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

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Contents

	Page
Foreword	vii
Introduction	1
Section 1: General	2
1 Scope	2
2 Normative references	2
3 Terms and definitions	4
4 Abbreviations and symbols	9
5 Overview of temporary works procedures and training	13
5.1 Overview of procedures	13
<i>Figure 1 — Typical contractual interfaces between parties on a project</i>	17
<i>Figure 2 — Lines of responsibilities where a single contractor or a principal contractor (PC) is co-ordinating the temporary works</i>	19
<i>Figure 3 — Lines of responsibility where either a principal contractor's (PC) appointed sub-contractor or a client's contractor co-ordinate their own temporary works</i>	21
<i>Figure 4 — Schematic representation of relationships between principal contractor and contractor (client appointed or sub-contractor) including PC's TWC and contractor's TWC</i>	22
5.2 Training	23
Section 2: Procedural control of temporary works	25
6 Procedures	25
6.1 Introduction to procedural control	25
<i>Table 1 — Implementation risk classes for temporary works and examples of mitigation measures</i>	28
6.2 Temporary works register	29
7 Clients' procedures	30
7.1 General (Commercial/public clients)	30
7.2 Clients appointing contractors other than PCs	31
7.3 Client's DI	31
7.4 Domestic clients	32
8 Designers' procedures	33
8.1 General	33
8.2 Designers' DI	34
8.3 Permanent works designers	34
8.4 Temporary works designers	35
8.5 Principal designers	35
9 Contractors' procedures	36
9.1 Organizational interfaces	36
9.2 Contractors' DI	37
9.3 Responsibilities	38
9.4 Principal contractor	40
9.5 Contractors other than PC	41
9.6 Third-party employed contractor	42
10 Supplier/manufacturer procedures	42
10.1 Suppliers of temporary works equipment	42
10.2 Suppliers' DI	42
10.3 Suppliers' procedures	43
10.4 Verification of design information	43
10.5 Provision of information	43
10.6 Provision of design data	43
10.7 Provision of information for the safe use of equipment	44

10.8	Standard solutions	44
11	Temporary works co-ordinator	44
11.1	General	44
11.2	The PC's TWC	44
11.3	The TWC (other than the PC's TWC)	47
12	Temporary works supervisor	50
12.1	General	50
12.2	Role of the TWS	50
12.3	Duties of the TWS	51
13	Design of temporary works	51
13.1	General	51
13.2	Design brief	52
13.3	Design guidance	53
13.4	Choice of temporary works	55
13.5	Selection of materials and components	55
13.6	Design output	55
13.7	Design check	56
	<i>Table 2 — Categories of design check in temporary works</i>	57
13.8	Resolution of queries raised by the design checker	58
13.9	Alterations	59
13.10	Standard solutions	59
14	Site considerations	60
14.1	Co-ordination, supervision and checking of work on site	60
14.2	Loading and unloading temporary works	61
14.3	Dismantling	62
	Section 3: Falsework	63
15	General	63
16	Materials	63
16.1	General considerations	63
16.2	Testing and inspection	63
16.3	Steelwork (other than scaffold tube)	64
16.4	Timber	65
	<i>Table 3 — Basic stresses and moduli of elasticity for the wet condition</i>	66
	<i>Table 4 — Softwood species which satisfy strength classes in accordance with BS 4978</i>	66
	<i>Table 5 — 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</i>	67
	<i>Table 6 — Hardwoods which satisfy the strength classes graded to BS 5756:2007</i>	67
	<i>Table 7 — Preferred target sizes and actual dimensions for constructional sawn softwood timber</i>	68
	<i>Table 8 — Modification factor K_3 for duration of load on falsework</i>	69
	<i>Table 9 — Modification factor K_4 for bearing stress</i>	70
	<i>Table 10 — Maximum depth-to-breadth ratios</i>	70
	<i>Figure 5 — Shear stress on a timber beam of rectangular cross-section</i>	71
	<i>Table 11 — Depth modification factor K_7 for solid timbers less than 300 mm depth</i>	72
	<i>Table 12 — Permissible stresses and moduli of elasticity for general falsework applications</i>	73
	<i>Table 13 — Permissible stresses and moduli of elasticity for load-sharing falsework applications</i>	73
	<i>Table 14 — Commercial grade timber suitable to produce mainly class C16 timber</i>	74
16.5	Concrete and concrete components	74
16.6	Brickwork and blockwork	76
16.7	Other materials	76

