Managing Scaffolds

Unitas
Stoke-on-Trent Ltd.

Contents

1 Introduction

The purpose of this standard is to set out the requirements for all Unitas Work Streams carrying out construction activities that involve scaffolding. This document has been produced to improve the management and control of scaffold structures erected on Unitas projects. It is in accordance with current legislation, guidance and protocol, and aims to minimise the risk of accident or injury to operatives working on or near the scaffold and the general public.

In addition to the requirement of this standard, all scaffolds are considered as temporary works and therefore must be managed and co-ordinated in accordance with Temporary Works Standard (SHEMS-STD-GR-048).

2 Scope

The scope of the SHEMS covers all persons, workplaces and operations in Unitas

Exceptions will be documented through a SHEMS Appendix B process (SHEMS-FOR-GR-999), authorised by the Director responsible for co-ordinating SHE.

This standard identifies the minimum requirements and standards for all access and working scaffolding when being planned, designed, erected, altered, inspected, used and/or dismantled.

Hoists, Ladders, Stepladders, Podium Steps and Mobile Aluminium Towers are not included as part of this standard, except where directly associated with scaffold for access.

2.1 Tube and Fitting Scaffolds

This standard applies to steel and aluminium tube and fitting scaffolds, and includes the use of system type components such as “Readylok” or “Easyfix” transoms, extending transoms, ladder beams and unit beams. All such components must be used in strict accordance with the manufacturer’s instructions / design guidance, and the information supplied to site upon request.

2.2 System Scaffolds

This standard applies to all types / brands of proprietary systems scaffolding used in construction.

3 Definitions and Acronyms

3.1 Definitions

design	The conception and calculation to produce the arrangement and details of a scaffold or other structure.
design brief	A document that includes all data and requirements relevant to the design of the temporary works.
design check	The evaluation of the design to determine whether it conforms with the design brief and can be expected to provide a safe engineered solution.
safe system of work	A formal procedure resulting from an examination of any workplace activity in order to identify its hazards and assess its risks.
scaffold	A temporary structure that provides access and a safe place of work for the erection, maintenance, repair or demolition of buildings and other structures, including storage of plant and material in use.
scaffold plan	A method statement for erecting and dismantling a scaffold.

3.2 Acronyms

SHEMS	Safety, Health & Environment Management System
NASC	National Access & Scaffolding Confederation
TG	Technical Guide
SG	Safety Guide
CISRS	Construction Industry Scaffolders Record Scheme
SSoW	Safe System of Work
BS EN	British Standard European Norm – European Harmonised Standard
BM	Procurement
CM	Contracts Manager
PM	Project Manager
PW	Permanent Works
SC	Scaffold Contractor
SI	Scaffold Inspector
TW	Temporary Works
TWC	Temporary Works Co-Ordinator
TWD	Temporary Works Designer
TWS	Temporary Works Supervisor
NVQ	National Vocational Qualification
H&S	Health & Safety
HSE	Health & Safety Executive

4 Regulations & Codes of Practice

All scaffolding works shall be carried out in accordance with the Regulations and Codes of Practice requirements defined in the documents listed below:

4.1 Regulations

- The Health and Safety at Work etc Act 1974.
- The Work at Height Regulations 2005 – as amended.
- The Construction (Design and Management) Regulations 2015.
- The Management of Health and Safety at Work Regulations 1999 – as amended.
- Manual Handling Operations Regulations 1992 – as amended.

4.2 Codes of Practice

- NASC SG4:15 Preventing falls in scaffolding.
- NASC SG7:14 Risk assessments and method statements.
- NASC SG19:17 A guide to formulating a Rescue Plan.
- NASC TG4:11 Anchorage Systems for Scaffolding.
- NASC TG20:13 Operational Guide – Good practice for tube and fitting scaffolding.
- JCOP 2015 Fire Prevention on Construction Sites.
- CISRS CAP 609 - General Information (latest edition).

5 Process

The process that is to be followed when using scaffolds in construction is summarised in the diagram below. It is broken down into 3 phases; Pre-Construction, Design and Construction.

		Action	By
Pre- Construction	1	Identify scaffold requirements and record on TW Control Register.	BM
	2	Prepare tender stage Scaffold Design Briefs.	BM
	3	Obtain preliminary scaffold designs, as necessary.	BM
	4	Include suitable allowances in the tender price and programme for assessment of foundations / supporting structures, design / design checking and provision of independent inspections.	BM
Design	5	Select and appoint competent scaffold contractor	CM / PM
	6	Identify the scaffold designer and check competence.	SC / TWC
	7	Classify risk level for scaffold and design check category. Update TW Control Register (SHEMS-REG-GR-060).	TWC
	8	Produce construction stage Scaffold Design Brief, using TW Design Brief (SHEMS-FOR-GR-061).	PM / TWC
	9	Undertake bespoke scaffold design or select a recognised standard configuration (e.g. compliant scaffold or system scaffold).	TWD
	10	Produce design documents and hold on site (e.g. compliance sheets, drawings, or manufacturer's or supplier's design manual / erection guide).	TWD / TWC
	11	Assess supporting structures (e.g. foundations and façade of building)	TWD / TWC
	12	Undertake Design Check at appropriate level of independence.	TWDC
	13	Review of scaffold design documents (including residual risks).	PM / TWC
Construction	14	Produce Safe System of Work / Scaffold Plan for erection, use, maintenance and dismantling – including a Rescue Plan.	PM / SC
	15	Issue Design Drawings (e.g. for bespoke scaffolds) marked as "For Construction" or similar – Hold Point for starting erection.	TWD / SC
	15	Inspect equipment prior to erection.	SC / TWS
	16	Erect scaffold, install ties and get ties independently tested.	SC
	17	Handover scaffold (including inspection and certificate).	SC
	18	Inspect scaffold before accepting hand-over.	TWC / TWS / SI
	19	Issue Permit To Load (SHEMS-FOR-GR-063), if required by risk class.	TWC
	20	Use and maintain the scaffold.	Site Team
	21	Carry-out Statutory Inspections & record on form SHEMS-FOR-GR-065.	TWS / SI
	22	Issue Permit To Strike/Unload (SHEMS-FOR-GR-064), if required by risk class.	TWC
	23	Dismantle scaffold.	SC
	24	Review of scaffold contractor performance regularly	CM / PM / BM

BM Procurement / Estimator
CM Contracts Manager
PM Project/Site Manager
SC Scaffold Contractor
SI Scaffold Inspector

TW Temporary Works
TWC Temporary Works Co-ordinator
TWD Temporary Works Designer (Scaffold Designer)
TWDC Temporary Works Design Checker
TWS Temporary Works Supervisor (Scaffold Inspector)

6 Pre-Construction

6.1 Identification of Scaffolding Requirements

The Procurement should identify all items of scaffold needed for the project as part of the tendering process. A Temporary Works Control Register (SHEMS-REG-GR-060) should be commenced at tender stage and this should include all items of scaffold identified.

Unitas have the responsibility for ensuring that a clear brief for the work is given to the scaffold contractor, prior to them bidding for the work. This applies as much at the tender stage as it does during construction.

The Procurement should ensure that the Scaffold Design briefs are prepared for all significant scaffolds, and preliminary scaffold designs obtained. The scaffold requirements should be communicated by means of a Temporary Works Design Brief (form SHEMS-FOR-GR-061) to the scaffold designer. The information to be included on these design briefs is detailed in Section 7 of this standard.

