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BSI Standards Publication

Metal scaffolding

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



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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This part of BS 1139 supersedes [BS 1139-6:2014](#), which is withdrawn.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- Part 1.1: *Tubes - Specification for steel tube* (superseded by BS EN 39:2001);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for steel couplers, loose spigots and base-plates for use in working scaffolds and falsework made of steel tubes* (superseded by BS EN 74-1:2005);
- Part 3: *Specification for prefabricated mobile access and working towers* (superseded by BS EN 1004-1:2020);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 splitheads 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dimensions, design loads and safety requirements for service and working scaffolds made of prefabricated elements* (superseded by BS EN 12810-1:2003);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 Ⓢ Ⓢ. Minor editorial corrections are not tagged.

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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”).

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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 publications

[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 74 – Requirements and test methods*

[BS 5975](#), *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 74 (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*

BS EN 12810-1, *Facade scaffolds made of prefabricated components – Part 1: Product specifications*

BS EN 12811-1, *Temporary works equipment – Part 1: Scaffolds – Performance requirements and general design*

BS EN 12811-2, *Temporary works equipment – Part 2: Information on materials*

BS EN 13374, *Temporary edge protection systems – Product specification – Test methods*

3 Terms and definitions and symbols

3.1 Terms and definitions

For the purposes of this part of BS 1139 the terms and definitions given in BS EN 1004-1 together with the following apply.

3.1.1 alteration

planned change in the design from one permitted configuration to another which is specified in the user instructions or assembly use and dismantling plan

3.1.2 anchor

manufactured device for achieving a connection between a tie and the base material of the supporting structure

[SOURCE: BS 8539:2012+A1:2021, 3.1.2, modified]

NOTE This is also known as a fixing or fastener. In CEN technical specifications the terms “anchor” and “fastener” are used synonymously.

3.1.3 application

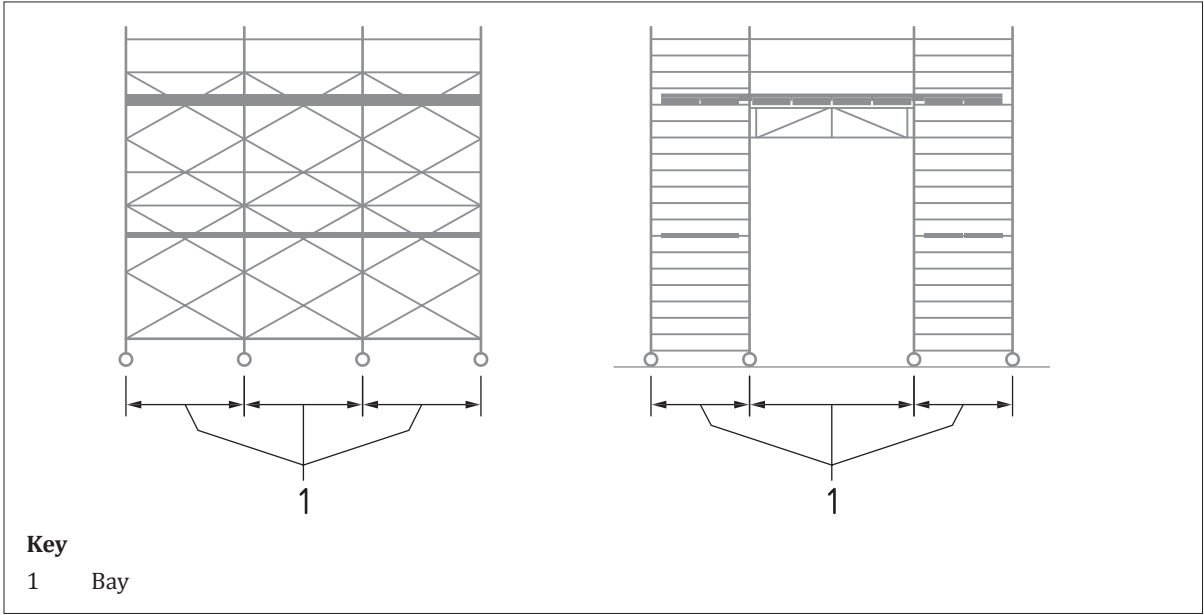
task for which the prefabricated tower scaffold was assembled

3.1.4 bay

section between uprights of a prefabricated tower scaffold through the entire length or width of the tower when viewed in elevation

NOTE Examples of a bay can be seen in [Figure 1](#).

