

FASET Bulletin GEN02 (Revision 6)

Temporary Works

Summary

This FASET Technical Bulletin (and supporting documentation) provides guidance on the management of temporary works in accordance with the recommendations made in BS 5975: 2019 *Code of practice for temporary works procedures and the permissible stress design of falsework* to:

- Clients
- Principal Contractors (PC)
- Contractors
- Temporary Works Coordinators (TWC), and
- FASET Members and their Temporary Work Supervisors (TWS)

Purpose

This Technical Bulletin should be used as the basis to manage temporary works to meet the requirements for construction work set out in the Construction (Design and Management) Regulations, the Work at Height Regulations, and the Provision and Use of Work Equipment Regulations.

Background

The nature of the work carried out by FASET members involves a significant amount of work that is 'temporary' and / or which has an element of 'temporary works' within its installation and use.

BS 5975: 2019 Clause 5.1.1.1 states "Temporary works can be described as providing an "engineered solution" that is used to support or protect either an existing structure or the permanent works during construction, or to support an item of plant or equipment, or the vertical sides or side-slopes of an excavation during construction operations on site or to provide access. It is used to control stability, strength, deflection, fatigue, geotechnical effects and hydraulic effects within defined limits." (BSI, 2019).

Examples of 'temporary works' installed by FASET members include, but are not limited to:

- safety netting
- edge protection
- demarcation systems
- stair-towers
- platform decking systems
- roof over netting systems
- soft landing systems
- tensioned access platforms

Management of Temporary Works

The correct design and execution of temporary works is an essential element of risk management.

BS 5975: 2019 provides recommendations and guidance on the procedural controls that should apply to all aspects of 'temporary works' during the design, specification, construction and

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dismantling phases of construction work.

Designated Individual (DI)

Any organisation involved in a project that has a requirement for temporary works should appoint a designated individual (DI) (see BS 5975: 2019, Clause 6.1.2.1). This includes FASET members.

The DI should be either a member of, or directly responsible to, a member of the organization's main board of directors.

They have both responsibility and authority for establishing and maintaining a procedure to control those aspects of temporary works (and associated risks) for which their organisation has responsibility (or which they can constrain or influence).

The company's temporary works procedure should be approved by the main board or a main board director.

Temporary Works Procedures

The Principal Contractor (PC), as defined by the CDM Regulations, should have in place effective arrangements for controlling risk arising from any temporary works.

Principal Contractor's Temporary Works Coordinator (PC's TWC)

The PC should appoint a Temporary Works Coordinator, known as the Principal Contractor's Temporary Works Coordinator (PC's TWC). They should be competent and have relevant up-to-date training and the necessary skills, knowledge and experience appropriate to the complexity of the project and anticipated temporary works.

Other contractors may appoint a Temporary Works Coordinator (TWC), but only where the PC has appointed them – after instigating appropriate checks - to manage and coordinate their own temporary works (see BS 5975: 2019, Figure 3).

Note: *this is **NOT** the envisaged course of action required of FASET member company (who tend to be well down the procurement supply chain).*

The PC's TWC (or other TWC) is your main point of contact for temporary works issues.

Temporary Works Coordinator (TWC)

It is the role of a **TWC** to (not exhaustive):

- Coordinate all temporary works activity
- Ensure a Temporary Works Register is established and maintained
- Ensure that a Design Brief has been prepared
- Ensure that the Design Brief is issued to the Temporary Work Designer(s)
- Ensure that a Design Check is carried out
- Ensure that a Temporary Works Design and Check Certificate is prepared and issued
- Ensure that an Inspection and Test Plan (ITP) is prepared
- Ensure that checks, inspections and tests are made at appropriate stages

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- Advise the designer of any changes or modifications
- In the event of discrepancies, prevent loading (or unloading) until rectified
- Ensure that a permit to load (or proceed) has been issued, to confirm that the permanent structure has attained adequate strength and/or stability

For further detail see BS 5975: 2019, Clause 11.2.3.

Temporary Works Supervisor (TWS)

To assist the PC's TWC and/or their client's TWC, a FASET member's DI should appoint a competent Temporary Works Supervisor (TWS), i.e. someone who has been assessed as having sufficient skills, knowledge, experience and training (and who has attended and passed the 'FASET Temporary Works Supervisor' Course).

The FASET member should provide a copy of any training certificate(s) to their client's TWC. The TWS acts as a TWC's "eyes and ears" on site.

Temporary Works Register

It is the TWC's responsibility to ensure that there is a Temporary Works Register. It is, however, recommended by FASET that members maintain a simple register of their own temporary works. This should be copied to the TWC, as agreed. This may be prepared by the TWS.