6.2 Allowances in Price and Programme

The Procurement should consider and include suitable allowances in the tender price and programme for the following:

- All aspects of the TW process, as defined in Temporary works Standard, including
  - Bespoke designs;
  - Design checks;
  - Assessment of foundations and supporting structures.
  - External approvals;
  - Provision of TWS;
  - Statutory Inspections.
- Provision of independent inspectors to undertake the Statutory Inspections of the scaffolds;

7 Design Brief

The scaffold requirements should be communicated by means of a Temporary Works Design Brief (using SHEMS-FOR-GR-061) to the scaffold designer, in accordance with the Temporary Works Standard SHEMS-STD-GR-048.

Preliminary designs should be produced at tender stage.

As a minimum, Unitas should give the scaffold designer the information listed in sections 7.1 to 7.5:

7.1 Scope

- The scope and description of works for which the design is required.
- Site Location.
- Duty of scaffold including anticipated usage and loads to be carried including the nature of any plant to be used.
- Height and Length of the scaffold.
- Time allowance for erection and time it is to remain in place.
- The nature of the supporting ground and any supporting structures.
- The presence of any hidden hazards that might create unexpected risks to the scaffold contractor, the workforce or other people.
- The requirements for a Loading Bays, or specially strengthened portion of the scaffold to receive loads that are to be placed by mechanical handling equipment, or which consist of packaged materials and the magnitude of all such loads.
- Any specific requirements or limitations on tying the scaffold.
- Whether there is a need for temporary sheeting or netting, and whether there will be grit blasting or similar operations.
- Whether the decking should be clear of any lapping boards, or sheeted over with plywood or similar materials, and the necessity to be covered with anti-slip strips.

7.2 Preferred Solutions & Materials

- Sequence and timing of loading.
- Plant to be used.
- Loads applied to the scaffold during construction from plant and materials.
- Exposure to wind for assessment of wind loads.
- The problems of access to and about the site.
- The requirements for access and working platforms (access to scaffold platforms above 1st lift is to be provided by use of a system staircase where practical.

7.3 Special Design Considerations

- Photographs of relevant area.
- Clearances required by statutory authorities, service providers, roads, railway, power lines, etc.
- The maximum load that can be applied to the permanent works.
- Interfaces with infrastructure assets such as Rail and Highways, and Waterways.
- Work in tidal locations.

7.4 Reference Documents

- Specification - Contract-Specific amendments and relevant clauses.
- Drawings
  - Fully dimensioned General Arrangement drawings of the relevant permanent works;
  - Contract drawings showing plan of ground and foundation areas beneath and adjacent to area, ground level variations, access areas both below and adjacent to the work;
  - Position of services;
  - Historical record drawings.
- Other
  - Site investigation data and reports relating to the area under and adjacent to the temporary works, including information of the site conditions;
  - Water courses or sources which might affect the site by altering soil properties, scour, flooding or the creation of additional loads;
  - Health & Safety Plan, in particular any information supplied by designers;
  - Construction Programme.

7.5 Risk Classification

The risk class for this type of temporary works is to be determined by the Temporary Works Co-Ordinator (TWC), in accordance with the Temporary Works Standard SHEMS-STD-GR-048. The risk class chosen is to be recorded on the Temporary Works Control Register SHEMS-REG-GR-060.

Typically, the risk classification of a range of different scaffold solutions and their supporting structures would be broken down as follows:

- Compliant Scaffolds to TG20, pre-designed recognised standard solution – Risk Class **LOW**.
- Design Scaffolds, bespoke design outside of the scope of a standard solution – Risk Class **MEDIUM** or **HIGH**.
- Proprietary System Scaffolds, pre-designed recognised standard solution – Risk Class **LOW**.
- Supporting foundations, bespoke design by Temporary Works Designer – Risk Class **LOW** or **MEDIUM**.
- Assessment of the structure that the scaffold is tied to for stability, bespoke design, checked by Permanent Works (PW) Designer or Temporary Works Designer (TWD) – Risk Class **MEDIUM**.
- Deviation from proprietary system scaffold requirements, bespoke design, design by manufacturer / supplier – Risk Class **MEDIUM**.

The above typical risk classes are given for guidance. The TWC should use their judgement to decide on the risk class that is appropriate to the individual circumstance on the particular project, depending on the context for the scaffold structure.

8 Selection & Appointment of Scaffold Contractor

Unitas must match the requirements of the work with expertise of a suitable sub-contractor. Many of the problems arising from Work at Height can be avoided by selecting safe and competent contractors before work begins.

All Scaffolding Contractors used on Unitas projects (whether directly engaged or engaged by a sub-contractor) should preferably be full NASC members. Non-NASC contractors must be audited by a NASC approved organisation prior to tender. The auditing process should involve an assessment based on due diligence, reputation and previous contractor references, and must be approved by the Director with responsibility for safety within the Business Unit.

8.1 Competence

Competence refers not only to their technical awareness and capability, but also to their ability to understand and manage health and safety. The competence of the scaffold contractor, as well as operatives, is fundamentally essential. The requirements for competence, training and appointments are defined in the Competency, Training & Appointments Standard (SHEMS-STD-GR-009).

8.1.1 Scaffolding Contractors

Scaffold contractors must be able to demonstrate that they have competent supervision (e.g. must be qualified to at least CISRS 5 day Scaffold Supervisor training & hold a CISRS Scaffold Supervisor card).

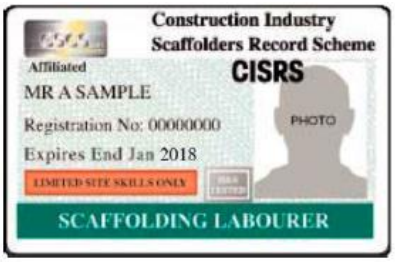
They must employ competent scaffolders for the type of scaffolding to be undertaken on site. A qualified CISRS Advanced Scaffolder or Scaffolder working within their capability is suitably qualified to lead the scaffold operations within a gang of scaffolders and to direct the practical operations on site. Management, supervision and operatives must have received training on the latest editions of TG20 and SG4.

The scaffold contractors must also have access to competent scaffold designers.

An Advanced Scaffolder must be in attendance during the erection, adaptation and removal of designed bespoke scaffolds.

8.1.2 Scaffolding Operatives

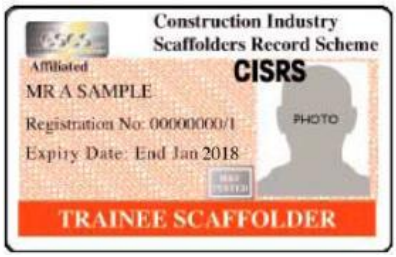
- **Scaffolding Labourers**



Labourers must be adequately trained to allow them to carry out their duties safely. They must have received scaffolding manual handling training in accordance with NASC Guidance Note SG6 Manual Handling.

A CISRS Scaffolders Labourers card is available for operatives carrying out these duties. Labourers are only allowed to work at ground level or with safe access to a fully boarded and double guard railed section of a scaffold platform passing scaffolding equipment.

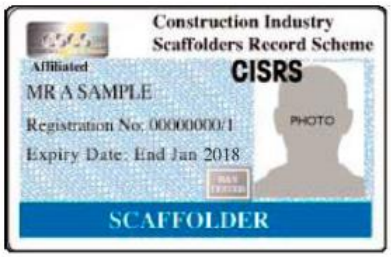
- **Trainee Scaffolder**



Trainees must have received scaffolding manual handling training in accordance with NASC Guidance Note SG6 Manual Handling. They must hold a current CISRS Trainee Scaffolders card and have received SG4 training and work in compliance with the guidance.

