



Practical Guideline “Risk assessment”

for the erection, adaptation and
dismantling of working and protective
scaffolds

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Practical Guideline “Risk assessment”

**for the erection, adaptation and
dismantling of working and protective
scaffolds**

Foreword

The UEG Working Committee European Regulations has set up a working group to draw up a guide/tool for the preparation of risk assessment in connection with the erection, alteration, and dismantling of working and protective scaffolds.

This Guideline focuses on effectively reducing risk rather than tolerating or accepting risk. After diligent review of legislation, standards, and other documentation, the UEG agreed that tolerating and accepting risk that can be eliminated or effectively reduced is not acceptable from a social or economic point of view. The UEG agreed to take a fundamental approach to risk assessment that focuses on prevention of harm and protection of workers and can be applied to any type of risk.

The focus on hazard identification and elimination and effective control of risk from hazards that cannot be eliminated is the keystone of this Guideline. Eliminating a hazard eliminates risk associated with that hazard.

The European Directives on minimum health and safety requirements for the use of work equipment and the proposals from Norway, the UK and Germany will serve as a basis.

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Introduction

The legal requirements oblige each employer/scaffolding contractor to conduct a risk assessment. This also applies to the employer/scaffolding contractor of a small business. The responsible person must determine which occupational health and safety controls are necessary when assessing the work-related hazards. Risk assessment is therefore an essential basis for defining protective measures. It should help to design them purposefully and effectively. The obligation on risk assessment has recently become more visible as public awareness of the impact of workplace accidents, injuries and illnesses on society and the economy has increased. Not least for this reason, it is advisable for employers to look closely at this issue and examine how they can take appropriate account of stress factors within the framework of their occupational health and safety.

For operational practice, the question arises as to how the obligation for risk assessment can be properly managed in accordance with the statutory provisions.

The guideline can only provide a basic structure with explanations of the selected focal points, since in some member states different legal regulations and procedures already in place must be observed. In addition, not all conceivable hazard factors can be considered in a comprehensive operational risk assessment. It was therefore agreed that the focus should initially be on the essential points in connection with the erection, alteration, and dismantling of working and protective scaffolding in relation to the activities involved.

This Guideline specifies program requirements for the identification and elimination of hazards and for assessment and control of risk associated with remaining hazards that cannot be eliminated.

The purpose of this Guideline is to enable an organization to use hazard identification and risk assessment processes to prevent occupational fatalities, injuries, and illness and/or reduce the severity of harm related to occupational activities and work environments through hazard elimination and risk controls.

Improvement of injury prevention strategies is possible by proactively identifying hazards, hazard elimination (where practicable), use of appropriate risk assessment techniques and implementation of risk control strategies.

This Guideline recognizes the importance of management commitment, leadership, worker participation, and continuous improvement.

This Guideline was developed by the UEG using the following principles:

- Hazard and risk are not synonymous
- Where hazard exists, risk exists
- Risk is a function of the severity of harm and the likelihood of the occurrence of that harm

- Where hazards are eliminated, risk is eliminated, and
- Where hazards exist, risk controls are required

This Guideline focuses on:

- Identification of hazards and the risk factors that can contribute to the occurrence of injury or illness
- Assessment of risk and contributing factors, and
- Determination of means to eliminate hazards and effectively control risk associated with hazards that cannot be eliminated

Risk assessment attempts to answer the following fundamental questions:

- What can happen under what circumstances?
- What are the possible consequences?
- How likely are the possible consequences to occur?
- Has an effective level of risk reduction been achieved or is further risk reduction required?

It should also be considered that there are/may be additional and supplementary provisions in individual member countries.

Structure of the guideline

This guideline is divided into two parts. Part 1 aids on the introduction and review of a health and safety organisation for workers at work. Part 2 serves scaffolding companies as an aid to action in the preparation of an activity-related risk assessment for the erection, adaptation and dismantling of working and protective scaffolds as well as for the transport and storage of scaffold components. Therefore, only the associated essential hazard factors, e.g. falls from heights are dealt with. Other company-related areas of activity, such as office workplaces, are not included in this technical information.

Scope

This guideline is intended for employers/contractors and persons who are responsible for carrying out the risk assessment and for employees who are involved in the erection, alteration and dismantling of working and protective scaffolds.

Note:

Information on the regulations to be observed during the risk assessment for these areas can be found in the respective laws and regulations of the individual member countries (see Table 1).

Table 1: Legislation in the members' countries

Country	Laws, regulations	Further rules and regulations
Bulgaria	Risk assessment general regulations: • Law on Health and Safety at Work Decree No 5 of 11.05.1999 on the procedure, nature and periodicity frequency of risk assessment Scaffolds general regulations • Regulation No 2/2004 concerning minimum requirements for healthy and safe working conditions in Execution of construction and assembly activities (published by DV No. 37/2004) • Regulation No. 7/1999 on the minimum requirements for healthy and safe working conditions for the workplaces and in the use of work equipment (published DV No 88/1999)	Recommendations: Instructions with proven methods for working at height. Optional guide to good practice in the implementation of Directive 2001/45/EC (Working at a height) – similar to BGI 663
Finland	• Occupational Safety and Health Act • Government Decree on the Safety of Construction 205/2009 • Government Decree on the inspection and the safe use of tools	
France	Risk assessment general regulations: • Clauses L4121-1 to L4121-5 from the Labor Code ("Code du Travail") • Clauses R4121-1 to 4121-4 from the Labor Code ("Code du Travail") • Decree 2001-1016 of 5 November 2001 for establishment of a unique document of risk assessment • Circular 6 from Labor ministry which details the previous obligations Scaffolds general regulations • Clauses R4323-69 to R4323-80 from the Labor Code ("Code du Travail") • Order of December 21, 2004 relating to scaffolding verifications. • Circular DRT 2005/8 of June 27, 2005 relating to the implementation of the decree of September 1, 2004 and the decree of December 21, 2004 • Additional circular letters: • July 13, 2006 relating to the use of so-called fan scaffolding, • DGT no 08 of April 16, 2009 relating, among other things, to scaffolding on consoles.	INRS ED 840 INRS ED 887 INRS ED 886 Recommendations: - R408 - R457

Country	Laws, regulations	Further rules and regulations
Germany	• Working Conditions Act • Occupational safety law • Workplace ordinance • Industrial safety regulation • Screen work regulation • <i>Regulations</i> on Hazardous Substances • Noise and vibration occupational health and safety regulations • Load handling regulation • youth employment protection act • <i>Regulations</i> on the Protection of Mothers at Work • <i>Regulations</i> on Occupational Health Precautions • among other things	• Rules and regulations for occupational health and safety regulations • Technical rules for operational safety, e.g. TRBS 2121-1 • DGUV regulation 1 • DGUV regulation 2
Luxembourg	1) Code du Travail a. Artikel L.312-1 Abschnitt 1 b. Artikel L.312-2 2) Großherzogliche Verordnung vom 4. Nov. 1994 Modifiziert und angepasst am 17. August 1997 Modifiziert und angepasst am 12. März 2004 Anhang II und III 3) Großherzogliche Verordnung vom 27. Juni 2008 Anhang IV / Teil B / Abschnitt II Guidelines AAA: 1) Risk Prevention Stand Frames 2) Risk Prevention Mobile scaffold towers 3) Risk Prevention Safety belt and fall arrest systems 4) Risk assessment and risk management 5) R01 General recommendations for accident prevention 6) R04 Ladders and steps – Recommendations for accident prevention 7) R17 Facade scaffolds – Recommendations for accident prevention 8) R18 Mobile scaffold towers – Recommendations for accident prevention	
Netherlands	Arbowet: legislation for healthy and safe working; completed by the industry in the form of a Scaffolding directive (Richtlijn Steigers), which acts as a health and safety catalog Bouwbesluit: building regulations for construction works	The state of the art for steel scaffolding has been published by VSB and Bouwend as scaffolding guidelines (see also: www.richtlijnsteigers.nl)

Country	Laws, regulations	Further rules and regulations
Norway	General: Working Environment Act. Regulations concerning organisation, management and employer participation. (No. 1355). Work at height: Regulations concerning the performance of work. (No. 1357).	
Poland	• The Labor Code • Ordinance on general occupational health and safety at work regulations • Ordinance on training in the field of health and safety at work • Ordinance on safety and health at work in manual handling of loads and other work related to physical effort • Ordinance on the list of prohibited activities and the conditions of employment of young people • Ordinance on determine the circumstances and causes of accidents at work • Ordinance on health and safety inspectors/-specialists • Ordinance on health and safety at work involving exposure to noise or mechanical vibration • Ordinance on health and safety at work involving presence of chemical agents	• PN-N-18002:2011 Polish Standard – Occupational health and safety management systems – General guidelines for risk assessment
Sweden	AFS 2013:12 Ställningar AFS 1999:03 Bygg och anläggningsarbete	«Rörställningar-Utvärdering av typefall» (SP Arbetsrapport 2006:58) Säkra ställningar-Vägledning till Arbetsmiljöverkets föreskrifter om ställningar, AFS 2013:4, H456
Switzerland	SIA 222 SIA 177 SIA 260 SIA 261 SIA 263 SIA 265 SIA 462 SIA 465	Swiss Accident Insurance Fund (SUVA) Different themes see website.
United Kingdom	• The Factories Act • Work at Height regulations • CDM regulations • Manual handling • RIDDOR • PUWER • LOLER • COSHH • Noise and Vibration • Dust	Numerous industry guidance

Further notes and information on the use of working and protective scaffolds can be found in the UEG “**Practical Guideline for the supply/provision and use of working and protective scaffolds**” and in the respective technical rules and technical information of the members’ countries.

Definitions and explanations of terms

Risk assessment –

the overall process of hazard identification, risk analysis, and risk evaluation.

Risk analysis –

a process for comprehending the nature of hazards and determining the level of risk.

Risk evaluation –

the process of comparing an estimated risk against given risk criteria to determine the significance of the risk.

Hazard –

a potential source of harm to a worker.

Risk –

the combination of the likelihood of the occurrence of a harm and the severity of that harm.

Dangerous work –

work involving hazards arising from the nature of the activity, the process, the substances and components used or the environment.

Dangerous work is, for example, work at height, which is why occupational health and safety measures are necessary here.

Workplace –

place within the control or responsibility of the company where a person is working.

Collective protective measures (CPM) –

it means measures designed for simultaneous protection of a group of people, including individuals, against dangerous and harmful factors, occurring individually or together in a workplace.

Note:

- 1. Side protection is a CPM that prevents falling from a scaffold*
- 2. Technical solutions are physical measures that eliminates a specific hazard. Guardrails are considered to be technical solution.*

Personal Protective Equipment (PPE) –

equipment designed and manufactured to be worn or held by a person for protection against one or more risks to that person's health or safety (see also REGULATION (EU) 2016/425 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL).