FASET Temporary Work Design Brief

It is the responsibility of the TWC to ensure that there is a Design Brief. However, this is often left to the FASET member. A template Design Brief is available to FASET members.

Design Checks

Before installation commences, all temporary works designs should be checked for:

- design concept
- strength and structure (including foundations and lateral stability)
- compliance with the Design Brief

Designs should follow the recommendations set out in relevant guidance and advice, e.g. BSI, FASET, etc.

The independence of the design check depends upon the Design Check Category (see Table 1). The design checker should be competent. A template Design and Design Check Certificate is available to FASET members.

Design Check Category

FASET members' procedures should detail how the recommendations in **Table 1** have been implemented.

NOTE: Based on BS 5975: 2019, Table 2, Categories of design check in temporary works

The example Design Check Categories given in Table 1 are not 'set in stone' and should be determined on a case-by-case basis.

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Table 1 – Category of design check			
Category	Scope	Comment	Independence of checker
0	Restricted to standard solutions only, to ensure the site conditions do not conflict with the scope or limitations of the chosen standard solution	This applies to the use of standard solutions (and not the original design). To be fastened to a robust primary structure, e.g. steelwork.	This is a site issue. The check may be carried out by another member of the site or design team.
		This would apply to installation to robust structures in accordance with the requirements of: <ul style="list-style-type: none"> o British Standards o FASET Guidance & Technical Bulletins o Manufacturer’s User Instructions Safety netting <ul style="list-style-type: none"> o BS 8411 o BS EN 1263-2 NOTE: Standard solutions should utilise proprietary products to secure the netting to the structure, e.g. rope ties; Net Claw; Grippa. Stair towers <ul style="list-style-type: none"> o BS EN 12810 and BS EN 12811. o Temporary Works Guide for the Installation and Tying in Details for Temporary Stair Towers Edge protection <ul style="list-style-type: none"> o BS EN 13374 Class A, B or C, including extended height and full containment systems installed in accordance with the Manufacturer’s User Instructions Platform decking and soft-landing systems <ul style="list-style-type: none"> o Erected or assembled to Manufacturer’s User Instructions 	

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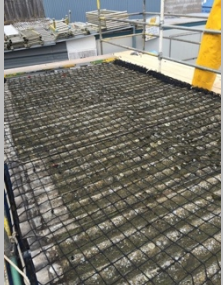
Category	Scope	Comment	Independence of checker
1	For simple designs	<p>Such designs would be undertaken using simple methods of analysis (and be installed and/or dismantled in accordance with relevant standards, supplier's technical literature or other reference publications).</p> <p>To be fastened to non-robust primary structure.</p> <p>This would apply to installation to non-robust structures in accordance with the requirements of:</p> <ul style="list-style-type: none"> o British Standards o FASET Guidance & Technical Bulletins <p>Preferably, the checker should hold relevant FASET certification, e.g.:</p> <ul style="list-style-type: none"> o Safety Nets for Managers o Safety Nets for Riggers o Stair Tower Installer o Edge Protection Installer o STEP for Managers o Platform Decking Installer <p>Safety netting</p> <ul style="list-style-type: none"> o Tied to non-robust structures, e.g. slender sections such as cold-rolled and lightweight hot-rolled steel, scaffolding, etc. <p>Stair towers</p> <ul style="list-style-type: none"> o Standard stair tower installation to column and sheeting rails <p>Edge protection</p> <ul style="list-style-type: none"> o Attachment details to non-robust structures, e.g. slender sections such as cold-rolled and hot-rolled steel, scaffolding, etc. 	The check may be carried out by another member of the design team.
			

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Category	Scope	Comment	Independence of checker
2	On more complex or involved designs	Category 2 checks would include designs where there is a considerable degree of interpretation of loading.	The design should be checked by an individual not involved in the design and not consulted by the designer, e.g. a structural engineer. <u>NOTE:</u> This person may work for the same company as the person carrying out the design
		<p>Examples include:</p> <p>Safety netting</p> <ul style="list-style-type: none"> o Catenary anchorages. <p>Stair towers</p> <ul style="list-style-type: none"> o Buttressed tower installation. <p>Edge protection</p> <ul style="list-style-type: none"> o Edge protection to large bays using multiple connection points to cold-rolled steel. o BS EN 13374 Class A, B or C, including extended height and full containment systems installed outside of the recommendations of the Manufacturer's User Instructions e.g. high rise buildings subject to increased and complex wind loadings <p>Tensioned access platforms</p> <ul style="list-style-type: none"> o All tensioned access platform designs to robust structures (see FASET's Guidance on Tensioned Access Platforms). <p>Roof over-netting</p> <ul style="list-style-type: none"> o See FASET's Guide ('Advice for Clients & Contractors when specifying, tendering and installing 'Roof Over-Netting' solutions'). 	
			