Figure 1 — Bay

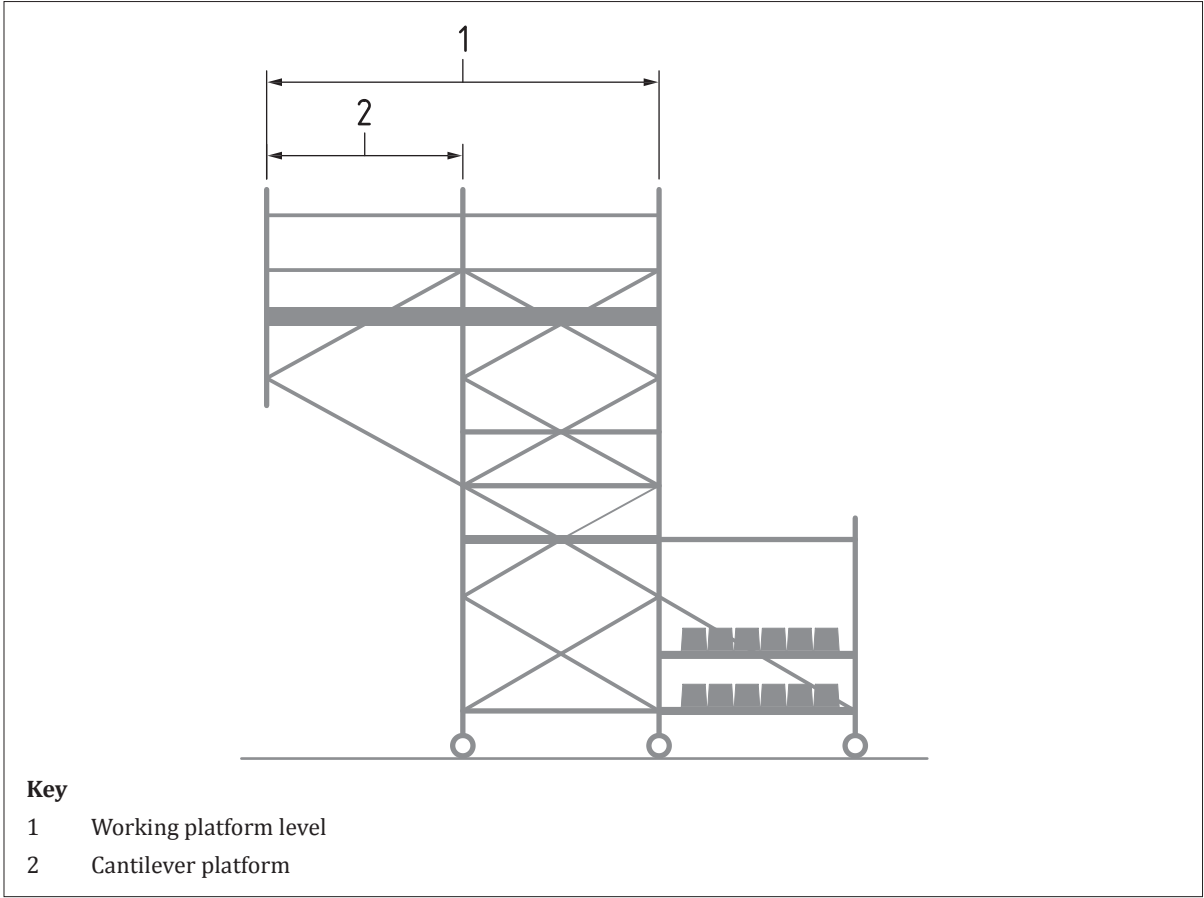


3.1.5 cantilever platform

working platform which projects outwards from the side or end of, and is supported by, the prefabricated tower scaffold

NOTE An example of a cantilever platform can be seen in [Figure 2](#).

Figure 2 — Cantilever platform



3.1.6 cladding

material normally intended to provide weather and dust protection, typically sheeting or netting

NOTE Where cladding of the working scaffold is required, this standard assumes that the scaffold will be clad with either netting or sheeting.

3.1.7 intermediate platform

platform in a mobile access and working tower that is not a working platform

[SOURCE: BS EN 1004-1:2020, 3.22]

NOTE An intermediate platform is used as a place to stand when installing or removing components of the tower when assembling, altering or dismantling the tower, or as a place to stand when ascending or descending the tower.

3.1.8 maximum wind load

maximum out of service horizontal load caused by wind

3.1.9 netting

pervious cladding material

3.1.10 non-standard configuration

configuration of a prefabricated tower scaffold designed for a specific site and supplied with an assembly, use and dismantling plan

3.1.11 prefabricated tower scaffold

temporary works structure made up from prefabricated components which have their dimensions fixed by the design

NOTE 1 Prefabricated tower scaffolds include components used in mobile access and working towers specified in BS EN 1004-1 but in one or more configurations that are outside the scope of that standard.