Code of practice –

a document that recommends practices or procedures for the design, manufacture, installation, maintenance, or utilization of equipment, structures, or products.

Competence –

a proven ability to apply knowledge and skills to the hazard identification and risk assessment processes.

Competent person –

a person who is knowledgeable about the risk assessment process and has a proven ability to apply the process by reason of education, training, experience, or a combination of these factors.

Remarks:

In some countries the term “skilled person” is associated with this. The risk assessment may only be carried out by competent persons. If the employer does not have the relevant knowledge, then he must seek expert advice.

The persons designated for the transfer of duties are competent and have the relevant specialist knowledge and practical experience to carry out the tasks incumbent upon them properly.

In addition, when carrying out scaffolding work, a competent person is required as a supervisor who has the necessary knowledge and experience in the field of scaffolding construction on the basis of his vocational training, professional experience or professional activity and is familiar with the regulations to such an extent that he can assess the working conditions before commencing work and check the specified safety measures when carrying out the work.

Qualified employees –

persons who have the necessary training, knowledge, skills and experience for the safe erection, alteration and dismantling of scaffolding.

Temporary works equipment –

works equipment provided for a limited time as a workplace, an access to a work place or temporarily supporting a permanent structure, or serving as a protective measure.

Note:

Suitable temporary works equipment is described by the standards in TC 53.

Part 1:

Occupational health and safety organisation

According to the respective national regulations, every Employer is obliged to guarantee the safety and health of his employees and to ensure this with the occupational health and safety organisation. The voluntary introduction and application of occupational health and safety management systems also makes it easier for small and medium-sized enterprises (SMEs) to fulfil their occupational health and safety obligations.

Note:

In Germany, for example, the LV 22 action instruction on the voluntary introduction and application of occupational health and safety management systems for small and medium-sized enterprises (SMEs) issued by the Federal States Committee for Occupational Health and Safety and Safety Technology (LASI) aids in this regard.

Part 1 of this guideline is intended to make it easier for scaffolding contractors to introduce and apply occupational health and safety management systems and to provide them with an effective instrument for improving occupational health and safety.

With the introduction of a company occupational health and safety management system and its consistent application, the employer/scaffolding contractor, together with his managers and employees, will minimise disruptions in operations through prevention and continuous, sustainable improvement of occupational health and safety, and optimise all work, processes and procedures.

The points and questions listed below are intended to serve the company as a self-assessment instrument for examining and improving the quality of the OH&S organisation.

What is the benefit of such a “self-analysis”?

- offers companies the opportunity to determine their own position on occupational health and safety,
- improves the occupational health and safety organisation,
- promotes trouble-free operation and product quality and thus the competitiveness of the company,
- helps to avoid costs caused by accidents or malfunctions,
- supports the systematic implementation of risk assessment,
- can also be used by larger companies to evaluate their suppliers, partner companies and contractors,
- is a good preparation for possible certification procedures,
- is the first step towards introducing an occupational health and safety management system.

Step 1:

Responsibility and assignment of tasks

The employer is responsible for occupational health and safety. In addition, managers may also be responsible for the resulting duties. The employer may also instruct reliable and competent persons in writing to assume responsibility for the occupational health and safety tasks incumbent upon them. For this reason, those responsible must know their tasks well so that they can carry them out.

What does the company look like?	Yes	Need for action
Are all managers informed about their duties in occupational health and safety?		
Are the areas of control and responsibility in occupational health and safety clearly defined and known?		
Are the areas of control and responsibility in occupational health and safety defined in writing?		

Step 2:

Control of tasks and obligations in occupational health and safety

Employers and managers regularly check whether those responsible are fulfilling their tasks and duties so that the transfer of tasks in occupational health and safety is effective. If necessary, improvement measures are defined.

What does the company look like?	Yes	Need for action
Do employers and managers regularly check that occupational health and safety is complied with in their area of responsibility?		
If necessary, are improvement measures defined and implemented?		

Step 3:

Fulfilment of organisational obligations with regard to occupational health and safety care

Health and occupational safety specialist advise and support the employer in his duty to ensure safe and healthy workplaces. Depending on the number of employees, various options are offered for organising company medical and safety care.

Are there any regulations and measures, in particular with regard to the	Yes	Need for action
Appointment of a medical specialist for occupational safety?		
Allocation of the assignment time of the basic care to company doctor/work safety specialist?		
Determination of the need and distribution of the tasks of the company-specific support?		
Written agreement with company doctor and occupational safety specialist on the tasks of basic care and company-specific care?		
Performing the tasks of basic care and company-specific care?		
Written reports from the company doctor and the occupational safety specialist?		
Support and cooperation?		
Has the health and safety committee been set up and is it functioning?		
Is the holding of regular health and safety committee meetings fixed?		

Step 4:

Qualification for occupational health and safety

Effective occupational health and safety requires thorough knowledge. It is therefore ensured that persons with occupational safety responsibilities (managers and employees) are sufficiently qualified (basic and advanced training).

How does the company comply?	Yes	Need for action
Are health and safety tasks delegated only to persons who are technically and personally suitable?		
Is the need for qualification regularly determined for all persons entrusted with occupational health and safety tasks?		
Are the necessary qualification measures carried out?		

Step 5:

Organisation and performance of the risk assessment

Workplace hazards affect the safety and health of workers, product quality and productivity. The employer therefore systematically assesses the hazards associated with work, defines the necessary occupational health and safety measures and documents them. The risk assessment identifies gaps to raise the potential for improvement.

How does the company comply?	Yes	Need for action
Is the risk assessment procedure organised? (responsibility, involvement, how, when, update/review)		
Has a risk assessment been carried out in which the hazards for all work areas and activities are fully identified and assessed?		
Have concrete measures been defined in this risk assessment and are they being implemented?		
Is the updating of the risk assessment (e.g. in the case of accidents, near accidents) ensured?		
Will the effectiveness of the measures be checked?		
Is the risk assessment documented?		

Step 6:

Instruction of employees

Only employees who are informed about hazards at their workplace and their duties in occupational safety and who know the necessary measures and company rules can work safely and healthily. The employer ensures that all employees receive regular training.

Do regulations and measures exist, in particular with regard to the	Yes	Need for action
Target group (who should be instructed)?		
Content (including employment restrictions)?		
Reasons for and intervals of implementation (e.g. once a year)?		
Responsibilities (who should instruct)?		
Documentation?		

Step 7:

Health and safety legislation

The requirements for occupational health and safety result from national legal regulations. In order to know the valid requirements and to take them into consideration. These should be systematically recorded and checked for relevant changes.

Are there regulations and measures in place, in particular for identifying and tracking changes?	Yes	Need for action
Of the regulations for occupational health and safety?		
Guidance considered to be best practice?		
Of the secured findings in the field of ergonomics?		
Is the practice-oriented handling of the legal provisions and the sublegal regulations on occupational health and safety regulated?		
Do specifications exist for processing new legal and technical requirements?		
Are the relevant health and safety regulations available?		
Are managers and employees with health and safety responsibilities informed and are the changes implemented in the company?		

Step 8:

Representation of interests

All responsible employees and the employees' union (if any) should support the employer in implementing the requirements of occupational health and safety in a practice-oriented manner.

Involvement of special functionaries	Yes	Need for action
Are representatives required for the health and safety of workers at work (e.g. safety representatives) are appointed? (responsibility, necessity, number, qualification, cooperation)		
Are company representatives and employee representatives involved in occupational safety issues?		

Step 9:

Communication and improvement

The knowledge and experience of all employees can be systematically used to improve occupational health and safety. The communication channels and contact persons are to be defined.

How does the company comply?	Yes	Need for action
Are there regulations on internal and external communication regarding occupational health and safety?		
Is it regulated / documented who passes which information on to external parties in which cases (e.g. accident reports)?		

Step 10:

Preventive occupational health care

Occupational health precautions serve to prevent work-related health hazards and the early detection of occupational diseases.

Are there any regulations and measures, in particular with regard to the	Yes	Need for action
Target group?		
What type of investigation?		
Reasons for and intervals of examinations?		
Responsibilities?		
Documentation?		
Is occupational health care organised with the support of the company doctor? (competence, group of persons, occasion, interval, information, implementation, control)		
Are employees informed about occupational health precautions and are they implemented?		
For activities requiring compulsory occupational health care, are only employees who have taken part in the provision employed?		

Step 11:

Planning and procurement

In order to enable safe and healthy working conditions at an early stage health and safety is taken into account from the planning and procurement stages.

Are there any regulations and measures, in particular with regard to the	Yes	Need for action
Planning processes for the construction and operation of workplaces (including work equipment)?		
Design of working procedures and processes?		
Procurement processes for work equipment and materials?		
Are workplaces, work equipment, working materials, working procedures and processes planned, designed or procured in such a way as to ensure safety and health protection at work?		

Step 12:

External companies and suppliers

External companies (e.g. sub-contractors, maintenance companies) and suppliers may pose special hazards on the premises or on construction sites. It must therefore be ensured that these companies are aware of and observe the occupational health and safety regulations.

How does the company comply?	Yes	Need for action
Are there regulations regarding the selection, contractual regulations, coordination and control of suppliers, external companies and temporary employment agencies?		
Are there clear task and competence assignments for co-operation with external companies and suppliers?		

Step 13:

Temporary workers and fixed-term workers

For persons who only work temporarily in the company, the same health and safety requirements apply as for their own employees. The employer shall therefore ensure that these persons are involved in occupational health and safety.

Do regulations and measures exist, in particular with regard to	Yes	Need for action
Instruction and training?		
Occupational health precautions?		
Personal protective equipment?		
Integration and equal treatment?		
Is a sufficient requirement profile drawn up for the deployment of temporary workers and is this made available to the temporary employment agency?		
Does the contract of assignment contain a sound agreement on health and safety at work for temporary workers?		
Are the temporary workers' workplaces visited by the temporary employment agency?		
Are temporary workers on an equal footing with the permanent workforce in terms of occupational health and safety?		

Step 14:

First aid and emergency plans

The preparation for all emergency measures (e.g. fire protection, rescue, evacuation) is part of the occupational health and safety.

Is the following regulated with regard to the organisation of emergencies and first aid?	Yes	Need for action
Responsibilities		
Procedure		
Complete in implementation and documentation		
Do regulations and measures exist for the appointment of representatives for the tasks of		
First aid		
Fire fighting		
Evacuation		

Part 2:

Guidelines for the preparation of a risk assessment

Introduction

The risk assessment is the core of the operational implementation of the legally required occupational health and safety plan. It serves the employer/scaffolding contractor to ensure the health and safety of employees during the erection, adaptation and dismantling of scaffolding by identifying in advance the hazards that typically occur during these activities and by taking appropriate measures to counter them. The central role of risk assessment also results from the fact that it forms the basis for various other operational processes such as operating instructions, work and assembly instructions or process descriptions.