16.8	Steel scaffold tubes, couplers and other fittings	77
16.9	Manufactured components for falsework	79
	<i>Table 15 — Adjustable steel prop heights</i>	80
	<i>Figure 6 — Safe working loads for BS 4074:1982 props erected 1.5° out-of-plumb</i>	81
	<i>Figure 7 — Safe working load for BS 1065:1999 props erected 1° maximum out-of-plumb and with up to 10 mm maximum eccentricity of loading</i>	82
17	Loads applied to falsework	83
17.1	General	83
17.2	Weights of materials	84
17.3	Self-weights	84
17.4	Imposed loads	84
17.5	Environmental loads	87
	<i>Figure 8 — Fundamental basic wind velocity $v_{b,map}$ (in m/s)</i>	91
	<i>Figure 9 — Topography factor T_{wind} diagram</i>	92
	<i>Table 16 — Combined exposure factor, $c_e(z)c_{e,T}$</i>	93
	<i>Figure 10 — Displacement height diagram</i>	94
	<i>Figure 11 — Town, country and sea</i>	94
	<i>Table 17 — Force coefficients c_f for falsework</i>	97
	<i>Figure 12 — Wind on soffit parallel to secondary bearers</i>	99
	<i>Figure 13 — Wind on soffit parallel to primary bearers</i>	99
	<i>Figure 14 — Wind on two edge forms</i>	101
	<i>Figure 15 — Shelter factor</i>	101
	<i>Figure 16 — Wind on more than two edge forms</i>	102
	<i>Figure 17 — Wind loading – Combined formwork and unclad falsework (upper limit)</i>	103
18	Foundations and ground conditions	110
18.1	General	110
18.2	Site investigation for falsework foundations	110
	<i>Table 18 — Presumed allowable bearing pressure under vertical static loading</i>	111
18.3	Testing of soils	112
	<i>Table 19 — Identification and description of soils</i>	113
18.4	Allowable bearing pressures	113
18.5	Modification factors applied to presumed bearing pressures	114
	<i>Table 20 — Ground water level modification factor</i>	115
18.6	Simple foundations on sands and gravels	115
18.7	Simple foundations on cohesive soils	115
18.8	Heavy vibrations	115
18.9	Fill material	115
18.10	Piles	116
18.11	Protection of the foundation area	116
19	Design of falsework	116
19.1	Preamble to design	116
	<i>Figure 18 — Individual support members</i>	118
	<i>Figure 19 — Panels to facilitate the erection of individual prop systems (elevation)</i>	119
	<i>Figure 20 — Individual fully braced tower</i>	119
	<i>Figure 21 — Proprietary system, partially braced by discrete panels</i>	119
	<i>Figure 22 — Fully braced falsework system</i>	120
19.2	Forces applied to falsework	121
19.3	Analysis of the structure	123
	<i>Figure 23 — Free-standing structure</i>	125
	<i>Figure 24 — Top-restrained structure</i>	125