They can only work under the direct supervision of either a CISRS Scaffolder or CISRS Advanced Scaffolder at all times. An operative is considered a Trainee Scaffolder until they have completed all requisite training and assessment - i.e. CISRS Part 1, CISRS Part 2, S/NVQ 2, H&S testing and hold a CISRS Scaffolder Card, irrelevant of their time in the industry.

- **Scaffolder**



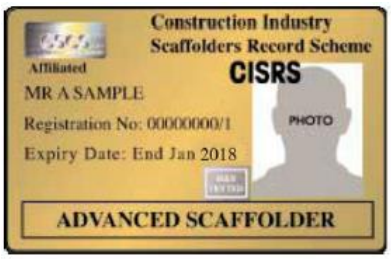
The Scaffolder must hold a current CISRS Scaffolders card and have received SG4 training and work in compliance with the guidance. The lead hand of a scaffold gang using System Scaffolding must have successfully completed the relevant CISRS Systems product training.

Scaffolders can work on the following structures:

- Independent tied scaffolding;
- Putlog scaffolding;
- Birdcage scaffolding;
- Tower scaffolding (steel);
- Truss-out scaffold;
- Scaffolds with beams;
- Protective fans;
- Pavement gantry;
- Loading bay;
- Roof saddle scaffold;
- Splay scaffold;
- Roof edge protection; and
- Tie testing.

They are entitled to work on Advanced or complex design structures but only under the direct supervision of an Advanced Scaffolder.

- **Advanced Scaffolder**



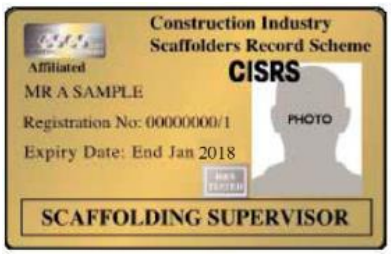
The Advanced Scaffolder must hold a current CISRS Advanced Scaffolders card and have received SG4 training and work in compliance with the guidance.

The lead hand of a scaffold gang using Systems Scaffolding must have successfully completed the relevant systems product training.

Advanced scaffolders can work on any tube and fitting steel scaffolding structure including the following:

- Tubular drop scaffold from steelwork;
- Cantilever drop scaffold;
- 2 Chord raking shore;
- 3 Chord raking shore;
- Dead shore;
- Flying shore;
- Temporary roof scaffold;
- Stairways; and
- Ramps.

- **Scaffolding Supervisor**



The Scaffolding Supervisor must hold a current CISRS Scaffolding Supervisors card and have received SG4 training and work in compliance with the guidance.

9 Responsibilities

9.1 Scaffold Contractor's Supervisors

All scaffold supervisors must hold an Advanced Scaffolders CISRS card and have as a minimum five years practical experience.

All scaffold supervisors will ensure that all scaffolding works are supervised and carried out safely and are in accordance with:

- the TG20 Compliance Sheet; or
- the bespoke scaffold design; or
- the System Scaffold's manufacturer's erection manual; and
- any Statutory Duty requirements.

All scaffold supervisors must be able to understand all of the requirements as defined on the TG20 Compliance Sheets, bespoke scaffold design or System Scaffolds manufacturer's erection manual, as well as their Statutory duties.

All scaffold supervisors must be familiar with the safe methods of work required to carry out the works safely, i.e. latest versions of NASC SG4, TG20 and TG4.

The scaffold supervisor will be responsible for ensuring co-operation with the Unitas site project team.

The scaffold supervisor must only accept instruction from the Unitas person responsible for scaffolding works, or an appropriate authorised manager.

The scaffold supervisor must advise the Unitas project team of any unforeseen conditions, impractical details as and when they arise.

Any significant changes to design and/or methods of safe working must be brought to the attention of the Unitas project team prior to continuing work.

9.2 Scaffold Supervisor Ratios

The minimum number of scaffold supervisors in relation to the number of scaffolders on site is defined below:

- For sites with less than 4 scaffolders; a visiting scaffold supervisor is acceptable, with a minimum visiting frequency of twice a week. All projects/sites must have an appointed responsible foreman who must hold a CISRS Advanced Card.
- For projects/sites with between 4 and 15 scaffolders, a dedicated on site scaffold supervisor is required.
- For projects/sites with between 15 and 21 scaffolders, two dedicated scaffold supervisors are required.
- For projects/sites with more than 21 scaffolders. The number of dedicated scaffold supervisors will increase proportionately.

9.3 Scaffold Supervisor's Role

The Scaffold Supervisor's role includes:

- They will ensure all information relating to all scaffold structures is available to all parties on the content and measures required for compliance.
- They will ensure that all movement and storage of materials whether from delivery vehicles, around site or during use, is carried out safely. Particular consideration is required toward maintaining safe access routes, and avoidance of obstructions to other contractors.
- They will ensure only registered and competent workers experienced in the works are deployed to carryout scaffold works.
- They will ensure an approved method statement, risk assessments, rescue plan, and relevant work permits are in place before work commences, and that they are appropriate to the specific element of work. All operatives involved with the works must have the method and risk assessments explained to them and sign the relevant documents to confirm understanding.

- They will maintain a daily record of all operatives working on site and ensure the correct skill ratio of operatives within each scaffold gang. The supervisor must bring to the attention of the Unitas project site team any foreseeable issues with regard to resource level.

10 Scaffold Design

The Work at Height Regulations require that strength and stability calculations for scaffolding shall be carried out unless a note of the calculations (covering the structural arrangements contemplated is available), or it is assembled in conformity with a generally recognised standard configuration.

NASC TG20 Compliant Scaffolds and System Scaffolds fall into this category, where no bespoke design is required for the scaffold's structure. For all other scaffolds, a bespoke design is required supported by full strength / stability calculations and construction drawings.

10.1 Compliant Scaffolds

TG20 compliant scaffolds are standard configurations of scaffolding that have been designed by structural calculation in accordance with BS EN 12811.

NASC TG20 provides detailed guidance on compliant scaffolds, their range and definition, and requirements.

10.1.1 Types of TG20 Compliant Scaffolds

The types of scaffold that may be a compliant scaffold to TG20 include:

- Tied Independent Scaffolds.
- Tied Putlog Scaffolds.
- Freestanding Independent Scaffolds (unclad, up to 6m high, using rakers and butting to an existing façade – in accordance with TG20 Ops Guide Section 6.23).
- Interior Birdcage Scaffolds.
- Loading Bays.
- Towers.
- Ladder Access Towers.
- Chimney-stack Scaffolds.

In addition to the above scaffolds, TG20 allows for a number of add-ons (structural features) that have their own compliance sheets. These add-ons include:

- Bridging with beams.
- Pre-fabricated transom units.
- Light duty cantilevered protection fans.
- Pavement lifts.
- Cantilevered access platforms.
- Inside board brackets (hop-ups).

10.1.2 TG20 Compliance Sheets

A TG20 compliance sheet can be used to demonstrate that a scaffold is TG20 compliant and therefore does not need bespoke design.

Compliance sheets can be produced in 2 different ways:

- Firstly, they can be taken directly from the TG20 Operational Guide – in this case the scaffolds they cover are termed as "basic" compliant scaffolds; and
- Secondly, they can be produced by the TG20 E-Guide.

Compliance sheets produced by the E-Guide generally give more economical scaffolds with lower leg and tie loads.

A copy of the specific compliance sheets for each compliant scaffold that have been erected, or are being used, on site must be held on site as part of the Temporary Works records.

10.2 Bespoke Design Scaffolds

TG20 also covers the specific requirements for designed scaffolds (TG20 Design Guide).

When TG20 compliant scaffolds, established solutions or system scaffolds are not appropriate, access scaffolds shall be designed by a competent person in accordance with BS EN 12811-1, NASC TG20 and BS EN 1991-1-4:2005.