It is an integral part of modern occupational health and safety law, which does not require typical protective measures to be laid down by law, but instead provides for comprehensive personal responsibility on the part of the employer who provides work equipment and allows it to be used. Effective occupational health and safety is to be achieved by the employer planning, implementing and continuously checking the effectiveness of the occupational health and safety measures required in individual cases by means of a systematic procedure tailored to the specific conditions in the company and carefully documenting this procedure for verification purposes.

The requirement to carry out the risk assessment is enshrined in law in the respective occupational health and safety laws or ordinances of the individual member countries (see Table 1).

The aim of these laws and regulations is to ensure the safety and health protection of employees when setting up and operating workplaces and when using work equipment, including scaffolding. On the basis of these, the Technical Rules relevant to scaffolding are usually issued, which contain more detailed regulations for the assembly and use of scaffolding as well as for risk assessment.

For the employer, risk assessment is important in several respects. It is helping him to:

- implement comprehensive preventive occupational health and safety,
- comply with his legal obligations,
- organize occupational health and safety and to integrate it into operational processes (occupational health and safety management system),
- reduce work-related illnesses or accidents and thus absenteeism of employees,
- identify deficiencies and thus indirectly improve the quality of the value-added process, i.e. the production and service processes.

In order to anchor occupational health and safety in the company organisation and thereby make it effective and economical at the same time, a forward-looking risk assessment should always be an integral part of the planning of workplaces, workstations and work processes as well as the procurement of work equipment. Occupational health and safety management can help here by regulating, for example, responsibilities, the inspection of work equipment and work processes as well as the provision and control of personal protective equipment.

Hint:

For the implementation of occupational health and safety management, the employer can fall back on question lists, which are offered by statutory accident insurers, associations or chambers depending on the country. See also tables in part 1.

Aid to action

This guideline is intended to support the employer in ensuring and documenting occupational health and safety that is as complete as possible but at the same time economical by means of a systematic approach to risk assessment. For this purpose, this guideline is structured according to the following process steps of risk assessment:

- 1. Definition of work areas and activities**
- 2. Identifications of the hazards**
- 3. Hazard assessment**
- 4. Defining occupational health and safety measures**
- 5. Implementation of the measures**
- 6. Checking the effectiveness of the measures**
- 7. Updating the risk assessment**

Chapter 1 deals with the recording of the underlying company structures and activities in the respective company: which working conditions prevail in the company from which a hazard can generally occur.

Example:

The activity on the construction site is particularly associated with hazards. However, hazards can also arise in the warehouse or during transport, e.g. when working with machines for repairing scaffolding material or due to inadequate securing when being transported.

Chapters 2 and 3 deal with the identification of hazards and the assessment of risks: Which hazards are to be expected in the specific individual case and how are these to be assessed with regard to their severity?

Example:

During assembly work in an area without edge protection, there is a risk of falling.

Chapters 4 and 5 concern the definition and implementation of the necessary occupational health and safety controls: What accident prevention measures are to be taken on the basis of the hazard and what must be observed when carrying them out?

Hint:

During assembly work in an area without edge protection, there is a risk of falling.

It is necessary to use, for example, an advanced guardrail or personal protective equipment (PPE) against falls from a height.

The application of the advanced guardrail to be used depends on the object to be scaffolded, the scaffold type, the scaffold construction and the scaffold system.

The use of PPE requires the presence of suitable anchoring points, training of the employees and a rescue plan.

The use of PPE also requires a special risk assessment in which the latter points in particular must be documented.

Chapters 6 and 7 deal with monitoring the effectiveness of the measures and updating the risk assessment.

Example:

The employer can check the implementation of measures, for example, by interviewing the supervisors and carrying out personal visual inspections on the construction site. The risk assessment must be updated without delay if an accident or near miss has shown that established protective measures do not have the expected effectiveness or if relevant occupational health and safety regulations have changed.

Preparation and documentation of the risk assessment

The employer is obliged to take the necessary measures for occupational health and safety taking into account the circumstances affecting the safety and health of his employees at work. He must review the effectiveness of the measures and, if necessary, adapt them to changing circumstances.

Most of the occupational health and safety regulations listed in Table 1 contain a clear chronological sequence: Before using work equipment, the employer must assess the hazards that arise and derive the necessary and appropriate protective measures from them.

This is logical, because it is only after an assessment of the working conditions, which determines the risks to the safety and health of employees, that it is possible for the employer to plan and implement the health and safety measures and thus fulfil his obligations under the legislation.

The risk assessment must take into account all activities and work processes carried out (including, for example, maintenance, repair and overhaul), relevant hazards and the resulting necessary occupational health and safety measures. It is recommended to observe the process steps mentioned under Step 3 during the test.

The documentation of the risk assessment is not bound to a specific form. It can be in paper form or electronically. It is crucial that the documents show that the risk assessment has been carried out completely and conscientiously.

Therefore, at least the following information should be included

- Relevant hazards and their assessment
- Determination of occupational health and safety measures to be taken, including the point in time and the person(s) responsible for them
- Implementation of measures and verification of effectiveness
- Date of creation or update

Hints:

Depending on the country, the statutory accident insurers, associations or chambers provide forms to assist in documenting the risk assessment. Examples can be found in the Annex to this Guideline.

Forms serve the purpose of providing the employer with information on the performance of the risk assessment and on typical hazards and protective measures in the form of a safety check. It is also possible to limit the content of forms to certain hazards from the outset.

The risk assessment requires both expert knowledge of the hazard factors and the protective measures as well as of the current operational processes. The forms can therefore be used as an aid in carrying out the risk assessment. However, they do not replace the appropriate, case-by-case risk assessment on site, in particular the examination of the employer as to which hazards may be considered in the specific case.

1 Defining work areas and activities

The risk assessment, which refers to the existing working conditions, is a logical prerequisite for ensuring that all necessary occupational health and safety measures can be taken in a targeted manner: Only those who know the main hazards in their operations can take sensible and economic protective measures and thus effectively avoid hazards.

The starting point is therefore to examine the actual framework conditions that are relevant for the preparation of the risk assessment. This also includes determining which persons or groups of persons are eligible to participate in the risk assessment in the company.

The employer must therefore first consider which basic operational assumptions are to be made which are relevant for the risk assessment. What happens in the company, where does it happen and in what way?

In addition, the general responsibilities and competences for carrying out the risk assessment must be clarified: What is the personnel structure in the company and who can the employer entrust with the identification of hazards, the implementation of occupational health and safety measures and documentation?

Note:

The tables in Part 1 can also be helpful here.

1.1 Examination of operating conditions (“What, Where, How”)

The employer must form an opinion of all operating conditions which could pose a risk to employees. Factors such as factual, application, environmental and personal hazards may play a role.

Hazards can arise from

- the nature, design and equipment of the workplace,
e.g. on the construction site or in the warehouse, including all traffic routes and the individual workplace.
- construction site conditions,
e.g. height of workplace; object-related circumstances such as ground conditions, current-carrying cables, contact with hazardous substances, heat- and cold-generating components, special operating conditions; presence and influence of other trades; operation of machines such as vehicles and cranes; proximity to public road or rail traffic; proximity to water.
- in the warehouse,
e.g. condition and operability of storage areas; condition and securing of transport and storage racks; operation of machines for processing or repairing materials; operation of warehouse logistics vehicles.

- the design, selection, use, condition and handling of work equipment:
e.g. use of damaged or worn scaffolding material; use of scaffolding material contrary to the Assembly and use Instructions; handling of dirty or contaminated scaffolding material as a result of use; use of freight elevators and electric load winches; use of drilling machines without vacuum cleaner.
- the working process and activities, including work organisation (work processes, division of work, working time, breaks, responsibility):
e.g. work in areas that are not or not yet secured; monotonous activities and work processes; staffing of a team without taking into account individual strengths and weaknesses; non-observance of working and break times; non-staffing of certain necessary positions such as that of the first aider or the qualified person for electrical work equipment; insufficient testing and maintenance of work equipment such as scaffolding material and tools as well as vehicles or personal protective equipment.
- working conditions such as climate, lighting, noise, radiation:
e.g. weather-related exposure to heat, cold, moisture or wind; inadequate illumination of workplaces and traffic routes; noise caused by certain installations, machinery or handling of work equipment; solar radiation; radioactive radiation; release of gases and other toxic substances; lack of oxygen.
- the selection and use of personal protective equipment:
e.g. use of helmets, safety shoes, protective gloves, safety glasses, ear protection, protective and warning clothing, PPE against drowning (life jacket, life ring), UV protection, respiratory protection, PPE against falls from a height.
- inadequate qualifications, skills and abilities and inadequate instruction of workers:
e.g. transfer of technically highly demanding tasks such as, for example, those in the field of shoring to inexperienced employees; transfer of work outside an employee's area of competence; physical overload due to long working hours; reduction in performance due to age or illness.
- the interaction of the above factors.

In addition, special features to normal operation must also be considered. Therefore, it must be checked whether operating conditions can occur from which a hazard arises, for example maintenance and repair work or malfunctions, emergencies and rescue cases.

1.2 Responsibility and participation in risk assessment (“Who”)

The employer is responsible for carrying out the risk assessment and implementing the results. However, the risk assessment may only be carried out by competent persons. If the company does not have the necessary knowledge itself, it must seek the advice of a competent person when drawing up the risk assessment.

Note:

Qualified persons are, for example, the occupational safety specialist and, under certain conditions, other persons or the company doctor.

The responsible representative of the company may be, for example, plant manager, site manager and group leader with effective transfer of duties.

The transfer of duties must be made in writing. It shall define the responsibilities and powers of the delegate.

The transfer of obligations should therefore include information on:

- the area of responsibility of the representative (company, department, construction site),
- the hierarchical position of the representative (indication of the direct superior of the representative and the employees subordinated to him),
- the powers conferred on it (e.g. implementation of individual measures, granting of specific powers of instruction),
- regulations for the case of replacement (holiday, illness),
- an adequate financial margin granted to the delegate to implement measures.

Note:

If there is further talk of the risk assessment being carried out by the company, what has been said applies to the person commissioned by him, provided that there is an effective transfer of duties.

The employer is also dependent on the participation of the individual employees. This is the only way to identify and realistically assess hazards and define effective measures that are accepted and supported by employees.

Note:

The tables in Part 1 can also be helpful here.