			

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Category	Scope	Comment	Independence of checker
3	For complex or innovative designs , which result in complex sequences of moving and/or construction of either the temporary works or permanent works	These designs include unusual designs or where significant departures from standards, novel methods of analysis or considerable exercise of engineering judgment are involved.	The design proposed should be checked by a specialist designer in <u>another</u> organization, e.g. a structural engineer. NOTE: This person should have technical and practical knowledge relevant to the complexity of the work.
		Examples include: Tensioned access platforms <ul style="list-style-type: none"> o All tensioned access platform designs to non-robust structures, e.g. slender steelwork members prone to buckling. 	
			

Implementation risk

BS 5975: 2019, Clause 6.1.3.1, introduces the concept of ‘implementation risk’ (see **Annex A**). The risks associated with temporary works can be considered to arise from:

- Their design
- Their construction and use (‘execution risk’)
- The consequences of their failure

‘Execution risk’ and ‘consequence of failure risk’ combine to form an ‘implementation risk’. It is the implementation risk that dictates ‘who can sign off what’.

The **PC’s TWC** (or other TWC) may request the use of a permit-to-work over and above the FASET handover certificate. The handover certificate(s) and/or handover instruction(s) should be passed to the PC’s TWC and/or any TWC.

This bulletin assumes that all work is:

- Undertaken by a FASET-audited member (with FASET-trained operatives)
- Planned and managed by a FASET-trained manager (with sufficient and adequate supervision)
- Documented in agreed RAMS (to FASET-published and other industry guidance, e.g. BSs)
- Installed in accordance with the Manufacturer’s User Instructions
- Handover certificate(s) provided to the FASET members’ client (and others as required).

References

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ANNEX A

Implementation risk

A1.1 BS 5975: 2019, Clause 6.1.3.1, introduces the concept of 'implementation risk'. The risks associated with temporary works can be considered to arise from:

- their design

NOTE:

The risks associated with design relate to the complexity of the design and mitigation of design risk is addressed through the selection of the *category* of design check category (see **Table 1**, above)

- their construction and use

NOTE:

The risks associated with the construction and use (and removal) of the temporary works relate to such aspects as workmanship, materials, experience and manner of use (e.g. faulty manufacturer, inappropriate use, poor fixing and installation). These are termed 'execution risks'.

- the consequences of their failure

NOTE:

The risks associated with the 'consequence of failure' of the temporary works come from the location of the temporary works, and what might be affected by the failure (e.g. inadequate clearance, incomplete rigging)

A1.2 'Execution risk' and 'consequence of failure risk' combine to form an 'implementation risk'. This is illustrated in **Table A1**.

A1.3 It is the implementation risk that dictates 'who can sign off what'.

Table A1 - Risks associated with temporary works				
These are from:	They relate to:	Mitigation:		
Design	Complexity of their design	Category of design check (see BS 5975: 2019, Clause 13.7)		
Construction and use (and removal)	Workmanship; materials; experience; manner of use	Execution risks	Implementation risk	Temporary works should be classified, and appropriate procedures adopted to control the risks (see Table 3).
Consequences of their failure	Location; what might be affected by failure			
NOTE: Based on BS 5975: 2019, Clause 6.1.3.1				

A1.4 To assess the 'implementation risk' each item of temporary works should be **classified**, and appropriate procedures adopted to control the risks. In BS 5975: 2019 (Clause 6.1.3.2 and Table 1) the classifications recommended are:

- "very low"
- "low"
- "medium"
- "high"

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A1.5 The level of control for each classification of temporary works depends on an organisation's experience (including that of its operatives), its competence, the location of the temporary works and the consequence of its failure.

NOTES:

1. **Inspection and test plan (ITP)**

Defined in BS 5975 2019, Clause 3.30, as:

"... document that prescribes the design output to be used to produce an item of work, and the inspections and tests required to verify that the item of work conforms to the design output ...". (BSI, 2019).

2. **Implementation Plan**

BS 5975 2019, Clause 14.1.2 states:

"... The PC's TWC or TWC should ensure that a temporary works **implementation plan** is in place covering the erection/assembly, use, unloading and dismantling of the temporary works including what inspections, checks, hold points, permits and certification are required. This should include defining the regular inspections which are required during the use (loading) of the temporary works ...". (BSI, 2019).

Note 1 states:

"...The implementation plan could consist of the method statement, task specific risk assessment, inspection and test plan (ITP), checklists and other certification (for example, quality control check lists) ...". (BSI, 2019).

Note 2 states:

"... The inspection and test plan can be used to define hold points, where works stops for an inspection or testing to take place. A permit is used to release the hold point and allow work to continue ...". (BSI, 2019).

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