10.2.1 Types of Bespoke Scaffolds

The typical types of scaffold that will need a bespoke design include:

1. Scaffolds for which a matching TG20 Compliance Sheet can't be produced;
2. All shoring scaffolds (Dead, Raking and Flying);
3. Cantilevered scaffolds (if a matching TG20 Compliance Sheet can't be produced);
4. Truss-out scaffolds;
5. Façade retention scaffolds;
6. Access scaffolds with more than the 2 working lifts;
7. Buttressed free-standing scaffolds (if not matching criteria in TG20 Ops Guide, Section 6.23);
8. Temporary roofs and temporary buildings;
9. Support scaffolds;
10. Loading bays (if a matching TG20 Compliance Sheet can't be produced);
11. Mobile Towers;
12. Temporary ramps and elevated roadways;
13. Tube & Fittings Staircases and fire escapes (if more than 1.5m long or not compliant with TG20 Operational Guide Section 8.3);
14. Spectator Terraces and Seating Stands;
15. Bridge scaffolds (if a matching TG20 Compliance Sheet can't be produced);
16. Towers requiring guys or ground anchors;
17. Offshore scaffolds;
18. Pedestrian footbridges or walkways;
19. Slung and Suspended scaffolds;
20. Protection fans (if a matching TG20 Compliance Sheet can't be produced);
21. Pavement gantries;
22. Marine scaffolds;
23. Boiler scaffolds;
24. Power line crossings;
25. Lifting gantries and towers;
26. Steeple scaffolds;
27. Sign board supports;
28. Sealing end structures and temporary screens;
29. Temporary Storage on site;
30. Masts, Lighting Towers and Transmission Towers;
31. Advertising hoarding/banner supports;
32. Scaffolds of tubes of other materials, dimensions and strengths (e.g. aluminium tubes); and
33. Rubbish chute supports.

Note 1: The above list is not exhaustive and any System Scaffold and or system component that does not comply with manufacturer's guidelines (including System Scaffold Staircases), as published in handbooks, will require a specific design produced by a competent person.

Note 2: TG20 only provides compliant scaffolds for a limited range of scaffolds. Any scaffolds that fall outside of the scope as defined on the compliance sheets must have a bespoke design produced.

Note 3: TG20 provides a range of compliant scaffolds, which can be boarded at any number of

lifts, but only two platforms can be used as Working Platforms at any one time.

10.2.2 Design Drawings

Where design drawings are produced, they shall include the following:

- Elevations and a typical section of the scaffold;
- Maximum height;
- Platform boarding arrangement;
- Maximum leg loads;
- Duty, designation or safe working load;
- Number of lifts that can be loaded simultaneously;
- Lift heights, bay lengths, transom spacings;
- Bracing requirements;
- Tying arrangements, tie duty, maximum spacing both horizontally and vertically.
- Sole boards requirements;
- Component materials / grades – tubes, couplers, boards, prefabricated beams, transom units, ladders; and
- Erection tolerances.

A copy of scaffold design documents for all bespoke designed scaffolds that have been erected, or are being used, on site must be held on site as part of the Temporary Works records. These design documents shall include drawings, supporting calculations and information from the designer regarding residual risks.

10.3 System Scaffolds

All system scaffolding must conform to the relevant British and European Standards BS EN 12810/12811.

All system scaffolding is to be erected in accordance with the manufacturer's or supplier's design manual / erection guide, or be subject to a specific design by a competent Temporary Works Designer.

Any proposed modifications, or alternations, outside a system scaffolding manufacturer's guidelines must be designed by a competent Temporary Works Designer.

The relevant installation / erection guidance from the manufacturer or supplier of the system scaffold must be obtained, and must be held on site as part of the Temporary Works records, whilst the system scaffold is being erected, used and dismantled.

10.4 Access and Egress

Where possible, access to scaffold platforms above the 1st lift is to be provided by use of a System Staircase. To comply with the Work at Height Regulations, the following hierarchy is to be implemented in priority order:-

- System Staircases with the exception of tube and fit type treads (unless agreed with the SHE manager).
- Independent Ladder access towers, with single lift ladders
- Internal single lift ladders to access the working platform.
- External ladders (Max height 4.5metres).

10.5 Scaffold Designers

The site team and TWC must be clear exactly who the designer of the scaffold is and ensure that they are properly briefed as Section 7 above. Designers of scaffolding have responsibilities under the Construction (Design Management) Regulations 2015.

In addition to the traditional definition of a designer (someone who prepares or modifies a design for a construction project, or arranges for, or instructs someone else to do so), the CDM Regulations also states that "the person who selects products for use in construction is a designer".

All scaffolds will have at least one designer (most will have more than one) who would have been involved in producing the scaffold solution. For example:

- A typical TG20 Compliant Tied Independent Scaffold will have at least 5 designers. The first is the original designer who produced the strength and stability calculations for the recognised standard configuration (NASC & CADS). The second is the person who selected the particular compliant scaffold as being suitable in meeting the design brief, and hence the specific situation on site (normally this is the Scaffold Contractor). The third is the person who decided which type of ties to use on site (normally the Scaffold Contractor). The fourth is the person who assessed / designed the foundations for the scaffold. The fifth is the person who assessed the fabric and / or structure that the scaffold is tied to (sometimes this is the PW engineer).
- A Proprietary System Scaffold with ties similarly will have at least 5 designers. The first is the original designer who produced the strength and stability calculations for the standard solution (manufacturer or supplier). The second one, is the person who selected the particular system scaffold as being suitable in meeting the design brief, and hence the specific situation on site. The third is the person who decided which type of ties to use on site (normally the Scaffold Contractor). The fourth is the person who assessed / designed the foundations for the scaffold. The fifth is the person who assessed the fabric and / or structure that the scaffold is tied to (sometimes this is the PW engineer).
- A bespoke scaffold including ties will usually have several designers. The first designer is the scaffold designer who has been given the design brief for the particular scaffold. They may have the tie design / selection, foundation design and assessment of the building fabric / structure included in their brief. If they do not, then there are additional designers involved in the process as above.

10.6 Design Review

The site team shall carry out a review of the scaffold solution; whether it has a bespoke designed, is a TG20 compliant scaffold, or is a system scaffold. This review should ensure the following is undertaken as a minimum:

- The proposed scaffold is reviewed against the original design brief, to ensure they comply with the site requirements. Any new requirements identified must be referred back to the Scaffold Designer for re-design and re-issue of scaffold design deliverables.
- Any temporary loadings applied to the permanent works (PW) are referred back to the PW Designer, to gain his written approval.
- The design is reviewed against company safety standards and alerts to ensure compliance and identify any additional risks. These new risks must be assessed, and control measures devised and included in the construction method statements.
- Any residual risks identified by the Scaffold Designer must be assessed, and control measures devised and included in the safe system of work.
- For compliant scaffolds produced from the TG20 Operational Guide and E-Guide, ensure that the following meet the requirements for the specific scaffold:
  - Site location meets the site wind exposure criteria.
  - Netting or sheeting restrictions.
  - Façade permeability restrictions.
  - Maximum height to top lift.
  - Loading / duty allowed.
  - Tie duty and maximum spacings.
- For compliant scaffolds produced from the E-Guide reviewing certain information that has been used in selecting the proposed solution is a problem. In particular, the criteria used in selecting the wind exposure for the site – e.g. topography, altitude, and seasonal factor. The TWC should request this information from the scaffold contractor to help in reviewing the scaffold solution selected, and this should be held with the other Temporary Works records. An example format for obtaining this information is included in Appendix B.