2 Identifying the hazards

A specific circumstance that influences the level of hazard. A hazard may be caused by the occurrence of a single factor or by the combination of several factors.

E.g., the following factors can occur during work:

- Mechanical hazards
- Electrical hazards
- Hazardous substances
- Biological hazards
- Fire and explosion hazards
- Thermal hazards
- Hazards due to special physical agents
- Hazards due to working environment conditions
- Physical load/working heaviness
- Psychological factors
- Other hazards

Not all conceivable hazard factors can be considered in a comprehensive operational risk assessment. Risk identification is the core of the risk assessment procedure.

In order to be able to determine the correct occupational health and safety measures, the employer must carefully examine which hazard factors apply in the specific situation. He must therefore determine the current situation based on the existing working conditions.

The specific hazards can be divided into four groups:

- work environmental hazards
e.g. Typical hazards to industrial installations, bridges, shipyards; lighting conditions; climatic conditions; nature of traffic and escape routes.
- workplace-related hazards
e.g. Work at height, near high-voltage lines or in the slewing area of cranes.
- work-related hazards
e.g. in the case of repetitive actions or in the handling of work equipment, machines or vehicles.
- personal hazards
e.g. in the case of personal mental or physical stress.

In order to identify relevant hazards as completely as possible, it is advisable to proceed systematically and to examine one after the other whether one of the hazard groups mentioned is affected in the current situation.

Note:

As a safety check, you can use the risk assessment forms in the appendix to this guideline.

Table 2: Examples for the identification of specific hazards

Time, process step	Situations in which hazards or problems may occur	Possible hazard(s)
Before starting scaffolding work	Planning and/or work preparation	Due to inadequate work organisation
		Through existing installations in the work area, e.g. electrical overhead lines, pipelines, shafts, ducts, containers/close rooms, installation with explosion hazard, mechanical installations, crane and conveyor installations, e.g. swivel area, road/rail traffic
	Bad weather	Due to black ice, moisture, wind, increased UV radiation, etc. during scaffolding construction work
	Handling of hazardous substances	when drilling into asbestos cement slabs, inserting chemical anchors
	Location/Surroundings	By simultaneous activity of several trades.
Material transport/loading	Physical stress	Frequent lifting or carrying of heavy scaffold components, e.g. > 25 kg Incorrect lifting of loads
	Loading and transport	Uncontrolled movement of parts, slipping or falling objects
Material transport/scaffolding work	Transport routes and environment	Due to stumbling, slipping, falling, e.g. due to poor condition and stability of standing and running surfaces. Falling into openings
	Transport works	Uncontrolled movement of parts, slipping, falling or falling parts Due to sudden gusts of wind on crane loads, e.g. when installing a weather protection roof
Scaffolding works	Working at high altitudes	By falling when erecting, altering and dismantling scaffolds
	Structural transformation	Improper assembly, damaged scaffold components, prematurely dismantled scaffold components, improper assembly of components

3 Hazard assessment

Once the existing hazards have been identified and current conditions have been established and existing hazards has been established. based on the company structures and the activities to be performed, the employer must evaluate these and compare them with the aims.

The employer must check whether the relevant regulations and safety rules have been complied with.

The answer to the question of whether measures should be taken depends crucially on the risk, i.e. the severity of the possible health damage and the probability of occurrence. The higher the risk, the more likely it is that there will be a need to implement health and safety measures.

For example:

When dismantling and transporting scaffold equipment for example covered in concrete, there may be a risk of injury to the hands so it may be necessary to arrange for protective gloves to be worn.

4 Defining occupational health and safety measures

Training, experience, and ability shall not be used as a substitute for hazard elimination, risk reduction by design, or safeguarding where these protective measures can be practicably implemented.

For example:

- Technical, organisational or personal precaution which serves to exclude or minimise the danger.

Note:

Technical measures, also known as technical solutions, are physical measures that completely exclude a hazard.

- Collective protective measures are measures (mostly technical solutions) to simultaneously protect a group of persons, including individuals, from hazardous and harmful factors that may occur individually or collectively in a workplace.
- Side protection in the scaffold is a collective protective measure that prevents falls from a height.
- Organisational measures serve to avoid or reduce remaining hazards. Organisational protective measures can ensure that work processes are planned or carried out safely and professionally. This can be achieved, for example, by allowing

access to hazardous areas or carrying out certain operations only to certain workers (e.g. with special qualifications and training), reducing the number of workers in the hazardous area to the minimum necessary and/or limiting the length of stay in the hazardous area.

- Person-related measures, also known as individual protection measures, are intended for personal or person-related use. You can minimize a certain danger. Personal protective equipment against falls from a height (PPE) is a personal protective measure which, as a safety system for a person, protects the person from a longer fall by arresting him or her or can prevent the fall by restraining him or her.

The definition of health and safety measures can be divided into two steps: First, the employer/scaffolding contractor must determine which measures are to be implemented.

This is followed by a decision as to who will implement the measures and when and how (planning and organising measures).

4.1 Choice of measures

If the hazard identification has shown that a hazard exists, the necessary protective measures must first be determined and specified.

Which measures exist, depends on the assessment of the company. It must be decided on a case-by-case basis how to effectively counter the existing hazard. There is no legal definition of measures, however, most occupational health and safety laws contain general principles of prevention. These principles are binding legal obligations and should always be considered both in the preliminary planning and in the subsequent implementation and review of occupational health and safety measures.

The employer should base his occupational health and safety measures on the following general principles:

- Work must be carried out in such a way as to avoid as far as possible risks to life and physical and mental health and to minimise any residual risk;
- Dangers are to be addressed at their source;
- The measures shall consider current, occupational medicine and hygiene as well as other findings;
- measures shall be planned with the aim of properly linking technology, work organisation, other working conditions, social relations and the impact of the environment on the workplace;
- Individual protective measures are secondary to other measures;
- Special hazards for particularly vulnerable groups of workers must be considered;
- Appropriate instructions are to be given to the employees;
- Directly or indirectly gender-specific regulations are only permissible if this is necessary for biological reasons.

The hierarchy of these principles is based on the guiding principle of occupational health and safety law that hazards should be avoided as far as possible from the outset, hazards should be addressed at their source and technical and organisational protective measures should be applied before personal protective measures. This guiding principle is also referred to as the “STOP principle”.

Thereby means

Substitution:

In principle, the hazard should be eliminated from the outset by choosing a safe working method. In scaffolding construction, this replacement is not possible regarding the erection, conversion and dismantling of scaffolding. This always represents an unstable operating condition, i.e. it is always associated with a hazard and cannot be carried out using an alternative, safe working procedure.

However, substitution is possible for preparatory or accompanying activities, such as transportation or storage work.

Technology:

If it cannot be eliminated, the remaining hazard should primarily be avoided or kept to a minimum by means of technical protective measures.

Regarding scaffolding, the frequently encountered fall hazard must be kept away from employees by technical protective measures, such as in particular the two-part side protection (consisting of guardrail and intermediate rail). Since a continuous two-part side guard is not yet available during installation, a one-piece side guard or an installation safety railing (MSG) must be used here.

Organisation:

Organisational measures also serve to avoid or reduce remaining hazards. Organisational protective measures can ensure that work processes are planned or carried out safely and professionally.

This can be achieved, for example, by allowing access to hazardous areas or by restricting certain operations to certain workers (e.g. with special qualifications and training), by reducing the number of workers in the hazardous area to the minimum necessary or by limiting the length of stay in the hazardous area.

Personal:

By influencing the behaviour of employees, their protection is to be achieved if hazards remain despite priority technical and/or organisational measures. Personal measures include, for example, instructions on the correct handling of hazards or behaviour in hazardous areas or the use of personal protective equipment (PPE).

In order to take sufficient account of these principles, in particular the “STOP principle”, in the concrete implementation of occupational health and safety, it helps the employer to adhere to the following order of priority when planning and defining measures:

- Design the working procedure in such a way that there is no danger, eliminate sources of danger:
 - e.g. switching off the power source when working near high-voltage lines; allowing a blast furnace to cool when working in a metallurgical plant.
- Switching off or reducing hazards by using technical protective devices or aids:
 - e.g. dangers from falling when using a scaffold can be avoided or reduced by using fall protection devices, fall arrest devices or by securing danger areas against unauthorised access.
- Minimize health risk by reducing the intensity of exposure or the duration of exposure through technical or organizational measures:
 - e.g. by changing the work sequence by using a construction hoist instead of a cable winch; by regularly changing personnel when working in particularly dangerous places or in particularly dangerous positions; by consulting with other trades to share the use of technical aids such as cranes.
- Apply rules of conduct or personal protective measures:
 - Verify that the workers are physically and mentally capable of recording and carrying out the activities for which they are intended, in compliance with the relevant protection rules and prescribed protective measures; if the necessary competence is not available, use at another workplace or release from work.
 - The training of employees to enable them to identify hazards in good time, to understand and implement health and safety measures and to behave in a safe and healthy manner.
 - Use of personal protective equipment such as PPE against falls from a height, safety shoes, helmet, protective clothing, protective goggles, hearing protection, etc.

It may well happen that measures at different levels interact with each other. For example, despite the proper design of the work process, there may be a risk because an employee does not have the necessary qualifications or knowledge.

4.2 Planning and organising measures

After the company has decided which measures are to be implemented, they must make the necessary organisational preparations for their implementation.

This includes decisions on personnel responsibilities, the chronological sequence and the way they are to be implemented.

Preliminary planning includes in particular

- to assign and instruct the qualified and competent employees available in the company,
- effective transfer of duties,
- responsibilities for organising and defining work processes and, if necessary, coordinating them with other trades involved,
- to provide the necessary work equipment, such as assembly safety railings and personal protective equipment, ready for use.

The overall result – i.e. the measures defined and the organisational aspects mentioned – must be recorded in writing.

Note:

The risk assessment forms in the Annex to this Guideline or the forms available in the individual Member States may be used as an aid to documentation.

Example of measures to protect against falls from a height when erecting, adapting or dismantling scaffolding

If protective measures are required for the respective assembly situations or activities based on the risk assessment, technical, organisational and personal protective measures may be considered for the erection, conversion and dismantling of work scaffolding and protective scaffolding.

In order to determine the protective measures, their suitability must be checked depending on the object to be scaffolded, the type of scaffold and the scaffold structure in accordance with the following order of priority.

• **Fall protection**

The risk of falling can be eliminated by installing prevention devices (e.g. covers, side protection, installation safety devices).

• **Reception facilities**

The risk of falling can be reduced using fall arrest devices (e.g. safety nets, protective walls).

• **Personal protective measures**

The risk of falling can be reduced by using a suitable PPE against falls from a height.