	<i>Figure 25 — Plate action (plan view)</i>	126
	<i>Figure 26 — Restraint provided on one side of the plate (plan view)</i>	127
	<i>Figure 27 — Restraint provided on two perpendicular sides of the plate (plan view)</i>	127
	<i>Figure 28 — Restraint provided on two parallel (opposite) sides of the plate (plan view)</i>	127
	<i>Figure 29 — Restraint provided on three sides of the plate (plan view)</i>	128
	<i>Figure 30 — Restraint provided on four sides of the plate (plan view)</i>	128
	<i>Figure 31 — Restraint provided by four permanent works columns (plan view)</i>	128
	<i>Figure 32 — Restraint provided by two permanent works columns (plan view)</i>	128
	<i>Figure 33 — Concrete pressures applied and the subsequent rotational forces induced (typical falsework plan)</i>	129
	<i>Figure 34 — Effects of eccentricity and sway on top-restrained structures</i>	131
	<i>Figure 35 — Effects of eccentricity and sway on freestanding structures</i>	131
	<i>Figure 36 — Effects of F_H on individual towers</i>	132
	<i>Table 21 — Example of percentage of load transfer for less than 350 mm flat slabs</i>	133
19.4	Design	133
	<i>Table 22 — Roles and responsibilities of temporary and permanent works designers</i>	134
	<i>Table 23 — Requirements for stability checks in top-restrained falsework</i>	135
	<i>Table 24 — Requirements for stability checks in free-standing structures</i>	136
	<i>Figure 37 — Typical, free-standing, fully braced scaffolding (elevation)</i>	138
	<i>Figure 38 — Typical, top-restrained, fully braced scaffolding (elevation)</i>	138
	<i>Figure 39 — Member stability check for top-restrained systems (elevation)</i>	140
	<i>Figure 40 — Considerations for partially braced frames</i>	140
	<i>Figure 41 — Member stability check for free-standing systems (elevation)</i>	141
	<i>Figure 42 — Considerations for free-standing partially braced frames</i>	142
	<i>Figure 43 — Effective lengths in tube and coupler falsework</i>	143
	<i>Figure 44 — Lateral stability check for top-restrained structures</i>	144
	<i>Figure 45 — Lateral stability check for free-standing structures</i>	145
	<i>Figure 46 — Working space and stability during erection, loading and dismantling</i>	146
	<i>Figure 47 — Lateral restraint provided by friction</i>	148
	<i>Table 25 — Recommended values of coefficient static friction μ</i>	149
19.5	Beams and lattice girders	150
19.6	Foundations	150
	<i>Figure 48 — Base detail on slopes</i>	153
19.7	Additional considerations affecting certain design solutions	154
	<i>Figure 49 — Suggested bracing arrangement for falsework erected on beams or girders</i>	155
	<i>Figure 50 — Maximum deviation of load path</i>	157
20	Work on site	158
20.1	Introduction	158
20.2	Specific design instructions	158
20.3	General workmanship	158
	<i>Figure 51 — Points of measurement of tolerances for purposely fabricated steelwork</i>	161
	<i>Figure 52 — Skew lapping of primary beams to minimize eccentricity of load</i>	162
20.4	Checking falsework	163
20.5	Application of loads to falsework	165
20.6	Dismantling	165
20.7	Maintenance, inspection and identification of materials	166
Annex A	(normative) Permissible stresses and modulus of elasticity for steel grades generally used in falsework	167
	<i>Figure A.1 — I beam dimensions</i>	168

	<i>Table A.1 — Permissible bending stress in compressive members, p_{bc} for beams</i>	169
	<i>Table A.2 — Permissible axial compressive stress, p_c on cross-section</i>	170
Annex B	(normative) Properties of components in tube and coupler falsework	170
	<i>Table B.1 — Section properties of scaffold tube</i>	173
	<i>Table B.2 — Safe axial loads in compression for Type 4 steel scaffold tubes manufactured in accordance with BS EN 39:2001</i>	174
	<i>Table B.3 — Safe axial loads in compression for Type 4 steel scaffold tubes manufactured in accordance with BS 1139-1:1982</i>	175
	<i>Table B.4 — Safe working loads for individual couplers and fittings</i>	176
Annex C	(normative) Initial testing, quality control and inspection of falsework equipment	176
Annex D	(normative) Data on material properties	178
	<i>Table D.1 — Modulus of elasticity for concrete</i>	178
	<i>Table D.2 — Density of reinforced concrete</i>	179
	<i>Table D.3 — Density ranges for lightweight concretes</i>	179
	<i>Table D.4 — Masses of scaffolding material</i>	180
	<i>Table D.5 — Masses and densities of men and materials</i>	180
	<i>Table D.6 — Masses of corrugated steel sheeting</i>	180
Annex E	(normative) Wave forces	181
	<i>Figure E.1 — Non-breaking waves – Section diagrams</i>	183
Annex F	(normative) Site investigations for foundations for falseworks	183
Annex G	(informative) Examples of design brief contents	185
Annex H	(informative) Forces from concrete on sloping soffits	187
	<i>Figure H.1 — Distribution of forces on sloping soffits – Level surface, sloping base</i>	187
	<i>Figure H.2 — Distribution of forces on sloping soffits – Sloping surface and sloping base</i>	188
	<i>Figure H.3 — Distribution of forces on sloping soffits – All surfaces sloping and with top formwork</i>	188
	<i>Figure H.4 — Freestanding falsework</i>	189
	<i>Figure H.5 — Formwork connected to an existing structure</i>	190
	<i>Figure H.6 — Arch falsework</i>	190
Annex I	(informative) Blank	190
Annex J	(normative) Design of steel beams at points of reaction or concentrated loads	191
	<i>Table J.1 — Effective lengths and slenderness ratios of an unstiffened web acting as a column</i>	193
	<i>Figure J.1 — Stress dispersion – Buckling</i>	194
	<i>Figure J.2 — Stress dispersion – Bearing</i>	195
	<i>Table J.2 — Effective lengths of load bearings</i>	197
Annex K	(normative) Effective lengths of steel members in compression	197
	<i>Figure K.1 — Positional restraint of steel members in axial compression</i>	198
	<i>Table K.1 — Effective lengths of struts</i>	199
	<i>Table K.2 — Effective lengths for beams without intermediate lateral restraint</i>	200
	<i>Table K.3 — Effective lengths for cantilever beams without intermediate lateral restraint</i>	202
	<i>Figure K.2 — Girder restraint (1) – Plan view</i>	203
	<i>Figure K.3 — Girder restraint (2) – Plan view</i>	204
Annex L	(informative) Wind calculations for falsework	204
	<i>Table L.1 — Source of the basic wind equations</i>	205
	<i>Table L.2 — Values of direction factor, c_{dir}</i>	207
	<i>Table L.3 — Combined roughness factor, $c_r(z)c_{r,T}$</i>	212
	<i>Table L.4 — Turbulence intensity, $I_v(z)_{flat}$</i>	213