NOTE 2 It might:

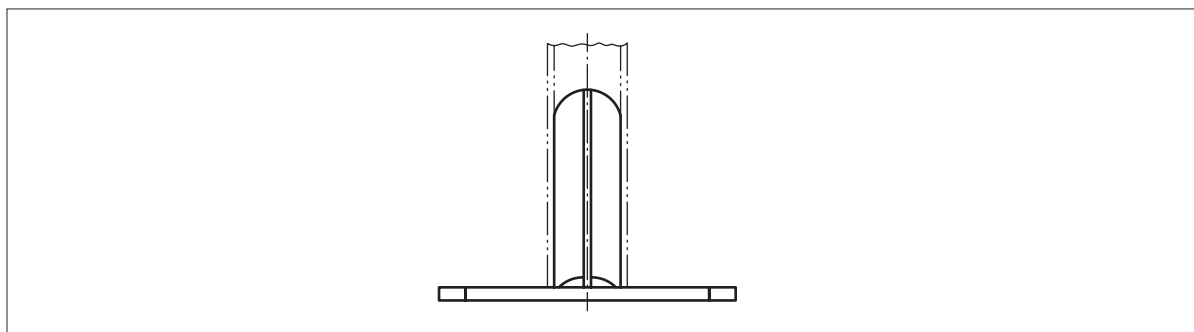
- a) be rendered moveable by the fitting of castor wheels or other mobility devices in contact with the supporting surface at the base, or be rendered static by the fitting of base plates in contact with that surface;
- b) be structurally self-supporting and/or self-stabilized or be structurally supported and/or stabilized by:
 - 1) securing it to an adjacent supporting structure;
 - 2) using other methods which provide the required strength and stability;
- c) have one or more working platforms and intermediate access platforms;
- d) have four or more legs; and
- e) have one or more bays.

3.1.12 prefabricated tower scaffold components

3.1.12.1 base plate

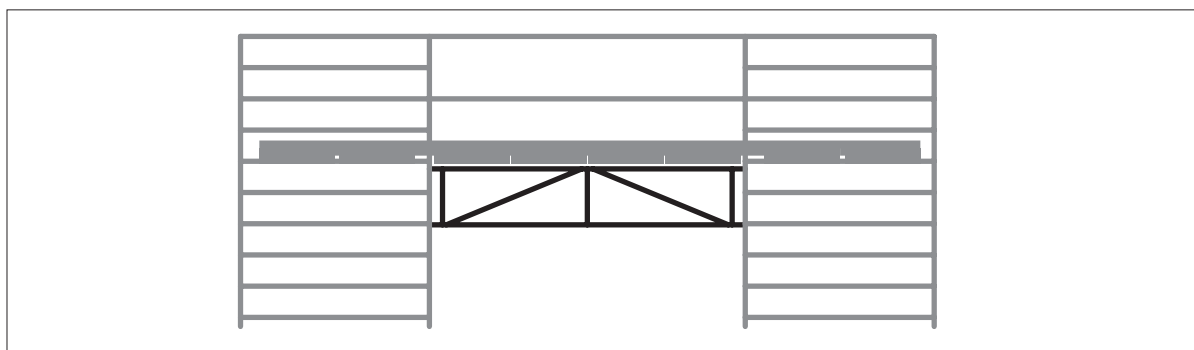
component secured to the base of a prefabricated tower scaffold to provide a support on the ground when movement of the tower is not required

NOTE [Figure 3](#) shows a base plate.

Figure 3 — Base plate**3.1.12.2 bridge beam**

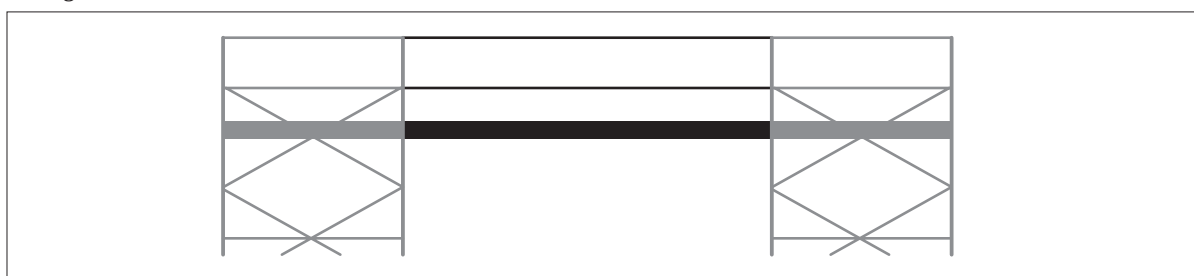
component which is used to connect two prefabricated tower scaffolds

NOTE A bridge beam might support a platform connecting two prefabricated tower scaffolds. An example can be seen in [Figure 4](#).

