



Scaffolding

Safe Work Procedure

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Scaffolding

HSE Requirements for Erection, Dismantling & Modification

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1 Scope

This Safe Work Procedure applies to erection, disassembling and modifying of scaffolds by a scaffolding CONTRACTOR. It does not apply to the use of scaffolds by further personnel involved in construction and commissioning (refer to &A?-W-SC 9606 "Working at Height").

This Safe Work Procedure must apply to all projects where COMPANY has an overall responsibility for the monitoring and control of construction and commissioning.

In addition to typical construction sites this Safe Work Procedure also applies to all prefabrication and sub construction areas (e.g. Package Units) in COMPANY's area of responsibility.

2 Purpose

This Safe Work Procedure defines responsibilities, workflow and technical requirements with regard to scaffolds and scaffolding work on construction sites under COMPANY's responsibility.

The purpose of this Safe Work Procedure is to set out clear procedures and safety requirements for erection, disassembling and modifying of scaffolds at site in order to ensure that scaffolds are in a safe condition during the complete construction and commissioning period and that the related works are carefully planned and safely executed to prevent injurious accidents, occupational illnesses and any further detrimental consequences.

3 Definitions

	<i>Description</i>
Competent Person	A competent person is <ul style="list-style-type: none">- qualified (by recognised degree, certificate, professional standing or by extensive knowledge or training),- professionally experienced,- capable of identifying existing and predictable hazards in the surroundings or working conditions which are dangerous to employees related to the subject matter.
Scaffolding work	erection, disassembling and modifying of scaffolds

In the following referenced document numbers with the originator code "&A?" in this project always refer to project documents with entity originator code of this document.

4 Referenced Documents

&A?-W-PQ 9601 (EN)	HSE Program Site
&A?-W-SC 9601 (EN)	Permit to Work System
&A?-W-SC 9606 (EN)	Working at Height
&AZ-W-QR 9604 (EN)	Job Safety Analysis

5 Responsibilities

5.1 COMPANY's Project Construction Manager

COMPANY's Project Construction Manager is responsible for the implementation and consideration of this Safe Work Procedure during the planning, tendering and execution of the project. COMPANY's Project Construction Manager must evaluate the necessity of the implementation of this Safe Work Procedure.

5.2 COMPANY's Site Manager

COMPANY's Site Manager is responsible for the implementation and inspection of the compliance with this Safe Work Procedure on site.

5.3 Issuer of the Work Permit

The Issuer is responsible for the time schedule of relevant activities, the coordination with parallel work, the definition of the defined measures in the work permit and the review of CONTRACTOR's risk assessment, Job Safety Analysis, work procedures or other relevant documents regarding working at height.

5.4 Supervisor

COMPANY's and CONTRACTOR's Supervisors are responsible for the inspection of the compliance with this Safe Work Procedure on site in their scope of work.

5.5 COMPANY's Site HSE Manager

COMPANY's Site HSE Manager has the duty to monitor the adherence to the following regulations and to monitor personnel carrying out scaffolding work. He must support the Site Manager and all supervisors during the implementation of the following regulations.

5.6 CONTRACTOR

CONTRACTOR carrying out elevated work must fulfil the following requirements:

- CONTRACTOR must organise the activities acc. to this Safe Work Procedure.
- CONTRACTOR must adhere to local requirements with regard to scaffolding work.
- CONTRACTOR must submit the following documents to COMPANY before beginning elevated work and must submit updates without delay.

These required documents are:

- CONTRACTOR's medical fitness certificates acc. to chapter 6.1
- CONTRACTOR's training record and certificates acc. to chapter 6.1
- CONTRACTOR's risk assessment acc. to chapter 5
- CONTRACTOR's work procedures for scaffolding work
- CONTRACTOR is responsible for its SUB-CONTRACTORS and must transfer the requirements of this Safe Work Procedure to its SUB-CONTRACTORS.

5.7 CONTRACTOR's HSE Manager and Safety Officers

They have the duty to monitor personnel during scaffolding work. They must check defined measures and support the supervisors. They must report problems regarding to working at height to COMPANY's Site HSE Manager immediately.

6 Risk Assessment and Permit to Work System

The scaffolding CONTRACTOR must prepare a documented risk assessment including erection, modification and disassembly of scaffolds prior to commencement of work. Depending on the results, preventive measures must be defined. Herein the described measures of chapter 6 must be considered and implemented.

The risk assessment is a precondition for issuing COMPANY's work permit (acc. to &A?-W-SC 9601 "Permit to Work System").

7 HSE Requirements

7.1 General Requirements

Personnel erecting, dismantling and altering scaffolds must be

- medically fit for scaffolding work, especially for working at height,
- trained by a competent person and
- supervised by a competent person.

