

BS 5975:2008+A1:2011



BSI Standards Publication

Code of practice for temporary works procedures and the permissible stress design of falsework

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Contents

Foreword v

Section 1: General 1

- 1 Scope 1
- 2 Normative references 1
- 3 Terms and definitions 3
- 4 Abbreviations and symbols 7
- 5 Legislation 11

Section 2: Procedural control of temporary works 21

- 6 Procedures 21
- 7 Appointment of the temporary works co-ordinator and the temporary works supervisor 24
- 8 Design brief 27
- 9 Design 29
- 10 Co-ordination and supervision of work on site 31
- 11 Checking on site 34
- 12 Alterations 34
- 13 Loading (bringing) the temporary works into service 34
- 14 Dismantling 35

Section 3: Falsework 36

- 15 General 36
- 16 Materials 36
- 17 Loads applied to falsework 39
- 18 Foundations and ground conditions 85
- 19 Design of falsework 107
- 20 Work on site 137

Annexes

- Annex A (normative) Permissible stresses and modulus of elasticity for steel grades generally used in falsework 148
- Annex B (normative) Properties of components in tube and coupled falsework 152
- Annex C (normative) Initial testing, quality control and inspection of falsework equipment 158
- Annex D (normative) Data on material properties 160
- Annex E (normative) Wave forces 164
- Annex F (normative) Site investigations for foundations for falseworks 167
- Annex G (informative) Examples of design brief contents 169
- Annex H (informative) Forces from concrete on sloping soffits 171
- Annex J (normative) Design of steel beams at points of reaction or concentrated loads 176
- Annex K (normative) Effective lengths of steel members in compression 183
- Annex L (informative) Wind calculations for falsework 191
- Annex M (normative) Shielding factor η for unclad falsework 205
- Bibliography 207
- Index 211

List of figures

- Figure 1 – Shear stress on a timber beam of rectangular cross-section 45
- Figure 2 – Safe working loads for BS 4074:1982 props erected 1.5° out-of-plumb 56

- Figure 3 – Safe working load for BS EN 1065:1999 props erected 1° maximum out-of-plumb and with up to 10 mm maximum eccentricity of loading 57
- Figure 4 – Fundamental basic wind velocity $v_{b,map}$ (in m/s) 66
- Figure 5 – Topography factor T_{wind} diagram 67
- Figure 6 – Displacement height diagram 69
- Figure 7 – Town, country and sea 70
- Figure 8 – Wind on soffit parallel to secondary bearers 74
- Figure 9 – Wind on soffit parallel to primary bearers 75
- Figure 10 – Wind on two edge forms 76
- Figure 11 – Shelter factor 77
- Figure 12 – Wind on more than two edge forms 77
- Figure 13 – Wind loading – Combined formwork and unclad falsework (upper limit) 79
- Figure 14 – Individual support members 96
- Figure 15 – Panels to facilitate the erection of individual prop systems (elevation) 97
- Figure 16 – Individual fully braced tower 97
- Figure 17 – Proprietary system, partially braced by concrete panels 97
- Figure 18 – Fully braced falsework system 98
- Figure 19 – Free-standing structure 103
- Figure 20 – Top-restrained structure 104
- Figure 21 – Plate action (plan view) 105
- Figure 22 – Restraint provided on one side of the plate (plan view) 105
- Figure 23 – Restraint provided on two perpendicular sides of the plate (plan view) 106
- Figure 24 – Restraint provided on two parallel (opposite) sides of the plate (plan view) 106
- Figure 25 – Restraint provided on three sides of the plate (plan view) 106
- Figure 26 – Restraint provided on four sides of the plate (plan view) 107
- Figure 27 – Restraint provided by four permanent works columns (plan view) 107
- Figure 28 – Restraint provided by two permanent works columns (plan view) 107
- Figure 29 – Concrete pressures applied and the subsequent rotational forces induced (typical falsework plan) 108
- Figure 30 – Effects of eccentricity and sway on top-restrained structures 110
- Figure 31 – Effects of eccentricity and sway on freestanding structures 110
- Figure 32 – Effects of F_H on individual towers 111
- Figure 33 – Typical, free-standing, fully braced scaffolding (elevation) 116
- Figure 34 – Typical, top-restrained, fully braced scaffolding (elevation) 117
- Figure 35 – Member stability check for top-restrained systems (elevation) 118
- Figure 36 – Considerations for partially braced frames 119
- Figure 37 – Member stability check for free-standing systems (elevation) 120
- Figure 38 – Considerations for free-standing partially braced frames 120
- Figure 39 – Effective lengths in tube and coupler falsework 122
- Figure 40 – Lateral stability check for top-restrained structures 123