10.7 Design Check

A Design Check shall be undertaken on all scaffolds depending on their design check category, as defined in Table 3 of the Temporary Works Standard SHEMS-STD-GR-048. The design check category is dependent on the design complexity and is based on BS 5975. The typical design check categories for scaffolds are as follows:

- Compliant scaffolds to TG20 - Category 0 (standard solutions).
- Design scaffolds – Category 1 (simple designs), or Category 2 (more complex or involved designs).
- Proprietary system scaffolds fully in accordance with manufacturer's / supplier's guidance - Category 0 – standard solutions.
- Proprietary system scaffolds NOT fully in accordance with manufacturer's / supplier's guidance - Category 1 (simple designs), or Category 2 (more complex or involved designs).

Documentary evidence of design checks is required for every scaffold and this should be kept in the Temporary Works records. For Category 0 & 1 design checks, e-mail confirmation from the checker is deemed suitable evidence. However for Category 2 & 3 design checks, Design Check Certificates (form SHEMS-FOR-GR-062 or equivalent) are to be used.

11 Safe System of Work

Each scaffold must have Safe Systems of Work (SSoW) developed for the activities involved in its erection, use, inspection, maintenance and dismantling. As part of developing the SSoW, job specific risk assessments must be undertaken and recorded in writing. The SSoW will be documented in the form of method statement(s), which are often referred to as Scaffold Plans. Both the Scaffold Plan and associated risk assessments must be submitted to, and accepted by, Unitas before work commences to erect, alter or dismantle a scaffold.

Scaffold Plans should be written by the management of the Scaffold Contractor. NASC SG7 "Risk assessments and method statements" provides industry guidance on how a scaffold contractor should produce a Scaffold Plan.

A Scaffold Plan may cover a range of scaffolds for a particular site, particularly if they are all Low risk recognised configurations, such as TG20 compliant scaffolds.

11.1 Content

Whilst the content of the Scaffold Plan will vary according to the scale and complexity of the job and level of risk involved, the document as a minimum should address, but not be limited to, the following issues:

- WHAT - the scope of the work to be carried out including the duty of the scaffold, sheeting requirements and the methods to be used for tying the structure.
- WHERE - the location of the work being carried out.
- WHEN - dates, time, sequence of events, or following other operations.
- WHO - number and type of personnel, including the names and any specific skills, training or qualifications required.
- HOW:
  - Plant, equipment and material required, including access, storage and handling.
  - The safe means of access and egress.
  - The means of ensuring a safe place of work.
  - The method and sequence of operations.
  - Specific limitations / constraints upon the job, e.g. adverse weather, out of sequence working.
  - Emergency procedures.
  - Details of PPE and other measures such as barriers, signs, etc.
  - Details of any measures to protect third parties or members of the public.
- The type of collective fall prevention system / equipment to be used (SG4).
- Scaffold inspections - handover and inspection arrangements.

- References - it may be necessary to cross-refer to design drawings, specifications, procedures, job specific risk assessments or permits to work.
- Date and originator - signature and date of the person completing the Scaffold Plan.

Any new personnel introduced to the work must be briefed on the Scaffold Plan and sign to confirm that they understand the content.

11.2 Controls

The following system controls also need to be specified, either as part of the Scaffold Plan or as part of company procedures:

- Communication - arrangements for ensuring that all parties involved understand the scaffold plan or their part of it. Risk assessment and method statements shall be communicated to operatives. Copies of all risk assessments and method statements should be held as a minimum for the duration of the contract.
- Supervision - arrangements for ensuring that the work proceeds according to the scaffold plan.
- Amendments - **arrangements for agreeing modifications to the scaffold plan and communicating them to those concerned**.
- Validation - arrangements for ensuring that the proposed scaffold plan is reviewed by both the contractor producing it and by the principal contractor.
- Drawings – arrangements for ensuring that, where design drawings are produced, erection should only proceed based on drawings clearly marked with “For Construction” status.

11.3 SG4 Preventing Falls in Scaffolding

The controls as detailed in the NASC SG4 “Preventing Falls in Scaffolding” must be incorporated in the Safe Systems of Work for erection and dismantling of all scaffolds.

In order to work within the requirements of SG4, methods of fall prevention must be considered ahead of methods of fall mitigation. The type of collective fall prevention system / equipment to be used must be stated on the Scaffold Plan (Method statement).

Furthermore, all Management, Supervision and Operatives involved in the erection and dismantling of scaffolds must have received relevant training on SG4.

11.4 Pavement Licenses & Public Protection

A license will be required from the Local Authority granting permission when scaffolding is erected on or above public highways (including pavements),

Pavement lifts shall comply with the following:

- The maximum bottom lift height will be 2.7m;
- The minimum bottom lift height will be 2.3m; and
- All standards protected with foam.

In order to protect the public, consideration should be given to:

- Use of Proprietary System Scaffolds as less components are used, so reducing the risks of dropping loose fittings.
- The inclusion of brick-guards, netting, sheeting, safety net fans and protection fans;
- The need for lighting to be fixed the scaffold; and
- Redirecting the public away from the scaffold.

As a minimum, the following must be included to protect the public:

- The bottom lift will be double boarded with sheeting sandwiched between the boards (NOTE: All sheeting must comply with LPS1215 fire resistance requirements).
- There must be no gaps between the face of the building and the scaffold, where materials could fall onto the pavement.
- There should be yellow plastic protection base pads under each base plate.

Where alternative footways are required, consideration should be given to the New Roads & Street Works Act 199. Signs and barriers are to be erected in compliance with “Safety at Street Works and Road Works, A Code of Practice” (the Red Book).

11.5 Rescue Plan

If a person falls and is suspended in their safety harness, restriction of movement or loss of consciousness must be anticipated, so they must be rescued extremely quickly. The aim of the rescue plan should be to keep the post fall suspension time to a minimum by getting the person back to a position of safety as soon as possible.

The legal requirement for rescue is specified in the 'Work at Height Regulations 2005' and requires every employer in selecting work equipment for use in work at height to take account of the need for easy and timely evacuation and rescue in an emergency.

When planning for rescue, consideration should be given to the type of situation from which a casualty may need to be recovered, and the type of fall protection equipment which the casualty would be using. The Rescue Plan must include details of the arrangements for the recovery of scaffolders that have suffered a serious medical episode or sustained significant injury, as well as the recovery of a scaffolder suspended in a harness following a fall.

The Scaffold Plan must include an effective Rescue Plan / Procedure that can be implemented on site independently of the emergency/fire rescue services. The rescue plan must be drafted in accordance with the guidance given in NASC SG19 "A Guide to formulating a Rescue Plan", which deals primarily with the rescuing of a scaffolder suspended in a harness.

NASC SG19 has 4 different Rescue Plan scenarios included. These can be very helpful in producing a site specific Rescue Plan.

12 Site Activities

12.1 Supporting Structures

The ground or other supporting structures (e.g. footings, foundations) must be capable of supporting the loads applied by the scaffold. Hence, they must be assessed by a competent person prior to proceeding with erecting the scaffold. Under normal circumstances, Unitas will be responsible for these assessments.

Ground assessments will need to ensure that the permissible bearing capacity of the ground is not exceeded by the loads imposed by the legs of the scaffold. The use of steel base plates and sole boards should be considered the minimum in order to reduce the pressures to a reasonable level.

If the bearing capacity is inadequate then there are several options which can be considered to improve the situation, they may include:

- Use of spreaders to increase the bearing area – e.g. additional sole plates or other structural timber spreaders.
- Addition of engineered granular material to improve the bearing capacity.
- Reducing the bay lengths to lower the leg loads of the scaffold.