When selecting the protective measures, the qualifications of the employees selected by the employer/scaffolding contractor for the respective scaffolding work must also be considered.

Depending on the object to be scaffolded, the type of scaffold construction, the scaffold structure, the scaffold system as well as the nature and progress of the activities to be performed, various measures for protection against falls from a height may be considered for erection, conversion and dismantling.

Notes on fall protection:

For vertical and horizontal manual transport as well as for the assembly of scaffold components, a side guard consisting of a rail, or rail and intermediate rail must always be used as fall protection. In the case of continuous alignment of scaffolding, a railing spar or an assembly safety railing must be used for material transport and assembly on the topmost scaffolding level in each case, unless structural conditions of the object to be scaffolded or special types of scaffolding do not permit this protective measure.

Structural conditions exist, for example, if there is no continuous alignment of scaffolding in terms of length and height without projections and recesses (e.g. through balconies, bay windows).

Special types of scaffolding can be, for example, birdcages, scaffold staircases and stair towers, bridging constructions, cantilevered scaffold components, suspended scaffolds.

The material feed to the assembly site, whether by hand or material lift, is considered as vertical or horizontal transport.

Note on the collecting device:

In principle, the fall arrest device is first installed by the scaffolder. In this respect, this protective measure is rarely possible during the erection, alteration and dismantling of scaffolding and is also disproportionate in terms of effort, with the result that in most cases only fall protection and PPE can be considered as protective measures.

Information on personal protective equipment against falls from a height (PPE):

The assemblers used to carry out the scaffolding work must always wear the necessary personal protective equipment (PPE). Depending on the nature and progress of the activities to be carried out and the scaffolding system used, PPE against falls from a height may also be included.

The use of personal protective equipment against falls from a height (PPE) is required for almost all types of scaffolding if technical protective measures are

not possible in individual cases, e.g. if there is no continuous alignment of scaffolding without projections and recesses in terms of length and height, as well as for birdcages scaffold stairways and stair towers, bridging structures, cantilevered scaffold components, suspended scaffolding.

Note:

For examples of assembly variants when using system scaffolds, see Practical Guideline for the supply/provision and use of working and protective scaffolds of the UEG, Edition 04.2016, pages 47-48.

5 Implementation of the measures

The implementation of the occupational safety measures defined based on the hazard identification must be ensured by the employer.

This includes, first, initiating preparatory measures that are still outstanding in order to ensure the smooth implementation of the measures.

Subsequently, the measures must be carried out or their implementation monitored by the employer and care taken to ensure that the findings and specifications of the risk assessment are sufficiently considered.

Finally, the operator must ensure that the measures taken are effectively maintained throughout the period of use of the work equipment.

The process step of the implementation of occupational safety measures must also be carefully documented.

6 Checking the effectiveness of the measures

After implementation, the employer is obliged to subject the occupational health and safety measures to an effectiveness check (so-called duty of company self-regulation).

This means that a target/actual comparison must be made between the prescribed occupational health and safety aims and the measures taken by the employer.

The aim of the examination is to clarify the question as to whether the occupational health and safety measures previously defined and implemented have proved to be suitable for achieving the safety objectives in the intended manner.

A distinction must be made between

- regular effectiveness checks, and
- effectiveness checks for special reasons.

Regular effectiveness checks serve the continuous improvement process. The employer's own initiative is intended to ensure that the measures for the safety and health of employees at the workplace are always as effective as possible and correspond to the current best practice.

Effectiveness measures on special circumstances are a reaction to special incidents or changed situations which give rise to doubts about the effectiveness of the previous protection concept.

Such special occurrences may be

- accidents at work, near misses
- work-related illnesses
- the introduction of new work equipment or procedures
- new, reliable findings in the field of occupational science, e.g. on the design of work organisation, which the employer must consider in occupational health and safety measures
- better protection possibilities due to development in, occupational medicine and hygiene as well as other assured findings in occupational science
- changes in the resilience of affected workers, due to health impairments or natural changes such as age-related decline in productivity
- amended or new legislation.

The timing and frequency of the check depend on the type of effectiveness test. In the case of regular effectiveness tests, the verification cycle is based on the hazard. The greater the risk to employees, the more frequently the employer can be expected to carry out such checks.

For example:

When working on high-voltage lines or on a block transformer, it should be checked after each interruption whether the power is switched off.

When working under full protection or with respiratory protection, this personal protective equipment should be checked before starting work.

Naturally, effectiveness tests for special reasons are always required when the relevant event is triggered.

For example, if a fall has occurred due to a lack of personal protective equipment against falls; if an employee has not worn safety shoes and has injured his foot; if an employee has not used hearing protection while working on a motorway and has reported hearing damage.

How the employer carries out the effectiveness check depends on the type and condition of the work equipment, the hazard and the measures taken. Possible control methods are for example:

- professional inspection
- execution of measurements and calculations
- employee surveys
- regular joint meetings

Even if changed conditions or special events are not present, it is advisable to review the risk assessment regularly once a year.

The implementation process and the outcome of the effectiveness review shall be carefully documented.

7 Updating the risk assessment

If the review has shown that the existing measures are not sufficiently effective or that new risks have arisen, the operator shall update the risk assessment. For this purpose, they must adapt the measures or take new measures in order to implement the safety and health protection of the employees in accordance with the changed circumstances.

This process step is therefore a further development of the measures already taken with the aim of ensuring occupational health and safety are implemented.

Appendices

Annex 1 – Example of an activity-related risk assessment

Annex 2 – Example of an object-related risk assessment

Annex 3 – Examples from the Member States

Annex 4 – Examples of Employee Instructions

Annex 1:

Example of an activity-related risk assessment

Tätigkeitsbezogene Gefährdungsbeurteilung und Wirksamkeitskontrolle nach §§ 5, 6 ArbSchG und § 3 BetrSichV für den Auf-, Um- und Abbau sowie den Transport von Arbeits- und Schutzgerüsten		Blatt: 1 von 8								
Firma: Tel.: Anschrift: Fax: E-Mail: Geschäftsführung:										
Sicherheitstechnische Betreuung:										
Sicherheitsfachkraft: Tel.: Mobil: E-Mail:	Ansprechpartner: Tel.: Mobil: E-Mail:									
Grundsätzliche Hinweise: Beim Auf-, Um- und Abbau von Gerüsten muss jedem Mitarbeiter bewusst sein, dass bis zur kompletten Fertigstellung eines jeden Gerüsts Absturzgefahr bestehen kann. Es dürfen nur Mitarbeiter eingesetzt werden, die für das Auf-, Um- und Abbauen von Gerüsten fachlich und gesundheitlich geeignet sind. Wenn es gesundheitliche Einschränkungen gibt, hat der Mitarbeiter vor Arbeitsbeginn seinen verantwortlichen Aufsichtführenden (vAF) darüber zu informieren. Der Inhalt dieser Gefährdungsbeurteilung ist Grundlage für die Projektsicherheitsplanung. Sollte im Rahmen dieser Planung festgestellt werden, dass projektspezifische Gefahren nicht ermittelt wurden, muss der Projektverantwortliche eine ergänzende, projektbezogene Gefährdungsbeurteilung in schriftlicher Form durchführen. Zu dieser Gefährdungsbeurteilung sind die jeweils gültigen Unterlagen wie Betriebsanweisungen, Montageanweisungen und gegebenenfalls objektbezogene Gefährdungsbeurteilungen zu beachten und zu befolgen. In dieser Gefährdungsbeurteilung werden die relevanten Gefährdungen betrachtet, die bei der Ausführung der Gerüstbauarbeiten und dem Transport der Gerüstbauteile entstehen können. Zur Abwehr der sich daraus ergebenden Unfall- und Gesundheitsgefahren sind die genannten Schutzmaßnahmen einzuhalten. Die Verantwortlichen vor Ort sind für die Umsetzung und Einhaltung der Schutzmaßnahmen zuständig. Anhand der vorliegenden Gefährdungsbeurteilung hat der für die jeweilige Baustelle/den jeweiligen Standort Verantwortliche zu prüfen, ob aufgrund der betrieblichen oder örtlichen Verhältnisse die Schutzmaßnahmen ausreichend und geeignet sind. Andernfalls sind zur Gewährleistung der Sicherheit von Beschäftigten erforderliche Handlungsschritte festzulegen und umzusetzen. Bemerkungen oder ergänzende Hinweise werden ab Seite 8 dokumentiert.										
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Verwendete Abkürzungen: BL = Bauleiter, vAF = verantwortlicher Aufsichtsführender, MA = geeignete Mitarbeiter, FA = Fachkraft PSA = Persönliche Schutzausrüstung, PSAgA = Persönliche Schutzausrüstung gegen Absturz, AV = Arbeitsverfahren,										



Tätigkeitsbezogene Gefährdungsbeurteilung und Wirksamkeitskontrolle nach §§ 5, 6 ArbSchG und § 3 BetrSichV für den Auf-, Um- und Abbau sowie den Transport von Arbeits- und Schutzgerüsten				Blatt: 2 von 8		
Situationen, in denen Gefährdungen oder Probleme auftreten können	Mögliche Gefährdung(en)	Schutzmaßnahme(n)	Umsetzung durch			Kontrolle, Maßnahme(n) umgesetzt und wirksam?
			BL	vAF	MA	

1 Vor Beginn der Gerüstbauarbeiten						
Planung und/oder Arbeitsvorbereitung	Durch mangelhafte Arbeitsorganisation, durch vorhandene Anlagen im Arbeitsbereich	☐ Abstimmung mit AG, Bauleitung, FASI, SiGeKo ☐ Erlaubnisscheine				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
	☐ elektrische Freileitungen	☐ Abschaltung ☐ Abspernung				
	☐ Rohrleitungen	☐ Abspernung				
	☐ Schächte	☐ Abdeckung/ Abspernung				
	☐ Kanäle	☐ Abdeckung/ Abspernung				
	☐ Behälter/enge Räume	☐ Atemschutz, Sicherungsposten				
	☐ Anlage mit Explosionsgefahr	☐ Maßnahmen gem. Erlaubnisschein				
	☐ maschinelle Anlagen	☐ Abspernung ☐				
	☐ Kran- und Förderanlagen z. B. Schwenkbereich	☐ Abspernung ☐ Sicherungsposten ☐				
	☐ Straßen- / Schienenverkehr	☐ Abspernung, Umleitung, Genehmigung				
	☐	☐				
Schlechte Witterung	Durch Glatteis, Nässe, Wind usw. bei Gerüstbauarbeiten	☐ Tragen von Schutzkleidung				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
		☐ Beläge von Glatteis und Schnee beräumen				
		☐ Gerüstbauarbeiten bei Starkwind, Sturm, Gewitter einstellen				
		☐ Künstliche Beleuchtung bei nicht ausreichendem Tageslicht				
		☐ Bereitstellung von Sozial- und Sanitärräumen				
	Durch erhöhte UV-Strahlung	☐ Tragen geeigneter Kleidung,				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
		☐ Unterweisung				
		☐ Bereitstellen Hautschutzmittel				
		☐ Ausreichende Flüssigkeitszufuhr				
		☐				