- Figure 41 – Lateral stability check for free-standing structures 124
 Figure 42 – Working space and stability during erection, loading and dismantling 125
 Figure 43 – Lateral restraint provided by friction 127
 Figure 44 – Base detail on slopes 132
 Figure 45 – Suggested bracing arrangement for falsework erected on beams or girders 134
 Figure 46 – Maximum deviation of load path 136
 Figure 47 – Points of measurement of tolerances for purposely fabricated steelwork 141
 Figure 48 – Skew lapping of primary beams to minimize eccentricity of load 142
 Figure A.1 – I beam dimensions 149
 Figure E.1 – Non-breaking waves – Section diagrams 166
 Figure H.1 – Distribution of forces on sloping soffits – Level surface, sloping base 171
 Figure H.2 – Distribution of forces on sloping soffits – Sloping surface and sloping base 172
 Figure H.3 – Distribution of forces on sloping soffits – All surfaces sloping and with top formwork 172
 Figure H.4 – Freestanding falsework 175
 Figure H.5 – Formwork connected to an existing structure 174
 Figure H.6 – Arch falsework 175
 Figure J.1 – Stress dispersion – Buckling 179
 Figure J.2 – Stress dispersion – Bearing 180
 Figure K.1 – Positional restraint of steel members in axial compression 184
 Figure K.2 – Girder restraint (1) – Plan view 190
 Figure K.3 – Girder restraint (2) – Plan view 190
 Figure L.1 – Orography factor, c_o 200

List of tables

- Table 1 – Categories of design check 31
 Table 2 – Basic stresses and moduli of elasticity for the wet condition 39
 Table 3 – Softwood species which satisfy strength classes in accordance with BS 4978 40
 Table 4 – North American softwood species and grade combinations which satisfy strength classes in accordance with national lumber grades authority (NLGA) and national grading rules for dimension lumber (NGRDL) joist and plank rules 40
 Table 5 – Hardwoods which satisfy the strength classes graded to BS 5756:2007 40
 Table 6 – Preferred target sizes and actual dimensions for constructional sawn softwood timber 42
 Table 7 – Modification factor K_3 for duration of load on falsework 43
 Table 8 – Modification factor K_4 for bearing stress 43
 Table 9 – Maximum depth-to-breadth ratios 44
 Table 10 – Depth modification factor K_7 for solid timbers less than 300 mm depth 46
 Table 11 – Permissible stresses and moduli of elasticity for general falsework applications 47
 Table 12 – Permissible stresses and moduli of elasticity for load-sharing falsework applications 47
 Table 13 – Commercial grade timber suitable to produce mainly class C16 timber 48
 Table 14 – Adjustable steel prop heights 55
 Table 15 – Combined exposure factor, $c_e(z)c_{e,T}$ 68