Where the scaffold is supported by structures other than the ground (e.g. parts of a building) then these structures must be assessed to ensure that they are strong enough to support the loads imposed by the scaffold. These assessments are typically undertaken by the PW engineer or a TW designer.

For tied scaffolds, it is vital that there is an assessment made of the structure to which the scaffold is to be tied for stability. This assessment can be undertaken by the PW engineer for the building or a TW Designer.

12.2 Inspection before erection

A scaffold inspector / Temporary Works Supervisor must ensure that:

- Equipment is checked for compliance with design requirements.
- Damaged or defective equipment is removed from site or destroyed.
- Critical components, identified by the designer, are subject to specific inspection.
- Foundations are adequate, level and ready for installation.
- Any design drawings are marked as "For Construction" or similar.

12.3 Erection

12.3.1 Tube & Fitting Scaffolds

The Safe System of Work (Scaffold Plan) must be followed for the erection of the scaffold.

The erection area must be clearly identified, signed and those not involved with the erection excluded from the area. Particular consideration must be given to members of the public.

Scaffolders must be competent and be able to demonstrate the requirements under 8.1 on this standard. Scaffolders must work in full compliance with current NASC guidance. Erection shall be carried out using systems in accordance with NASC guidance SG4.

Care shall be taken to ensure that the foundations for scaffolds are adequate prior to erection, and inspected as part of the statutory inspections during handover and use.

All incomplete scaffolds (including scaffolds being adapted) must be clearly signed as unfit for use and left in a safe state at all times.

Ties and bracing are to be installed progressively as the scaffold is built, and not left until it has been completed. Similarly, the testing of ties should follow-on progressively as the scaffold is built.

All scaffold materials, when not in use, must be removed from the scaffold and stored / stacked appropriately.

Sheeting and debris-netting, where needed, should always be fitted to the outside of the scaffold members, unless the scaffold is designed specifically for the sheeting to be fitted to the inside of the members. NOTE: All sheeting and debris-netting must meet LPS 1215 fire resistance requirements.

A detailed check should be made on every scaffold structure to ensure it is constructed correctly and tied in accordance with the scaffold design before any sheeting or debris netting is fitted.

12.3.2 Proprietary System Scaffolds

The above requirements under 12.3.1 above apply to proprietary system scaffolds.

Proprietary System scaffolds (including system scaffolds, loading bays and staircases) must be installed strictly in accordance with manufacturer's requirements and guidance; particularly with regard to type, number and pattern of ties.

The relevant installation / erection guidance from the manufacturer or supplier of the System Scaffold must be obtained and be available on site, whilst the system scaffold is being erected, used and dismantled.

All scaffolders must be competent for the type of scaffolding work they are undertaking and should have received appropriate training relevant to the system they are working on.

Any person erecting a System Scaffold must hold an appropriate level CISRS card that includes endorsement for the particular system that they are working on.

Never, in any circumstances, mix the components of different systems or manufacturers, as they may have varying specifications and dimensions, and could result in unsafe conditions.

12.3.3 Ties

When the scaffold is to be tied to an existing building or structure for stability, it should be established by test or calculation that the building fabric or structure is adequate to sustain the loads transferred to it by the ties.

It should be noted that the conventional portable tension testing equipment used on proprietary anchors may validate the resistance of the anchor in the façade material; however it will not test the overall strength of the wall panel, column or other structural component to which the tie is anchored. If in doubt, an appraisal or calculations should be undertaken by a structural engineer (typically the Permanent Works engineer) or a Temporary Works designer.

NASC TG4 covers the use of drilled in anchors used to tie scaffolding to a building structure. It gives specific details for the selection, tie loads, types, installation and testing of anchorage ties. It deals with preliminary anchor tests to establish the suitability / capability of anchors and base materials, and also covers the proof testing of installed anchor ties.

Where anchor ties are to be used to provide stability to a scaffold they must be subject to a testing regime. The regime to be used is that contained within NASC TG4. In summary, the numbers of ties to be tested is 5% of the number in every discreet area, with a minimum of 3 per discreet area. The anchors are to be tested to a load of 1.25 times the working load for the anchor (as defined by the tie duty).

Site tie testing should be carried out by suitably competent personnel (other than the actual installer of the fixings) using a suitably calibrated testing equipment.

All scaffold ties must be identified with a scaffold tie tag (or similar warning against removal).

12.3.4 Inspection during erection

It may be necessary and prudent to undertake inspections of the scaffold during its erection. These inspections are to be made by a competent person from the Scaffold Contractor. Additional inspections may be also made by the TWC, TWS or other competent scaffold inspector as deemed necessary.

Typical circumstances where these inspections may be required include:

- For large scaffolds where a considerable length of time is need to fully erect; and
- For scaffolds where they have been many adaptations.

12.4 Handover

A handover certificate must be issued for all newly erected scaffolds and all adaptations.

The purpose of the Handover Certificate is to provide a record that the scaffold:

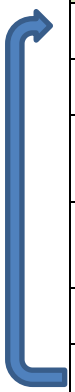
- Has been erected to the agreed specification;
- Has been left in a condition suitable to perform the duty for which it is intended; and
- Complies with Statutory Regulations and any Local Authority requirements.

At the hand-over stage, the responsibility for the completed scaffold is transferred from the subcontractor to Unitas. This stage is important because it offers the opportunity for the exchange of information that can avoid the more common causes of scaffold collapse, such as overload and unsafe alteration of the scaffold.

When each scaffold is completed, a competent employee of the Scaffolding Contractor must inspect the scaffold for compliance with regulations and codes of practice, and then complete a scaffold Handover Certificate. The scaffold should then be inspected by the Unitas appointed Scaffold Inspector and the first entry made in the statutory scaffold inspection register (form SHEMS-FOR-GR-065).

All Scaffolding should use a ‘DO NOT USE’ notice for restricting access to the scaffold until the scaffolding has been inspected and handed over for use.

Flow-Chart of the Handover Process



Action	Who By (**LOW** risk)	Who By (**MEDIUM** & **HIGH** risk)
Inspection of scaffold for compliance	Scaffold Contractor	Scaffold Contractor
Completion of a scaffold Handover Certificate	Scaffold Contractor	Scaffold Contractor
Independent Inspection of scaffold	-	Unitas Scaffold Inspector
Entry in Statutory Scaffold Inspection Register	Scaffold Contractor	Unitas Scaffold Inspector
Issue of Permit To Load	TWC (if required)	TWC
Updated tag type system insert (if used)	Scaffold Contractor	Scaffold Contractor
Undertake adaptation of scaffold as direct by	Scaffold Contractor	Scaffold Contractor

Unitas		

Note: Handover process gets repeated after every significant adaptation.

12.5 Statutory Scaffold Inspections

Statutory inspections of the scaffolding shall take place at least every 7 days, or after alterations or adaptations, or after any event likely to have affected the scaffolds stability. These inspections must be recorded on the Report of Inspection - Scaffolds (Form SHEMS-FOR-GR-065). Project Register (SHEMS-REG-GR-090) provides guidance and details of statutory inspection requirements.

The tag type system insert (if used) will also be updated to record the inspection. Any tag system is a supplementary check only and does not replace the statutory inspection and report, as required within the Work at Height Regulations 2005.

All scaffolds are temporary works and should be assessed as either a **HIGH** or **MEDIUM** or a **LOW** risk by the TWC, in accordance with the Temporary Works Standard (SHEMS-STD-GR-048).

Statutory inspections should NOT be carried out by the scaffold contractor who erected the scaffold, unless the scaffold is assessed to be a **LOW** risk (risk class as defined by the TWC).

