High level towers

The components of high level towers shall be in accordance with BS EN 1004:2005, Clause 7.

7.2 Room scaffolds

NOTE Room scaffolds are normally made of a one-piece base structure, which is capable of being folded.

Access to a platform shall be provided by a trap door.

For mobile room scaffolds, the wheels shall have a diameter of not less than 100 mm.

8 Data to be supplied by the manufacturer

8.1 Instruction manual

For each type of scaffold or tower, an instruction manual shall be produced for use on site. The instruction manual shall include at least the information recommended in BS EN 1298.

8.2 High level towers

Guidance on the selection and installation of ties/guys, quantities of ballast and methods of fixing shall be supplied with high level towers.

8.3 Linked towers

The following information shall be supplied with linked towers:

- a) instructions for installation and erection appropriate to the type of the tower, taking into account any requirements for tying in and bracing;
- b) instructions relating to any special measures that are to be taken in cases where there is a deviation from the normal design;
- c) the reduced maximum design load due to the additional number of platforms supported on the inboard frame(s).

8.4 Roof scaffolds

The following information shall be supplied with roof scaffolds:

- a) self-weight of individual components;
- b) total mass of each standard configuration.

8.5 Cantilevered platform structures

For cantilevered platform structures, the safe working load shall be clearly marked at the base of the structure and at the point of access to the cantilever in a position clearly visible to users of the structure. The load shall be given in kilograms (kg).

NOTE The load may be given in terms of a number of people as well, if desired.

Annex A (informative)

Training

Training in the correct erection and safe use of specific prefabricated tower scaffold systems can be provided by the manufacturer of the system.

In addition, construction-related training courses are organized by the Construction Industry Training Board (CITB) and the Prefabricated Access Suppliers' and Manufacturers' Association (PASMA).

For information on CITB courses, contact:

Construction Industry Training Board (CITB)
Direct Training
Bircham Newton
King's Lynn
Norfolk
PE31 6RH

Tel: 01485 577775

<http://www.citb.org.uk>

For information on PASMA courses contact:

Prefabricated Access Suppliers' and Manufacturers' Association (PASMA)
P.O. Box 168
Leeds
LS11 9WW

Tel/Fax: 0845 230 4041

<http://www.pasma.co.uk>

Bibliography

- [1] GREAT BRITAIN. Manual Handling Operations Regulations 1992 (revised 1998). London: HMSO.
- [2] GREAT BRITAIN. Work at Height Regulations 2005. London: The Stationery Office.

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