	<i>Figure L.1 — Orography factor, c_o</i>	214
Annex M	(normative) Shielding factor η for unclad falsework	218
	<i>Table M.1 — Shielding factor, η</i>	218
	Bibliography	220
	Index	224

Summary of pages

This document comprises a front cover, and inside front cover, pages i to viii, pages 1 to 238, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 May 2019. It was prepared by Subcommittee B/514/26, *Falsework*, under the authority of Technical Committee B/514, *Access and support equipment*. A list of organizations represented on these committees can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 5975:2008+A1:2011, which is withdrawn.

Information about this document

This is a revision of [Section 1](#) and [Section 2](#) of this British Standard. [Section 3](#) on the permissible stress design of falsework remains unchanged. The following principal changes have been introduced in this revision.

- BS 5975 was always intended to be used by all organizations involved in temporary works and provided details of the procedure for contractors to adopt, but lacked detail about the procedures for clients, permanent works designers and temporary works designers to adopt. The detail on these procedures is now included.
- The text has been updated to take account of the Construction (Design and Management) Regulations 2015 (CDM) [1], particularly in respect to the interface between the design of permanent works and the design of temporary works.
- The terms and definitions have been updated.
- The principal contractor's temporary works co-ordinator (PC's TWC) retains overall responsibility for the temporary works on the site, but where another contractor manages their own temporary works within that site, they have their own procedures and appoint their own TWC. The committee understood that some organizations were using the temporary works supervisor (TWS) of sub-contractors to act as de-facto TWCs but this is incorrect and the text has been changed to reflect this.
- [Section 2](#) has been updated to include recommendations for designers on the partial factors to be used in limit state design of temporary works and on design considerations to be applied for all temporary works design.
- Although a full revision of [Section 3](#) has not been undertaken at this point, an important safety point was brought to the committee's attention and a relevant note has been added in [16.3.5](#).

The following matters, from the partial revision in 2011, were re-considered and it was confirmed they were to be retained in this revision.

The European standard on falsework, BS EN 12812, exists in parallel with this British 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. It is recommended that [Section 3](#) is used to provide guidance for Class A falsework.

BS EN 12812 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 temporary works co-ordinator have not been included in BS EN 12812.

Subsequent to the revision of BS EN 12812, this British Standard was updated in 2011, to BS 5975:2008+A1:2011, and the principal changes introduced by that amendment were as follows.