For **LOW** risk scaffolds (i.e. typically TG20 Compliant Scaffolds and System Scaffolds that have no more than 5 lifts), the scaffold contractor who erected the scaffold may carry-out the statutory inspections on behalf of Unitas. In these cases, the inspector must not be part of the scaffold team that erected the scaffold.

For **HIGH** or **MEDIUM** risk scaffolds, the inspector of the scaffold must be independent from the scaffolding contractor who erected it. These inspectors may be by in-house or independent inspectors, or by inspectors from another scaffold contractor.

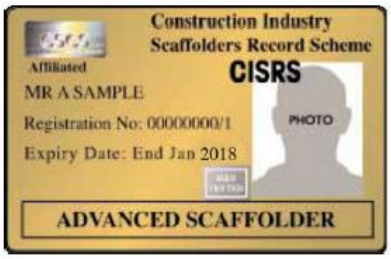
Where the scaffold is assessed to be a **HIGH** risk (risk class as defined by the TWC), the scaffold designer can be requested to assist in the inspection prior to it being loaded.

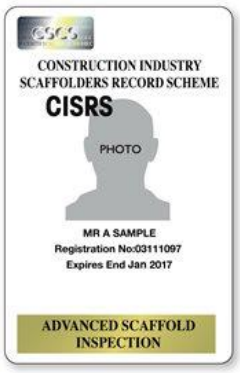
12.5.1 Competency of Scaffold Inspectors

All statutory scaffold inspections must be undertaken by a competent person. The resource and competency of the inspector should be proportionate to the risk level.

Minimum training for scaffold inspectors (whether they are in-house, independent or from a scaffold contractor) must be:

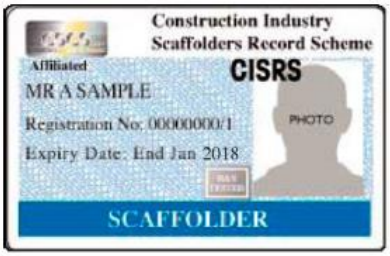
- For **HIGH** or **MEDIUM** risk scaffolds - CISRS Advanced Scaffolder or CISRS Advanced Scaffold Inspection;

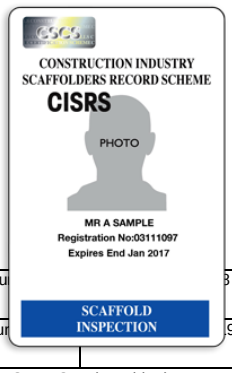




or

- For **LOW** risk scaffolds – CISRS Scaffolder or CISRS Basic Scaffold Inspection.





12.5.2 Proprietary System Scaffolds

The above inspection requirements also apply to this system scaffolds. In this case, the scaffold inspector should be competent for the role, have attended the 'Basic' Scaffold Inspection Course and be familiar with the particular system he is inspecting.

12.6 Permit To Load

In addition to the handover certificate from the scaffolding contractor, Permits to Load (form SHEMS-FOR-GR-063) are issued by the TWC for scaffolds, in accordance with the Temporary Works Standard (SHEMS-STD-GR-048). Only the TWC is authorised to issue Permits To Load.

Before a scaffold can be brought into use, a Permit To Load must be issued for all **HIGH** and **MEDIUM** risk class scaffolds. Similarly, a Permit To Load may be needed for **LOW** risk class scaffolds, however this is at the TWC's discretion.

12.7 Alterations

Incidents of unsafe scaffolds can occur because workers unskilled in scaffolding alter the structure. Workers make these alterations so that they can continue with their work unhindered, with ties and ledger bracing particularly susceptible to removal.

Options to reduce the frequency of unauthorised alterations are:

- Site inductions and toolbox talks to emphasise that untrained workers must not make alterations without the consent of Unitas.
- Implementing a system that makes it easy for workers using the scaffold to get alterations made by a competent person. Workers should know who to approach to request alterations. Alterations should be made quickly in response to a request. As far as possible the predictable alterations should be agreed in advance of hand-over.
- If there is not a trained scaffolder permanently on site then arrangements should be made with the scaffold contractor for regular modifications as required. On projects where the scaffold is continually changing there may be a need for a scaffolder to remain on site throughout particular periods.

Site management must make sure all subcontractors are aware that alterations to the scaffold must not be made without the consent of a person trained in scaffolding, and with reference to the scaffold designer.

All significant alterations or adaptations must be referred back to the scaffold designer (or selector in the case of TG20 compliant scaffolds) for their review, approval and any further modifications. Where design drawings have been produced, these may need amending and re-issuing.

12.8 Use & Maintenance

The foundations for the scaffold must be properly inspected and maintained during use.

Particular attention must be paid to the maintenance and removal of ties, which shall be strictly in accordance with the designer's requirements.

12.8.1 Tube & Fitting Scaffolds

Tube and fitting scaffolds must be used and maintained strictly in accordance with designer's requirements and TG20 guidance.

Scaffolds must not be overloaded. Users must be briefed on the safe working load (duty) of the scaffold – i.e. number of working lifts and load capacity (kN/m^2).

The scaffold must be properly controlled and maintained – with particular attention paid to foundations and ties.

Scaffold boards are to be BS 2482 boards and maintained to NASC TG6.

12.8.2 Proprietary System Scaffolds

Proprietary system scaffolds (including system scaffolds, loading bays and staircases) must be used and maintained strictly in accordance with manufacturers' requirements and guidance.

12.9 Dismantling

A plan for the dismantling phase of the scaffold must be part of the Safe System of Work for the scaffold. There is just as much chance of a scaffold collapse whilst dismantling it as there is when erecting it. The dismantling part of the scaffold plan must be available on site and be followed.

Particular attention must be paid to the sequencing of the removal of ties, which shall be strictly in accordance with the designer's requirements and be clearly stated in the dismantling part of the scaffold plan. This is normally the reverse of the installation sequence.

The dismantling plan must take into account any adaptations or alterations to the scaffolding since erection. The dismantling area must be clearly identified and signed. Those not involved with the dismantling are to be excluded from the area. Particular consideration must be given to members of the public.

A permitting system may be used to control the dismantling of scaffolds. When they are required, the Permit To Strike/Unload (form SHEMS-FOR-GR-064) is used for this purpose. The permits are issued by the TWC, in accordance with the Temporary Works Standard (SHEMS-STD-GR-048). Only the TWC is authorised to issue this permit.

Before a scaffold can be dismantled, a Permit To Strike/Unload must be issued for all **HIGH** and **MEDIUM** risk class scaffolds. Similarly, a Permit To Strike/Unload may be needed for **LOW** risk class scaffolds, however this is at the TWC's discretion.

13 Review of Scaffold Contractors Performance

The performance of the scaffold contractor should be assessed upon completion of their contract. A sample review form is provided below. Any significant failings should be taken into consideration before employing the contractor on subsequent projects.

14 Banned Components

The following components are not allowed on Unitas sites:

- "Drop-in" expansion anchors in brickwork;
- Type A scaffold boards (all boards must be to BS 2482).
- Expanding Joint Pins; and
- Reveal ties.