Figure 4 — Bridge beam**3.1.12.3 bridge deck**

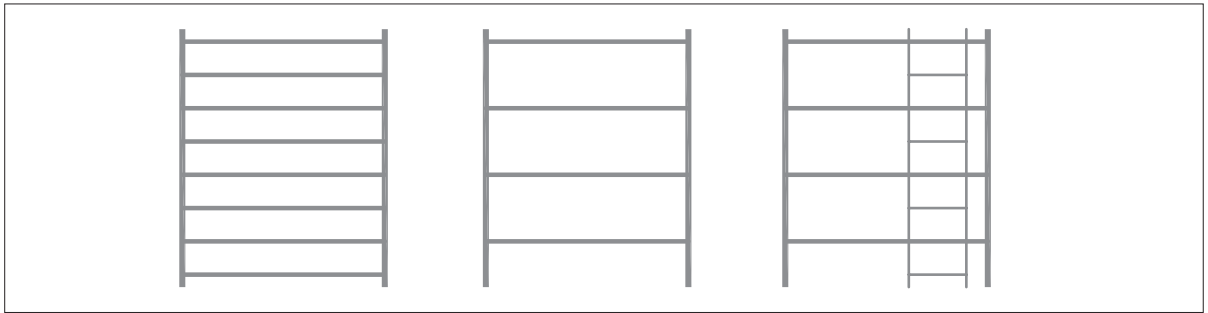
component which connects and creates a bridge between two prefabricated tower scaffolds

NOTE An example of a bridge deck can be seen in [Figure 5](#).

Figure 5 — Bridge deck**3.1.12.4 end frame**

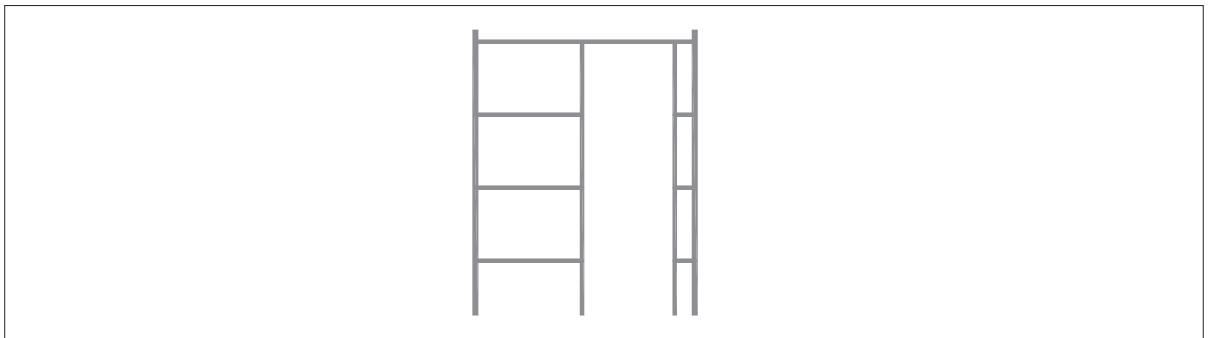
component which is a prefabricated framework and which is used to form the end of a bay in a prefabricated tower scaffold

NOTE [Figure 6](#) shows examples of end frames where passage is prevented.

Figure 6 — End frame**3.1.12.4.1 walk through end frame**

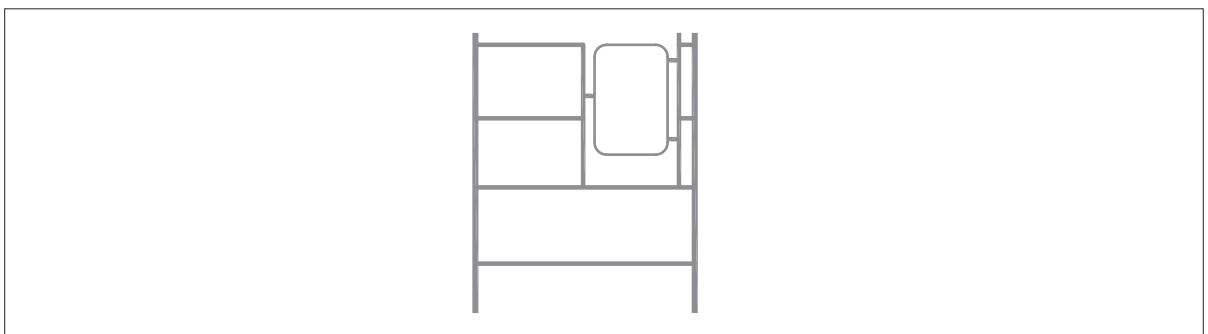
type of end frame which provides passage through the end of a bay in a prefabricated tower scaffold at ground or intermediate platform level

NOTE An example of a walk through end frame can be seen in [Figure 7](#).