The training must address hazards such as fall protection, electrical safety precautions, falling object protection, and scaffold use and load capacity. This training must be provided to all personnel who work with scaffolding.

Retraining will be necessary if:

- changes at the worksite create a hazard for which the employee has not been previously trained;
- changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard for which the employee has not been previously trained;
- where employees working with scaffolds show signs that they have not retained the required proficiency from their training.

The scaffolding CONTRACTOR must submit his certificates and training records to COMPANY before starting his work to prove that the scaffolding works are performed by trained personnel and supervised by a competent person.

The scaffolding CONTRACTOR is responsible for storage, erection, modification and dismantling of scaffolding. Nobody else but the scaffolding CONTRACTOR is allowed to modify the scaffolding.

The scaffolding CONTRACTOR is responsible for the design, the installation, the support, the bracing and the anchorage and that the scaffold is fit for purpose and safe to use. The scaffolding CONTRACTOR must ensure that the stability is given for the anticipated construction period.

The scaffolding CONTRACTOR must have available the relevant and necessary documentation for the scaffolds erected by him, e. g. standards, licences, instructions for assembly and use, static calculations and technical plans.

A static calculation is always necessary in the case of deviations from the stipulations of the applicable standard, the licence or the "instructions for assembly and use".

The scaffolding material must be stored properly to avoid any damage. Damaged material must be removed from service immediately.

Scaffolds must be inspected prior to first use, after modification and periodically, but no less than on a weekly basis by the scaffolding CONTRACTOR's competent person and reported in an inspection protocol to COMPANY's Site Management and on the scaffold tag.

7.2 Technical Requirements

Scaffolds must comply with any of the following scaffolding standards and COMPANY's regulations. Applying different standards must be agreed with COMPANY in advance.

No.	Title
EN 39	Loose steel tubes for tube and coupler scaffolds – technical delivery conditions
EN 74	Metal scaffolding – couplers – specification for steel couplers, loose spigots and base plates for use in working scaffolds and false work made of steel tubes
(BS, DIN) EN 1004	Mobile access and working towers made of prefabricated elements – materials, dimensions, design loads, safety and performance requirements
(BS, DIN) EN 1263	Safety Nets

(BS, DIN) EN 12810	Facade scaffolds made of prefabricated elements
(BS, DIN) EN 12811	Temporary works equipment
(BS, DIN) EN 12812	False work – performance requirements and general design

Table 1: Scaffold Standards - Extract (July 2011)

If not already stipulated by the applicable standard additionally the following minimum requirements must be met:

- Every working platform must be completely planked, boarded or plated.
- Every board or plank forming part of a working platform must be of sound construction, adequate strength, free from patent defects and rest securely and evenly on its supports.
- Loose scaffold boards must be secured to prevent them from unintended shifting and lifting.
- Every side of a working platform (except for the working side, if opening to wall, equipment etc. is max. 0.30 m / US: 18 inches) must be provided with suitable guardrails (height at least 1m/42 inches with hand- and mid rails and toe boards).
- Space between platform and wall of a building or structure should be as small as practicable (max. 0.30m/18 inches).
- The scaffold must be effectively braced to ensure stability of the whole structure.
- The bracings must extend from the base to the top of the scaffold.
- Ties and anchors must be installed in regular distances to secure the scaffold from tipping over and buckling.
- Scaffolds shall not have hoists attached to them unless specifically designed for that purpose.
- Safe access to and egress from place of work must be provided (stairs, ladders etc.).
- Preferably ladders should be installed inside the scaffold.
- Ladders (internal and external) must only be provided in a way that the maximum height when standing on the ladder above a stable platform or ground is 5m/16ft. If this is not possible due to the type of scaffold, lifelines must be provided and a safety harness must be applied when moving up- or downwards the ladder.
- Near the top exit of a ladder an appropriate installation or device with a minimum height of at least 1m/3ft. above the platform must be provided to enable a safe egress and access.
- Ladders, stairs etc. for access/egress to/from platforms must be provided in an amount so that the work areas and walkways can be reached without going too long distances. Ladders, stairs etc. should be provided at least every 20m/65ft.
- If - as an exception - a scaffold does not meet the requirements regarding fall protection the application of personal protective equipment against fall from a height must be stipulated (preferably indicated on the scaffold tag by an inscription - e.g. "Full-Body Harness required" - on a yellow stripe).
- After completion of the scaffolding work and a final inspection by the competent person scaffolds must be clearly marked by the scaffolding CONTRACTOR with scaffold tags (usually green or with a green stripe on it) near each access ladder or stairs.
- If scaffolds are not safe to use they must be tagged indicating that access to the scaffold is not allowed (usually red tag and inscription, e.g. "not for use", "do not enter").
- The scaffold tag must cover the following information:
 - Scaffolding CONTRACTOR
 - Name and signature of competent person, who inspected the scaffold
 - Date of erection
 - Date of latest inspection
 - Max. load capacity (kg/m²) / (lbs/ft.²)
 - Additional safety requirements if necessary (e.g. if wearing of full body harness is required)

Regarding electrical safety, especially with respect to distances to overhead power lines and further protective measures refer to &A? W-SC 9606 'Working at Height', section 'Protection against Electrical Hazards' and &A? W-PQ 9601 'HSE Program Site', section 'Electrical Safety'.