Table 16 – Force coefficients, c_f , for falsework	73
Table 17 – Presumed allowable bearing pressure under vertical static loading	86
Table 18 – Identification and description of soils	90
Table 19 – Ground water level modification factor	92
Table 20 – Example of percentage of load transfer for less than 350 mm flat slabs	112
Table 21 – Roles and responsibilities of temporary and permanent works designers	113
Table 22 – Requirements for stability checks in top-restrained falsework	114
Table 23 – Requirements for stability checks in free-standing structures	115
Table 24 – Recommended values of coefficient of static friction μ	128
Table A.1 – Permissible bending stress in compressive member, p_{bc} , for beams	150
Table A.2 – Permissible axial compressive stress, p_c , on cross-section	151
Table B.1 – Section properties of scaffold tube	154
Table B.2 – Safe axial loads in compression for Type 4 steel scaffold tubes manufactured in accordance with BS EN 139:2001	155
Table B.3 – Safe axial loads in compression for Type 4 steel scaffold tubes manufactured in accordance with BS 1139-1:1982	156
Table B.4 – Safe working loads for individual couplers and fittings	157
Table D.1 – Modulus of elasticity for concrete	160
Table D.2 – Density of reinforced concrete	161
Table D.3 – Density ranges for lightweight concretes	161
Table D.4 – Masses of scaffolding material	162
Table D.5 – Masses and densities of men and materials	162
Table D.6 – Masses of corrugated steel sheeting	163
Table J.1 – Effective lengths and slenderness ratios of an unstiffened web acting as a column	178
Table J.2 – Effective lengths of load bearings	182
Table K.1 – Effective lengths of struts	185
Table K.2 – Effective lengths for beams without intermediate lateral restraint	186
Table K.3 – Effective length for cantilever beams without intermediate lateral restraint	189
Table L.1 – Source of the basic wind equations	192
Table L.2 – Values of direction factor, c_{dir}	194
Table L.3 – Combined roughness factor, $c_r(z)c_{r,T}$	199
Table L.4 – Turbulence intensity, $I_v(z)_{flat}$	199
Table M.1 – Shielding factor, η	206

Summary of pages

This document comprises a front cover, an inside front cover, pages i to viii, pages 1 to 216, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI and came into effect on 31 December 2008. It was prepared by Subcommittee B/514/26, *Falsework* on behalf of Technical Committee B/514, *Access and support equipment*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 5975:2008, which is withdrawn.

Information about this document

The start and finish of text introduced or altered by Amendment No. 1 is indicated in the text by tags **A1** and **A1**.

A report on falsework by the Joint Committee of the Institution of Structural Engineers and the Concrete Society [1], was published in 1971, following a number of significant collapses and an apparent lack of authoritative guidance.

A further significant collapse of falsework (over the river Loddon, near Reading) occurred in October 1973, resulting directly in the publication of the Bragg Report [2] in 1973/74.

This code of practice was first published in 1982. It reflected the recommendations of the Bragg Report [2] and used, as the main reference document during the drafting stages, the report on falsework by the Joint Committee of the Institution of Structural Engineers and the Concrete Society [1].

It is believed that when first published, no previous standard or code referring to falsework was known to exist anywhere in the world.

The standard drew together all those aspects that need to be considered when preparing a falsework design using permissible stress methods, and in so doing included recommendations for materials, design and work on site. Because the success of falsework is closely tied up with its management, this code described procedures as well as technical aspects. The standard provided guidance on the accuracy of construction required in order to be able to adopt the recommended design approaches.

Recommendations were given on the actions that ought to be taken and possible ways of allocating the duties to individuals. The Bragg Report [2] recommended that the duty of ensuring that all the relevant procedures and checks are carried out be given to one individual in the construction organisation, such an individual being known as the "temporary works co-ordinator". BS 5975:1982 endorsed such action, but adopted the narrower term "falsework co-ordinator", because the procedures section of the code did not consider the other activities covered by the general term temporary works, such as scaffolding and excavations. This edition, incorporating procedures for all temporary works, has reverted to the term "temporary works co-ordinator". A full description of the duties of the temporary works co-ordinator is included. **A1** This standard re-emphasizes the Bragg Report [2] recommendations that the temporary works co-ordinator be an individual employed by the construction organization now known as the principal contractor, or

on projects which are not notifiable under CDM 2007 [8], the main contractor. This principle is similarly preferred for the appointment of any temporary works supervisor. ^(A1)

A second edition of the standard was published in 1996.

The European standard on falsework, BS EN 12812:2004 was published in 2004 and exists in parallel with this standard. It specifies performance requirements for the design of falsework in accordance with one of three classes: A, B1 and B2. Limit state design methods are specified for design classes B1 and B2. It does not provide guidance for the structural design of Class A.