Tätigkeitsbezogene Gefährdungsbeurteilung und Wirksamkeitskontrolle nach §§ 5, 6 ArbSchG und § 3 BetrSichV für den Auf-, Um- und Abbau sowie den Transport von Arbeits- und Schutzgerüsten						Blatt: 3 von 8	
Situationen, in denen Gefährdungen oder Probleme auftreten können	Mögliche Gefährdung(en)	Schutzmaßnahme(n)	Umsetzung durch			Kontrolle, Maßnahme(n) umgesetzt und wirksam?	
			BL	vAF	MA		
Gefahrstoffe	Beim Umgang mit Gefahrstoffen, z. B. Anbohren von Asbestzementplatten, Einsetzen von Klebankern	☐ Betriebsanweisung ☐ Standardisiertes AV (BT 12) ☐ Sachkundenachweis ☐ Unterweisung ☐ Anzeige ☐ Vorsorgeuntersuchung				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite	
Lärm	Durch Lärmbelastungen bei Transport und Montage von Gerüstteilen sowie durch Umgebung und Anlagen	☐ Tragen von Gehörschutz ☐ Einsatz von lärmgeminderten Maschinen ☐ Lärmquellen abkapseln, abschirmen ☐ Vorsorgeuntersuchung ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite	
Standort/ Umgebung	Durch gleichzeitige Tätigkeit mehrerer Gewerke, gegenseitige Gefährdung, z. B. erfasst, getroffen werden	☐ Koordination mit anderen Gewerken ☐ ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite	
Umgang mit elektrischen Anlagen und Betriebsmittel	Gefahr des Berührens von spannungsführenden Teilen von Freileitungen, defekten Maschinen, schadhafte Leitungen	☐ Errichten/ Instandhalten von Anlagen durch Elektro-FK ☐ Überwachung, Prüffristen ☐ Einsatz von geeigneten Speisepunkten, Leuchten und Installationsmaterial ☐ notwendige Abstände zu Freileitungen einhalten				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite	
2 Materialtransport/Ladung							
Körperliche Belastung	Durch häufiges Heben oder Tragen von schweren Gerüstbauteilen > 25 kg und durch falsches Heben von Lasten	☐ Bereitstellen von Bauaufzug oder Gerüstlift ☐ Verwendung von gewichtsoptimierten Gerüstbauteilen ☐ Unterweisung der MA zur Handhabung von Lasten ☐ ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite	

Tätigkeitsbezogene Gefährdungsbeurteilung und Wirksamkeitskontrolle nach §§ 5, 6 ArbSchG und § 3 BetrSichV für den Auf-, Um- und Abbau sowie den Transport von Arbeits- und Schutzgerüsten					Blatt: 4 von 8	
Situationen, in denen Gefährdungen oder Probleme auftreten können	Mögliche Gefährdung(en)	Schutzmaßnahme(n)	Umsetzung durch			Kontrolle, Maßnahme(n) umgesetzt und wirksam?
			BL	vAF	MA	
Beladung und Transport	Durch unkontrolliert bewegte Teile, abrutschende, herabfallende Gegenstände	☐ Ladeplan ☐ Ladungssicherung (Zurpunkte, Zurrmittel) ☐ Formschlüssiges Abstützen ☐ Kleinteile in Gitterbox ☐ Unterweisung der MA ☐ Lastaufnahmemittel ☐ Prüfung Anschlagmittel ☐ Betriebsanweisung ☐ Geeignetes Fahrpersonal ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
Einsatz von Autokränen	Durch falsche Anschlagpunkte und Anschlagmittel, nicht unterwiesenes Personal	☐ Sicherstellen Kommunikation zwischen Kranführer u. Einweiser ☐ Vorgegebene Anschlagpunkte ☐ Geprüfte Hebezeuge, Anschlagmittel, Kennzeichnung ☐ Eingewiesenes Personal ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
3 Materialtransport/Gerüstbauarbeiten						
Transportwege und Umfeld	Durch Stolpern, Rutschen, Stürzen, z. B. durch mangelhafte Beschaffenheit und Stabilität von Stand- und Laufflächen	☐ Beseitigen von Hindernissen ☐ Beseitigen von Schmutz ☐ Abmessung/ Beschaffenheit prüfen ☐ Witterungseinflüsse berücksichtigen ☐ Verwenden PSA				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
	Hineinfallen in Öffnungen	☐ Einbau von Absperrungen (kein Flatterband) ☐ Auffangnetze unter Öffnungen, Beachtung Aufhängepunkte, Aufhängeseile, Abstände ☐ Einbau von nicht verschiebbaren Abdeckungen, Bohlen, Bleche etc.				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite

Tätigkeitsbezogene Gefährdungsbeurteilung und Wirksamkeitskontrolle nach §§ 5, 6 ArbSchG und § 3 BetrSichV für den Auf-, Um- und Abbau sowie den Transport von Arbeits- und Schutzgerüsten					Blatt: 5 von 8	
Situationen, in denen Gefährdungen oder Probleme auftreten können	Mögliche Gefährdung(en)	Schutzmaßnahme(n)	Umsetzung durch			Kontrolle, Maßnahme(n) umgesetzt und wirksam?
			BL	vAF	MA	
Transportwege und Umfeld (<i>Fortsetzung</i>)	Durch nicht begehbare Bauteile, Flächen, Dachflächen	☐ Lastverteilende Beläge ☐ Sicheres Ableiten der auftretenden Kräfte auf tragende Unterkonstruktion ☐ Sicherung gegen Verschieben und Abheben				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
	Durch nicht sachgerechten Einsatz von Leitern	☐ Sichtkontrolle von Holmen, Sprossen ☐ Anstellwinkel beachten ☐ max. drittoberste Stufe/Sprosse begehen ☐ Einsatz als Aufstieg bis max. 5 m ☐ Einsatz für kurze Arbeitsdauer 2 m bis max. 5 m ☐ Klappe in Durchstiegen schließen				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
	Durch Abrutschen von bzw. auf Dachflächen	☐ Fang-/Dachfanggerüst ☐ Schutzgitter Traufe, Schutzgeländer Giebel, bei Wetterschutzdach z. B. an vormontiertem Binderfeld				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
	Durch nicht sachgemäße Beläge	☐ systemgerechte Beläge - Alu-Rahmentafeln, - Vollholzbohlen, - Stahlbohlen, Alubohlen				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
Transportarbeiten	Durch unkontrolliert bewegte Teile, abrutschende, herabfallende oder umfallende Teile	☐ Abspernung/ Kennzeichnung				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
		☐ Schutzdächer/ Schutznetze				
		☐ Bordbretter				
		☐ Schutzhelme/ Handschuhe				
		☐ ordnungsgemäße Materiallagerung				
	Durch plötzliche Windböen auf Kranlasten, z. B. bei Montage Wetterschutzdach	☐ Führungsseile, ausreichende Länge ☐ Ausreichende Personalstärke zur Fixierung der Lasten mit Führungsseilen				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite

Tätigkeitsbezogene Gefährdungsbeurteilung und Wirksamkeitskontrolle nach §§ 5, 6 ArbSchG und § 3 BetrSichV					Blatt: 6 von 8	
für den Auf,- Um- und Abbau sowie den Transport von Arbeits- und Schutzgerüsten						
Situationen, in denen Gefährdungen oder Probleme auftreten können	Mögliche Gefährdung(en)	Schutzmaßnahme(n)	Umsetzung durch			Kontrolle, Maßnahme(n) umgesetzt und wirksam?
			BL	vAF	MA	

4 Gerüstbauarbeiten						
Arbeiten auf hochgelegenen Arbeitsplätzen	Durch Absturz beim Auf-, Um- und Abbau von Gerüsten	Auf-/Um-/Abbau grundsätzlich nach Montageplan und/oder A + V				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite ¹⁾ Bei Verwendung PSAGa: Festgelegte Anschlagpunkte und Gebrauchsanleitung PSA beachten.
		Vertikaler Materialtransport mit Bauaufzug oder handbetriebenem Seilrollenaufzug, Sicherung im Annahmefeld durch: ☐ Geländer ☐ PSAGa ¹⁾ ☐ Organisatorische Maßnahme				
		Vertikaler Handtransport (Mannkette) ☐ Geländer und Zwischenholm ☐ PSAGa ¹⁾ ☐ Organisatorische Maßnahme				
		Aufstieg und oberste Gerüstlage ☐ Geländer ☐ Montagesicherungsgeländer ☐ PSAGa ¹⁾ ☐ Organisatorische Maßnahme				
		Horizontaler Materialtransport, Sicherung durch: ☐ Geländer ☐ Montagesicherungsgeländer ☐ PSAGa ¹⁾ ☐ Organisatorische Maßnahme				
		Montage oberste Gerüstlage, Sicherung durch: ☐ Geländer ☐ Montagesicherungsgeländer ☐ PSAGa ¹⁾ ☐ Organisatorische Maßnahme				

Tätigkeitsbezogene Gefährdungsbeurteilung und Wirksamkeitskontrolle nach §§ 5, 6 ArbSchG und § 3 BetrSichV					Blatt: 7 von 8	
für den Auf-, Um- und Abbau sowie den Transport von Arbeits- und Schutzgerüsten						
Situationen, in denen Gefährdungen oder Probleme auftreten können	Mögliche Gefährdung(en)	Schutzmaßnahme(n)	Umsetzung durch			Kontrolle, Maßnahme(n) umgesetzt und wirksam?
			BL	vAF	MA	

	Durch Absturz nach innen, z. B. bei großen Wandabständen, Bauwerksöffnungen, Fensterflächen	☐ Wandabstand < 30cm ☐ Geländer-/Zwischenholm ☐ Konsolen ☐ PSAGa ¹⁾				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
	Durch Absturz bei Montage von Auffangnetzen	☐ Fahrgerüst ☐ Hubarbeitsbühne ☐ PSAGa ¹⁾ ☐ Montageanweisung ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
Bauliche Durchbildung	Durch nicht sachgemäßen Aufbau, durch beschädigte Gerüstbauteile, durch vorzeitig ausgebauter Gerüstbauteile, durch unsachgemäßen Einbau von Bauteilen (z. B. Sonderverankerungen)	☐ Sichtkontrolle der Gerüstteile				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
		☐ tragfähiger Untergrund				
		☐ Fußplatten/Spindeln verwenden				
		☐ waagerechter Aufbau				
		☐ Verankerungsraster festlegen				
		☐ Verankerung prüfen				
		☐ zugelassene bzw. geeignete Dübel verwenden				
		☐ Einbauhinweise für Spezialanker beachten				
		☐ Länge Gerüsthalter				
		☐ Gerüstteile nicht werfen				
		☐ Gerüstteile sachgerecht lagern				
		☐ Kennzeichnung des Gerüsts				
	Durch nicht fertig gestellte Gerüste, Gerüstabschnitte	☐ Kennzeichnung „Zutritt verboten“ bei noch nicht einsetzbarem Gerüst				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
		☐ Abgrenzung				
		☐				