7.3 Special Technical Requirements for Mobile Scaffolds

- Mobile scaffolds must be erected according to manufacturer instructions or to applicable standards (see table 1 "Scaffold Standards").
- The erection of mobile scaffolds is only allowed on a hard, plane floor (e.g. cement floor).
- Traversing units like rolls or castors must be firmly attached to the equipment.
- Traversing units must be equipped with effective fixing brakes or swivel locks, at least 2 diagonal located on them.
- The elevated platform must be levelled.
- Climbing ladders or stairways must be provided for proper access and egress.
- Climbing ladders must be affixed or built into (and not outside) the scaffold, integral staircases are the best choice.
- Ladders must be located in a way that its use will not have a tendency to tip the scaffold.
- A landing platform must be provided at intervals not to exceed 5m
- A three sided protection must be provided (top rail, mid rail, toe-board) on all open sides.
- Hoists must not be attached on mobile scaffolds.
- Scaffolding for tanks must be built according to a specific plan which must be approved by COMPANY

7.4 Erection and Disassembly of Scaffolds

- Personnel erecting scaffoldings must wear safety harnesses during the scaffolding work and hook on whenever possible (regarding the use of personal protective equipment against fall from a height the regulations of &A?-W-SC 9606 "Working at Height", section 6.3 apply).
- During erection, modification and dismantling of scaffolds they must be tagged indicating that access to the scaffold is not allowed (usually red tag and inscription, e.g. "not for use", "do not enter").
- Even on other levels than the ones where scaffolding work is going on, no activities must be performed.
- Exceptions from the above-mentioned regulations are possible if it is ensured by appropriate safety precautions that personnel working on the scaffold are not endangered by the ongoing scaffolding work. Appropriate safety measures are e.g.
 - spatial separation of construction work and scaffolding work area,
 - barricading of work areas to avoid that personnel enters the hazardous area,
 - visual check of scaffold by scaffolding CONTRACTOR's supervisor prior commence of scaffolding work to ensure that no other activities are going on in hazardous area.
 - scaffolding activities must not affect safety and stability of the construction work area

The necessary safety measures have to be defined on the basis of a Job Safety Analysis (JSA) acc. to &AZ-W-QR 9604 to be prepared by CONTRACTOR or - if more than one CONTRACTOR is involved - by COMPANY.

- Areas where scaffolding work is carried out must be clearly marked by warning signs and/or must be cordoned-off. The same applies to areas that can be affected by the scaffolding work, especially due to falling material.
- The scaffolding CONTRACTOR has to ensure that personnel not involved in the scaffolding work does not enter the marked and/or barricaded area.
- The ground or structure on which a scaffold is constructed must be solid, levelled and rammed to give a hard surface, and must be strong enough to keep the scaffold upright.
- Scaffold material transport must be performed in a way that the risk of falling material is reduced to its minimum.
- For vertical transport preferably cranes, lifts or hoists should be used.
- During vertical manual transport of scaffold material at least one scaffolders must stand on each level.
- For manual transport and lifting of scaffold material like fittings, couplers, small tubes, pipes and scaffold hand tools appropriate canvas bags, which must be firmly sealed from the top, must be used.

- Scaffold bags should only be used for transportation and lifting of small scaffold material and must not be overloaded or overfilled and must be firmly closed.
- Prior start of dismantling a final scaffold inspection must be conducted
- Loose scaffold boards and equipment must be affixed, loose material must be removed
- Throwing down of parts like fittings, ledgers, tubes, rails, couplers etc. from the scaffold is not allowed.
- Any alteration – modification in approved scaffolding is not permitted. Required modifications shall be controlled by work permit system and is subjected to specific safety precautions by the authorized personnel.

8 Documentation and Records

This document and relevant records shall be controlled as defined in "Preparation of Internal Documents" (&AZ-Q-PP 1050.060.010 (EN)), "Distribution of Documents" (&AZ-Q-PP 1050.063.010 (EN)) and "Archiving of Documents" (&AZ-Q-PP 1050.066.010 (EN)).

9 Revisions

Proposals for revisions of this Safe Work Procedure should be forwarded in writing to the Global Construction functional unit 'Construction and Commissioning HSE'.

10 Distribution

This Safe Work Procedure will be administered and distributed by the Global Construction department 'Construction and Commissioning HSE'.

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