- The term temporary works co-ordinator (TWC) was 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.
- Information on the wind loading on falsework and attached formwork, together with the effects of shielding of falsework members in unclad structures, in accordance with BS EN 1991-1-4:2005+A1 and the UK National Annex (NA) was retained.
- The section for the design of falsework was substantially rewritten, in BS 5975:2008+A1:2011, to bring it up-to-date with current practice and materials. It 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 BS EN 1991-1-4:2005+A1:2010 is widely applicable, its application in accordance with its National Annex (NA to BS EN 1991-1-4:2005+A1:2010) restricts its use to the UK. For other locations covered by BS EN 1991-1-4, users can refer to the relevant National Annex. For locations outside of those covered by BS EN 1991-1-4, local design codes can be used to calculate the peak velocity pressure.

Users of this British Standard are reminded that it might be necessary for them to appraise third parties, with whom they are not in contractual relations, of certain provisions in this code of practice.

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.

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of 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.

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 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.

Introduction

This British Standard 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 Concrete Society and the Institution of Structural Engineers [3]. These two reports were published in the 1970s following a number of significant collapses and an apparent lack of authoritative guidance.

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 temporary works is closely tied up with its management, this British Standard describes procedures as well as technical aspects. The standard provides guidance on the accuracy of construction required in order to be able to adopt the recommended design approaches.

Recommendations are 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 organization, 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 standard did not consider the other activities covered by the general term temporary works, such as scaffolding and excavations. The 2008 edition, incorporating procedures for all temporary works, reverted to the term “temporary works co-ordinator”.

At the time of publication of the Bragg Report [2] the construction industry was very different from the industry we know today. Health and safety legislation was just beginning to bring improvements on sites. There was little sub-contracting of construction work and most trades were carried out by the main contractor's operatives.

Today very little construction work is carried out by the main contractor, now known as the principal contractor (PC), and in relation to health and safety legislation, the Construction (Design and Management) Regulations 2015 (CDM) [1] recognize the various contractors and sub-contractors which might be on site. The CDM Regulations require whoever appoints the PC, contractor or sub-contractor to check that the organization is competent to do the work. The organizations which are appointed also need to plan, manage and monitor their own work.

This philosophy was taken into account during this revision of BS 5975, to keep it aligned with health and safety legislation, and allow the contractors and sub-contractors to plan, manage and monitor their own work if they have the skills, knowledge, experience and organizational capability. The PC has overall responsibility for work on site and in keeping with the recommendations in the Bragg Report [2], the PC's temporary works co-ordinator (PC's TWC) has overall responsibility for all temporary works on the site, including those of contractors appointed by the client. With this in mind, procedures specific to other organizations, such as clients, designers, contractors and sub-contractors, and other roles have been introduced whilst ensuring responsibility is traceable from the PC's TWC to the PC's temporary works DI to the PC's board of directors.

The Bragg Report [2] made recommendations about courses on civil engineering, which B/514/26, the committee responsible for this British Standard, believe to be as relevant today as when they were written. This standard therefore endorses the Bragg Report recommendations.

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 all falsework. The guidance also applies to the design of class A falsework¹ defined in BS EN 12812, the design of which is specifically excluded from BS EN 12812.

[Section 1](#) gives recommendations in relation to training and education.

[Section 2](#) gives recommendations for procedures to ensure that temporary works are conceived, designed, specified, constructed, used and dismantled all in a safe and controlled manner suitable for all construction projects. These procedures include clauses relating to all roles involved in temporary works: clients, permanent works designers, temporary works designers, contractors (including construction management organizations), suppliers and manufacturers.

Construction sites and methods adopted for controlling the temporary works vary. This British Standard recognizes that the extent of control measures required are greater on the larger or more complex projects, as can be encountered on major infrastructure projects, power stations, airports etc. Generally procedures are to be in accordance with this standard but additional client specific procedures might be required on major infrastructure projects.

[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. Although [Section 3](#) was written for permissible stress design, the design concepts and the service loads stated are applicable to limit state design. The loads, including wind loads, are the unfactored service loads and conform to both BS EN 1991-1-4 and BS EN 12812.

The structural design element in this British 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 documents are referred to in the text in such a way that some or all of their content constitutes provisions 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.²

BS 449-2:1969 (withdrawn), *Specification for the use of structural steel in building — Part 2: Metric units*

BS 648 (withdrawn), *Schedule of weights of building materials*

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

² As [Section 3](#) has not been updated as part of this revision, it refers to some standards which have now been withdrawn. These have been marked as such.