5 Geräte und Maschinen

Fahrbare Arbeitsbühnen	Beim Einsatz von Kleingerüsten/fahrbaren Arbeitsbühnen	☐ AuV liegt vor				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
		☐ Betriebsanweisung				
		☐ max. Aufbauhöhe				
		☐ kein Aufenthalt von Personen während des Verfahrens				



Tätigkeitsbezogene Gefährdungsbeurteilung und Wirksamkeitskontrolle nach §§ 5, 6 ArbSchG und § 3 BetrSichV für den Auf,- Um- und Abbau sowie den Transport von Arbeits- und Schutzgerüsten					Blatt: 8 von 8	
Situationen, in denen Gefährdungen oder Probleme auftreten können	Mögliche Gefährdung(en)	Schutzmaßnahme(n)	Umsetzung durch			Kontrolle, Maßnahme(n) umgesetzt und wirksam?
			BL	vAF	MA	

		☐ Innenaufstiege ☐ Rollen feststellen ☐ keine Hebezeuge anbringen ☐ Prüfung und Kennzeichnung ☐				
Ungeschützte, bewegte Maschinenteile	Verletzungsgefahr durch Handmaschinen	☐ Arbeitsmittel nur mit CE/GS ☐ Arbeitnehmer einweisen ☐ Regelmäßige Prüfung ☐ Betriebsanleitung ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
	Infolge wegfliegender Teile, z. B. Splitter bei Trennschleifen, Säge- und Bohrarbeiten	☐ Schutzbrille gegen mechanische, optische, toxische Einwirkungen ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite
Bauaufzüge und Hebezeuge	Bei Montage und Betrieb von Bauaufzügen, Gerüstliften, Hebezeugen	☐ A + V ☐ Fachkundige Wartung/Prüfung ☐ Sicherung Lade- und Fahrbereich ☐ Geprüfte Anschlagmittel nach DIN ☐				☐ Ja ☐ Nein ☐ Siehe Bemerkungen Nr. Seite

Bemerkungen und Hinweise zur Maßnahmenkontrolle (Wirksamkeitskontrolle)

Nr.	Schutzmaßnahme	Ergänzung oder Änderung der Maßnahmen	Umsetzung durch			Umsetzung bis wann

Annex 2:

Example of an object-related risk assessment

Objektbezogene Gefährdungsbeurteilung

für die Firma:

Gerüstbau Mustermann GmbH

Projekt/Baumaßnahme: Kraftwerk Musterdorf

Block Y + Z – Brennergerüste bei außerplanmäßigen Instandsetzungen

Diese objektbezogene Gefährdungsbeurteilung ist eine Ergänzung zur Gefährdungsteilung
Gerüstbauarbeiten-Allgemein vom
und besteht aus Blatt 1 bis 3

Wichtiger Hinweis:

Zu dieser objektbezogenen Gefährdungsbeurteilung sind die nachfolgend aufgeführten
Unterlagen zu beachten und zu befolgen:

1. Die jeweils gültigen Betriebsanweisungen
2. Die Gefährdungsbeurteilung Persönliche Schutzausrüstung (PSA und PSAG) im
Gerüstbau in der aktuellen Fassung
3. Die Montageanweisung vom

Verantwortliche Aufsichtsführende, Gerüstbau Mustermann GmbH:

.....
.....

Fachkraft für Arbeitssicherheit, Gerüstbau Mustermann GmbH:

.....

Gefährdungsbeurteilung frei gegeben:

Ort, Datum:

Vorname und Name der verantwortlichen u. fachkundigen Person:

..... ;

.....

Verwendete Abkürzungen: BL = Bauleiter, vAF = verantwortlicher Aufsichtsführender, MA = geeignete Mitarbeiter,
PSA = Persönliche Schutzausrüstung, PSAG = Persönliche Schutzausrüstung gegen Absturz, AV = Arbeitsverfahren,



Objektbezogene Gefährdungsbeurteilung Projekt/Baumaßnahme: Kraftwerk Musterdorf Block Y + Z – Brennergerüste bei außerplanmäßigen Instandsetzungen	Blatt: 2 von 3
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Auszuführende Arbeiten:

Einrüstung der Brenner auf Einschubträgern, Höhe ~ +22,23 m bei außerplanmäßigen Stillständen ohne vorherige Montage des Trichtergerüsts.

Vor Beginn der Gerüstbauarbeiten wird von den Industriekletterern eine sogenannte „Lifeline“, ein horizontal gespanntes Seil zur Sicherung der Gerüstbauer oberhalb ihres Arbeitsbereiches installiert.

Der Zugang und die Materialbeschickung erfolgen durch die vorhandenen Luken/Öffnungen, in Höhe von ~ +22,23 m.

Beim Einstieg in den Kessel werden die Gerüstbauer von einem Industriekletterer übernommen und an die Lifeline angeschlagen.

Im Anschluss daran werden Gerüstrohre im Bereich der Luken/Öffnungen eingespannt, die später zum Fixieren der Basis-Träger dienen, die parallel zur Kesselwand auf den Einschubträgern verlegt werden. Diese Vorgehensweise kommt nur zur Anwendung, wenn die Luken/Öffnungen parallel zur Kesselwand verlaufen, in denen an den Brennern Arbeiten durchgeführt werden müssen.

Für den Fall, dass die Luken/Öffnungen versetzt zur Kesselwand verlaufen, in denen an den Brennern Arbeiten durchgeführt werden müssen, erfolgt die Einrüstung von unten aus dem Trichter.

Objektbezogene Gefahren:

- Gefahr durch herabfallende Schlackebrocken und/oder Anbackungen
- Unzureichende Beleuchtung

Gefahren während der Gerüstbauarbeiten:

- Absturzgefahr
- Gefahr durch bewegliche Teile

Maßnahmen, bezogen auf die festgestellten Gefährdungen:

- Erwirkung einer Befahrerlaubnis und Freischaltung für den Kessel Y/Z.
- An- und Abmelden im Betrieb/Leitstand/Feuerwehr vor und nach Arbeitsaufnahme.
- Besondere Baustellen-Einweisung der Mitarbeiter (Gerüstbauer und Industriekletterer) vor Beginn der Arbeiten!
- Anlegen und Benutzung der PSA und PSAG: Helm, Sicherheitsschuhe, Brille, Arbeitshandschuhe sowie Auffanggurt, Verbindungsmittel und Verbindungselemente. Zudem sind die von den Industriekletterern zur Verfügung gestellten Höhensicherungsgeräte für den direkten Anschlag an das horizontal gespannte Stahlseil zu verwenden.
- Nur geordnet fortbewegen. Kein eigenmächtiges Handeln für die Dauer der Fremdsicherung. Den Anweisungen des verantwortlichen Industriekletterers ist unbedingt Folge zu leisten.
- Vorgabe der Anschlagpunkte durch den verantwortlichen Aufsichtsführenden.
- Konzentriertes- und aufmerksames Arbeiten.
- Kein Arbeiten unter anderen Gewerken ausführen.
- Vor Beginn der Arbeiten für eine ausreichende Ausleuchtung sorgen.
- Einhaltung der Sicherheitsbestimmungen des Auftraggebers.

Notfall- und Rettungsmaßnahmen:

- Die Sicherung und Rettung im Ereignisfall erfolgt durch ausgebildete Industriekletterer.
- Die Zugänglichkeit - unten (± 0,00 m) muss während der Dauer der Gerüstbauarbeiten bauseits gewährleistet sein.
- Bei einem Unfall sofort die Werkfeuerwehr unter Angabe des genauen Standortes rufen.
- Notruf: 112 nur von der internen Telefonanlage
- Feuerwehr: (intern)
- oder - über Festnetz und Mobiltelefon
- Erste Hilfe leisten.



Objektbezogene Gefährdungsbeurteilung Projekt/Baumaßnahme: Kraftwerk Musterdorf Block Y + Z – Brennergerüste bei außerplanmäßigen Instandsetzungen	Blatt: 3 von 3
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Wirksamkeitskontrolle:

- ☐ Schutzmaßnahmen sind geeignet und ausreichend wirksam, es ergeben sich keine neuen Gefährdungen.
- ☐ Schutzmaßnahmen sind nicht ausreichend und/oder nicht wirksam. Meldung an Vorgesetzten.

Kontrolle durchgeführt von: *Vorname und Name der verantwortlichen u. fachkundigen Person*

.....

Ort, Datum

.....