BS EN 12812:2004 does not provide guidance on procedures necessary for the successful management of work on site. The recommendations of the Advisory Committee on Falsework (the Bragg Report [2]) in respect of the falsework co-ordinator have not been included in it.

The foreword of this standard was amended in 2004, immediately following the publication BS EN 12812:2004.

^(A1) Subsequent to the publication of BS EN 12812:2004, the drafting committee has taken the opportunity to update the majority of this standard, retaining the principles of permissible stress design. The principal changes introduced by this amendment are as follows.

- The term temporary works co-ordinator (TWC) has been adopted to reflect the need for procedural controls of all temporary works and to recognize that the majority of contractors already control temporary works in this manner.
- Compliance with the Construction (Design and Management) Regulations 2007 (COM), [3], [8] has been incorporated, particularly in respect to the interface between the design of permanent works and the design of temporary works.
- This amendment to BS 5975 introduces wind loading to BS EN 1991-1-4:2005+A1 and the UK National Annex (NA). The background information in PD 6688-1-4:2009 has also informed this revision.
- Information on the wind load on formwork attached to falsework, together with the effects of shielding of falsework members in unclad structures, has been retained from the previous edition of this code.
- The section for the design of falsework has been substantially rewritten to bring it up-to-date with current practice and materials. It now defines the conditions for top restrained and free standing falsework and the dependency of the former on the stability of the permanent works and plate action of the formwork.

Although the wind code BS EN 1991-1-4:2005+A1 is widely applicable, its application in accordance with NA to BS EN 1991-1-4:2005+A1 restricts its use to the UK. For other locations covered by BS EN 1991-1-4:2005+A1, refer to the relevant National Annex. For locations outside of those covered by BS EN 1991-1-4:2005+A1 local design codes are to be used to calculate the peak velocity pressure.

Users of this standard are reminded that it might be necessary for them to appraise third parties with whom they are in contractual relations of certain provisions in the code. ^(A1)

Use of this document

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this British Standard is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

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

Contractual and legal considerations

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

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

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Section 1: General

1 Scope

This British Standard gives recommendations and guidance on the procedural controls to be applied to all aspects of temporary works in the construction industry. It also includes guidance on design, specification, construction, use and dismantling of falsework. This standard gives guidance on permissible stress design of falsework. This guidance is also applicable to the design of what is termed class A falsework¹⁾ in BS EN 12812:2004, the design of which is specifically excluded from BS EN 12812:2004.

Section 2 gives recommendations for the procedures required to ensure that temporary works are conceived, designed, specified, constructed, used and dismantled all in a safe and controlled manner.

Section 3 covers the design of temporary works and in particular the design of falsework and relevant formwork. In addition Section 3 covers: materials including material factors; loads and load factors; design of falsework, including both proprietary equipment and traditional scaffolding solutions; wind loading (reference to temporary and permanent stability) and reference to other British Standards for the design of structural steelwork, reinforced concrete and excavation support.

The structural design element in this standard is additional information necessary for the structural design of falsework. It can be used in conjunction with existing structural standards.

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 449-2:1969, *Specification for the use of structural steel in building – Part 2: Metric units*

BS 648, *Schedule of weights of building materials*

BS 1139-1, *Metal scaffolding – Part 1: Tubes – Specification for tubes used in scaffolding (superseded)*

BS 1881-115, *Testing concrete – Part 115: Specification for compression testing machines for concrete*

BS 1881-116, *Testing concrete – Part 116: Method for determination of compressive strength of concrete cubes*

BS 1881-117, *Testing concrete – Part 117: Method for determination of tensile splitting strength*

-
- ¹⁾ According to BS EN 12812, design class A is only to be adopted where:
- slabs have a cross-sectional area not exceeding 0.3 m² per metre width of slab;
 - beams have a cross-sectional area not exceeding 0.5 m²;
 - the clear span of beams and slabs does not exceed 6.0 m;
 - the height to the underside of the permanent structure does not exceed 3.5 m.