15 Documentation

The documentation that should typically be available to demonstrate that the scaffold has been managed in accordance with this standard includes:

- TW Control Register – recording each scaffold as an item of TW, together with its risk class and design check category – form SHEMS-FOR-GR-060;
- TW Design Brief – Scaffold Brief, communicating design requirements to the Scaffold Contractor – form SHEMS-FOR-GR-061;
- Design information – compliance sheet, bespoke design drawings, manufacturer's or supplier's instructions for erection / installation;
- Design Check – Design Check Certificate or other suitable documented evidence – form SHEMS-FOR-GR-062;
- Safe System of Work - Scaffold Plan (method statement), risk assessments and Rescue Plan;
- Assessment of foundations and supporting structure(s);
- Evidence of competency of scaffold supervisor and team;
- Pull-out testing results for ties – test reports and calibration certificates for test machine;
- Handover certificate – a record that the scaffold has been erected to the agreed specification;

- Statutory Inspection records - form SHEMS-FOR-GR-065;
- Permit To Load - form SHEMS-FOR-GR-063;
- Permit To Dismantle - form SHEMS-FOR-GR-064; and
- Review of Scaffold Contractors performance – see Checklist in Appendix A.

16 References & Further Guidance

16.1 External References

The external documents that can provide useful guidance regarding scaffolds include:

16.1.1 HSE

- HSE Scaffold Checklist.
- HSE HSG 150 Health & Safety in Construction.
- HSE HSG 151 Protecting the Public.
- HSE HSG 33 Health & Safety in Roof Work.
- HSE INDG 401 Working at Height – A brief guide.
- HSE INDG 284 Working on Roofs.
- HSE L163 Managing H&S in Construction.
- HSE CIS 47 Inspections & Reports.

16.1.2 British Standards

- BS EN 12810-1 & 2 Façade Scaffolds made from prefab components.
- BS EN 12811-1 Temporary work equipment - Scaffolds.
- BS EN 13374 Temporary Edge Protection Systems.
- BS 2482 Specification for Timber Scaffold Boards.
- BS 5975 Code of practice for temporary works procedures and the permissible stress design of falsework.

16.1.3 NASC Documents

- NASC SG4:15 Preventing falls in scaffolding.
- NASC SG7:14 Risk assessments and method statements.
- NASC SG10:14 Use of Brick Guards.
- NASC SG14:10 Safety Nets.
- NASC SG16:14 Management of fall protection equipment.
- NASC SG19:17 A guide to formulating a Rescue Plan.
- NASC SG25:14 Access and egress from scaffolds.
- NASC SG27:09 Temporary Edge Protection on open steelwork.
- NASC SG28:09 Scaffolds for constructing Timber Frame Buildings.
- NASC SG29:08 Internal edge protection on scaffold platforms.
- NASC SG32:11 Inside Board Brackets (Hop-ups).
- NASC SG33:14 Loading Bays.
- NASC SG34:11 Protection of the Public.
- NASC SG35:11 Handover of Scaffold Structures.
- NASC TG3:11 Temporary Rubbish Chutes.
- NASC TG4:11 Anchorage Systems for Scaffolding.
- NASC TG6:10 Maintenance of Scaffold Boards.
- NASC TG9:12 Temporary Roofs & Buildings.
- NASC TG12:10 Tying down of scaffold boards.
- NASC TG16:14 Anchoring to the Ground.
- NASC TG17:15 Identification of Couplers
- NASC TG20:13 Operational Guide – Good practice for tube and fitting scaffolding.

16.1.4 Other Sources

- TWf 16.041 - A Guide to Managing Scaffolding.
- CISRS CAP 609 – General Information Booklet.
- JCOP 2015 Fire Prevention on Construction Sites

16.2 Internal References

The internal documents that should be used regarding scaffolds include:

16.2.1 Standards

- SHEMS-STD-GR-009 Competency, Training & Appointments Standard.
- SHEMS-STD-GR-048 Temporary Works Standard.
- SHEMS-STD-GR-049 Work at Height Standard.
- SHEMS-REG-GR-090 Project Register.

16.2.2 Forms

- SHEMS-FOR-GR-060 Temporary Works Control Register.
- SHEMS-FOR-GR-061 Temporary Works Design Brief.
- SHEMS-FOR-GR-062 Temporary Works Design Check Certificate.
- SHEMS-FOR-GR-063 Temporary Works Permit To Load.
- SHEMS-FOR-GR-064 Temporary Works Permit To Strike/Unload.
- SHEMS-FOR-GR-065 Report of Inspection for Scaffolds.
- SHEMS-FOR-GR-144 TW Checklist – Access Scaffolds.

16.2.3 Minimum Standards

- SHEMS-MST-DPS-0006 Tethering of Tools.
- SHEMS-MST-DPS-0016 Preventing Unauthorised Access from Occupied Premises onto Scaffolding.
- SHEMS-MST-DPS-0021 Roof Slab and Floor Edge Protection.
- SHEMS-MST-DPS-0047 Temporary Works Design Briefs.
- SHEMS-MST-DPS-0048 Temporary Works Element Standards.
- SHEMS-MST-DPS-0049 Temporary Works Foundations.
- SHEMS-MST-DPS-H-0060 Scaffold Management.

Appendix A – Sample Scaffold Contractor Performance Review Form

1	Has the scaffolder worked in full compliance with SG4, provide details?	
2	Are Advanced Guardrail Systems used and if so have these been made available at all times?	
3	Have there been any concerns with the scaffold not being built in-line with the approved design to TG20?	
4	Have you had any concerns over the designed scaffold for whatever reason?	
5	Have the design drawings provided been available for inspection and review before works commenced on site?	
	Are design drawings marked 'FOR CONSTRUCTION'?	
6	What is the quality of scaffold boards, fittings and tubing used on your site?	
7	Was a full time CISRS Advanced Scaffolder provided for the duration of the works to act as the supervisor?	
	Was the Supervisor trained at least to SSSTS and provided evidence?	
8	Has the Advanced Scaffolder provided Handover Certificates in plenty of time?	
9	Did all scaffolders and labourers turn up for the SHE induction with a valid CISRS Card?	
10	Were you provided with evidence a harness inspection was taking place every 6 months?	
11	How frequent did you receive a copy of the scaffold contractor Health & Safety Advisor Inspection of his work area and is this report comprehensive detailing the relevant issues?	
12	How well does the scaffolders react to safety critical works following Unitas SHE Inspections?	
13	Are you satisfied with the SHE performance of this contractor and why?	
14	Would you work with this scaffolding contractor again now knowing his overall SHE performance?	
15	Were ALL scaffolders directly employed, if not what was the ratio? Directly Employed / Agency / Self-employed.	
16	Were the same scaffolders used throughout or forever changing? Scaffolder turnover?	
17	Have scaffolders been trained in the installation of the type of anchor fixings being used for ties on this site? Evidence?	
18	Have those carrying out "proof pull tests" to TG4 been trained by the manufacturer of the test equipment? Evidence of training?	
19	Please enter any other comments you wish to make here.	

Appendix B – Example Compliant Scaffold Selection Information

Independent Tied Scaffold

Project Name: .....

Scaffold Location: .....

Scaffolder: .....

Contract No. .....

Scaffold Type: .....

Working Load

- Very Light Duty Scaffolding (0.75kN/m^2) ☐
- Light Duty Scaffolding (1.5kN/m^2) ☐
- General Purpose Scaffolding (2.0kN/m^2) ☐
- Heavy Duty Scaffolding (3.0kN/m^2) ☐

Tube Material

- Type 4 Galvanised Steel ☐
- 3.2mm High Tensile Steel ☐

Façade Permeability

- Impermeable façade ☐
- Permeable façade ☐

Surroundings

- Country ☐
- Town or Woodland ☐
- City ☐
- Sea ☐

Site Location

- Site address .....
- Wind factor ..... metres/second
- Topography
  - Altitude ..... metres above sea level
  - Topography Factor, T_{wind} .....
- Seasonal Factor
  - Winter ☐
  - Spring ☐
  - Summer ☐
  - Autumn ☐

Person using the E-Guide: .....