Figure 7 — Walk through end frame**3.1.12.4.2 step through end frame**

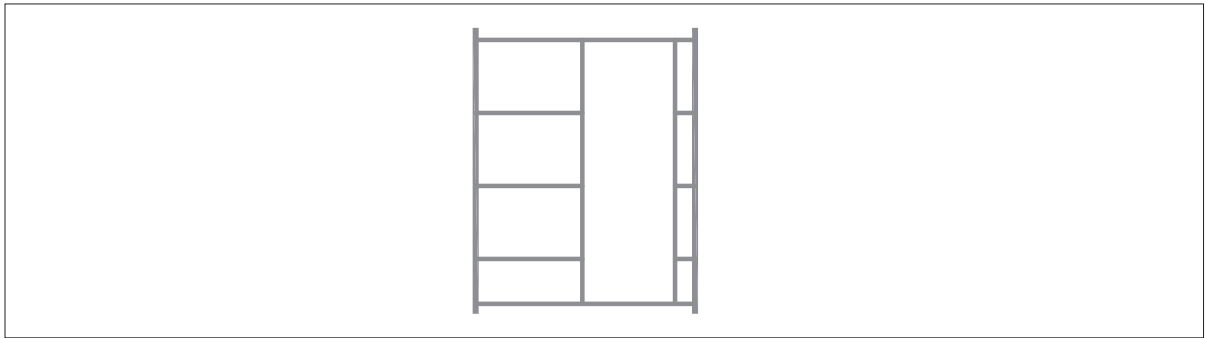
type of end frame which provides passage through the end of a bay in a prefabricated tower scaffold at the uppermost platform level

NOTE An example of a step through end frame can be seen in [Figure 8](#).

Figure 8 — Step through end frame**3.1.12.4.3 portal end frame**

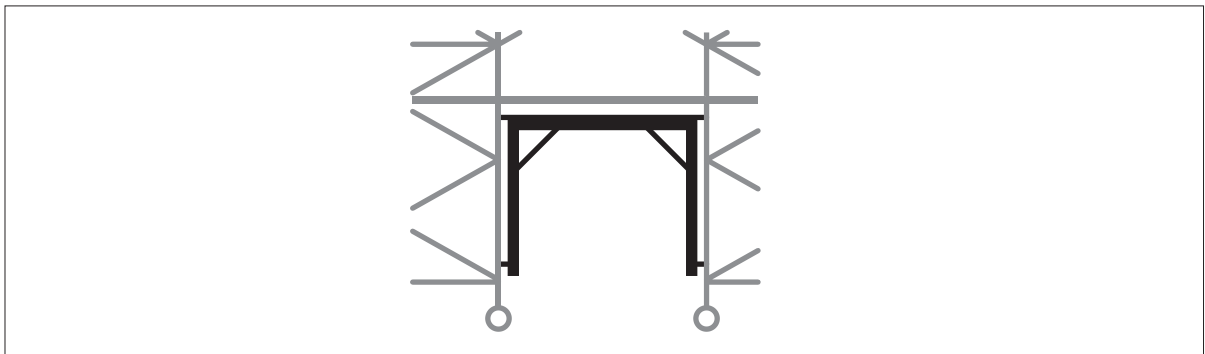
type of end frame with an aperture which provides passage through the end of a bay in a prefabricated tower scaffold

NOTE An example of a portal end frame can be seen in [Figure 9](#).

Figure 9 — Portal end frame**3.1.12.5 high clearance frame**

component which is normally installed at the base of a prefabricated tower scaffold, connecting the end frames, and which provides passage or to span obstructions

NOTE High clearance frames are also known as goalpost frames. An example can be seen in [Figure 10](#).

Figure 10 — High clearance frame**3.1.12.6 platform unit**

prefabricated unit which forms the platform or part of the platform of the prefabricated tower scaffolds

[SOURCE: BS EN 1004-1:2020, 3.5]

3.1.13 prefabricated tower scaffold standard configurations**3.1.13.1 cantilever tower scaffold**

prefabricated tower scaffold with one or more cantilever platforms

NOTE Examples of cantilever tower scaffolds can be seen in [Figure 11](#).

Figure 11 — Cantilever tower scaffold