Unterschrift der verantwortlichen u. fachkundigen Person



Annex 3:

Examples from the Member States

Risk Assessment

TASK RISK ASSESSMENTS									
Hazard	Hazardous event	Initial risk			Risk Control Measures			Residual risk	
		L	S	R	L	S	R	L	R
Failure of planning	Poor customer relations, complaints and possible injury	3	4	12	- All work will be planned, with Contracts Staff and Lead Scaffolders ensuring compliance with CDM regulations (including co-ordination and co-operation between the company, the client and other relevant parties). - Contracts Staff will brief all operatives on the requirement to comply with SHEQ (Safety, Health, Environment and Quality) policies, procedures and standards such as ISO 9001, and to use best judgement and act safely at all times. - Supervisor will also brief scaffold operatives on Company Policy, in particular on the requirement to be fit for work at all times (including complying with the Company's Drugs & Alcohol Policy and Procedures), which will be reinforced with regular toolbox talks on this subject. - Contracts supervisor will give regular toolbox talks, including on <i>SG15:09 Drugs and Alcohol at Work</i>, with signed copies retained.			1	4
Failure of segregation	Injury to other contractors or the general public	3	4	12	- As per Scope of Works. - All work areas to be cordoned off with barriers and warning signs. - Scaffolders must block off access to incomplete scaffolds at break times, and at the end of each shift. - Contractors/ Employers will brief all scaffolders on dealing with members of the public and other contractors. - They will be briefed to be courteous to all, at all times while working on the premises. - The risk of falling material MUST be managed daily to protect public, contractors and scaffold operatives from injury, by erection of suitable measures, where necessary (i.e. exclusion zones under the scaffold, fans, gaurties, look outs). - If a member of the public, or a contractor, enters the cordoned off area without authorisation, stop work and ask them to leave. If they fail to leave the area, inform the client who will contact security to have him/her removed. Only after the person has left the area can work resume.			1	4
Delivery of Scaffold Materials	Persons being struck by moving vehicles Damage to other vehicles/ plant/ materials	3	4	12	- All deliveries will be co-ordinated with the client (with scaffolding contractor giving sufficient notice) - Driver to comply with Site Traffic Rules and follow the directions of traffic marshals at all times where required. - The scaffold contractor / employer will install barriers and display warning signs as required. Lorries will park in designated parking area for unloading/loading. All operatives to wear PPE, including drivers when they work outside their lorry. - Lorry drivers will be courteous to all road users when accessing/egressing the site.			1	4
Unloading of scaffold material	Operatives being struck by materials, including crushing injuries	3	3	9	- Competent, experienced and trained Slinger/signaller and HIAB operator for mechanical lifting (drivers will carry certificates at all times). - All personnel, including drivers outside their lorry, to wear appropriate PPE. - Operatives will follow the directions of the HIAB operator at all times during lifting operations. All material will be unloaded where practical by mechanical means. Trolleys or wheelbarrows will be used where necessary			1	3
Unloading of scaffold material	Falls from lorry bed.	3	3	9	- Scaffold operatives will unload the lorry standing on the ground where practicable. - Where this is not practicable, they must unload/load lorries by accessing the lorry by secured ladder, and working behind double handrails.			1	3
Unloading of scaffold material	Cuts and abrasions, and back strain.	3	3	9	- Suitable gloves must be worn - Operatives must follow manual handling guidelines (see Manual Handling)			1	3
Manual Handling	Slips trips, strains, pulled muscles, abrasions, cuts, foot injuries, back strain	4	3	12	- Scaffolding operatives will use designated walk ways. All personnel to wear appropriate PPE. - Access routes and walk ways to be kept unobstructed. Materials to be stacked/stored neatly - Materials to be handled mechanically whenever possible to minimise manual handling. - All operatives will fill in a health questionnaire upon induction, and will be briefed to report any physical problems to H&S department. - Contracts supervisor will give regular toolbox talks, including on Manual Handling operations (which will include the <i>NASC SG6:10 Manual Handling in the Scaffolding Industry</i> and <i>SG15:09 Drugs and Alcohol at Work</i>, with signed copies retained.			2	4
Defective scaffold materials	Injury to persons by failure of components etc	2	4	8	- Materials are inspected before leaving yard by the Yard Manager - Materials will be inspected before use by the lead scaffolder, and quarantined if found to be defective and returned to the yard for servicing. - Tool Box Talks. All items that require certification will be distributed with a copy of the relevant certificate			1	4

TASK RISK ASSESSMENTS									
Hazard	Hazardous event	Initial risk			Risk Control Measures	Residual risk			
		L	S	R		L	S	R	
Lifting operations (including H&AB, crane, hoist, other mechanical aids)	Injury or death	3	5	15	- Only authorised, competent and certificated slingers/banksmen must sling loads, or operate machinery - Area around and below lifting operations must be barriered off with warning signs fixed prominently. No standing under hoisted load. - All lifting operations must conform to regulations, and all lifting equipment will be inspected as per regulations.	1	5	5	
Lifting operations (Rope and wheel)	Injury or death	3	5	15	- Contracts supervisor will give regular toolbox talks on Rope and Wheel operations (which will include the <i>NASC SGP-08 Use, Inspection & Maintenance of Lifting Equipment and Accessories in the Scaffolding Industry</i>), with signed copies retained. - All lifting operations must conform to regulations (including LOLER) - Area below lifting operations must be barriered off with warning signs fixed prominently. - Scaffold operative must have an escape route in place, so to be able to rapidly move away from the area in the unlikely event material were to fall from the rope. No standing under hoisted load. - All lifting equipment will be inspected as per regulations. The gunny wheel and rope must be checked by user at the beginning of every shift before use. It must be erected securely as per guidelines - It must not be erected directly above protruding tube or similar (which could dislodge the load) or where it could damage the building fabric. - All knots must be as per regulations, with fittings hoisted in the correct bags.	1	5	5	
Delivery of material near the building	Damage to building delivering scaffold materials, taking materials near or into building (and out of) the building	3	3	9	- If work cannot proceed according to the Method Statement, work must cease, and the client will be informed - The scaffold supervisor/lead scaffolder will inspect, supervise and coordinate all deliveries with the client - Lorries/forklifts/trolleys ferrying materials will use designated routes. - All operatives will be briefed by the scaffolding contractor on preventing damage to the building fabric. - The client to fit protection to the building fabric where necessary	1	3	3	
Handling materials, which may contain diseases	Wet's Disease Psittacosis	3	3	9	- Site specific Health, Safety, and Welfare Induction, defining hazards that may be encountered on this project - Gloves must be worn, and operatives to comply with all site hygiene rules; Note: There will be no unarming on site. Any scaffolder caught doing so will be disciplined. - Shared Welfare facilities: enabling hands to be washed prior to eating; - Scaffold supervisor to brief all operatives to seek immediate treatment for all cuts and abrasions at First Aid facilities; - Scaffold supervisor /lead scaffolder will ensure that all waste is disposed of in appropriate bins/skips - Scaffold contracts supervisor will advise operatives on skin disorders.	1	3	3	
COSHH (If As used to service scaffold fittings in scaffold yard)	Handling fittings, which may cause skin irritation and dermatitis	2	3	6	- COSHH assessment has been done on the oil used to service fittings (which can be emailed during office hours if required). - Gloves must be worn, and wash hands before eating (or smoking in designated smoking facilities) - Operatives to comply with all site hygiene rules - Operatives to wash eyes in water if irritation occurs, and to seek medical attention if irritation persists.	1	3	3	
Environment	Pollution, and environmental incidents	2	3	6	Although the scaffolding contractor/ employer will have the minimum of well-maintained plant on site, scaffold supervisor will brief scaffolders to report environmental accidents immediately to the client.	1	3	3	
Environment	Noise	2	3	6	- Contracts supervisor will brief scaffolders to keep noise to a minimum (no shouting for instance). - Only well maintained tools to be used. Scaffolders will obey any noise restrictions placed upon us by the client.	1	3	3	
Environment (Housekeeping)	Slips, trips and falls	3	3	9	- Supervisor will brief scaffolders to stack all material safely and neatly. All material must be barriered off with warning signs. - All access ways and fire exits must be kept clear. No tube/board or other materials must be left standing unless tied. - All material must be cleared and stowed appropriately on completion of operations.	1	3	3	

TASK RISK ASSESSMENTS								
Hazard	Hazardous event	Initial risk			Risk Control Measures	Residual risk		
		L	S	R		L	S	R
Environment (Inclement Weather)	Electrocution from lightning	2	5	10	- Contracts staff will brief scaffolders that they must not work in heavy rain etc, and must contact their supervisor immediately when bad weather approaches and seek advice. Contracts staff will brief all scaffolders that they must egress the scaffold when they feel there is likelihood that stormy weather could bring lightning. - Lead scaffolder to ensure scaffold is left safe and all accesses to the scaffold are blocked off with barriers and warning signs.	1	5	5
Working at height (Scaffolders)	Falls from height	3	5	15	- As per Scope of Works, including the following. - All scaffold operatives (not labourers) will have recorded training in the use of Fall Arrest Equipment (all operatives will be briefed to bring scaffold cards and certification with them to their first day induction at the site offices). - All scaffold operatives will be issued with Fall Arrest Equipment (except labourers who only work on fully boarded platforms with suitable and sufficient edge protection). - All operatives to check their harnesses daily and Lead Scaffold will monitor PPE use and ensure that it is worn correctly. - Health and Safety representative to carry out a (recorded) three monthly visual inspection of all harnesses and maintain a log and remove and destroy all unsuitable harnesses. - Scaffold contractors' employers and Lead Scaffold will ensure that all CSIRS scaffold operatives work to NASC SG4:10 (Preventing Falls in Scaffolding) when erecting (and subsequently dismantling) the scaffold. - The lead scaffolder is responsible for ensuring that all the operatives under his control act safely and work within a "scaffolders safe zone", as detailed in SG4:10. The latest Scaffold Guideline describes a "scaffolders safe zone" as a position of work where suitable edge protection and a platform exists. - He will also ensure that all harness trained operatives clip onto a suitable and sufficient anchorage point, and remain clipped on, in those situations detailed in SG4:10, where it is not practicable to use collective measures – i.e. "scaffolders safe zone". - Where hop-up steps are used, all scaffold operatives will check each step before use and clip on to a suitable anchorage point (i.e. the inside ledger) before accessing the hop-up step platform. - This specific RAMS details the Safe System of Work (the contracts supervisor/lead scaffolder will have the responsibility of communicating the contents of the RAMS to all operatives. Signed copies will be kept for inspection).	1	5	5
Working at height (Scaffolders), when working over voids	Falls from height	3	5	15	Supervisor will brief scaffold operatives on safe way to use inertia reels when working over voids. They will be briefed to fit them to a safe and sufficient anchorage point at shoulder height or above BEFORE working near unguarded leading edges.	1	5	5
Collapse of scaffolding/overloading of scaffolding	Injury to persons, damage to plant/materials	3	5	15	- Scaffold contractors' employers and lead scaffolder will ensure that all scaffolding is erected in compliance with TG20:08 Technical Guidance on the use of BS EN12811-1, that all system scaffolding complies with appropriate standards, and that all scaffolding is erected as per the relevant scaffold drawing/sketch. - Ties to be erected (and dismantled) progressively. Scaffolding ties will comply with TG4:11 Anchorage Systems for Scaffolding. - Scaffold to be taken out of use if struck by moving plant/cranes/vehicles, or undetermined, until remedial works are effected - The client to control uses, and conduct regular work place inspections. - Scaffolding to be inspected to comply with Statutory Legislation, and inspections etc to be recorded in Scaffold Register - Aside from the weekly scaffold inspections, operatives will be briefed to report any possible abuses directly to supervisor. - When scaffolding is dismantled, lead scaffolder/ contracts supervisor will ensure that no more than one lift of dismantled material will be stacked on scaffold prior to being removed as soon as is practicable.	1	5	5
Falling materials (While scaffold is erected or adapted or dismantled).	Injury to persons, scaffolders, public, and other trades. Damage to plant/materials	3	5	15	- Barriers to be installed to segregate all areas where scaffold operations will take place, with warning signs displayed. - No materials to be left standing, unless tied. Scaffolders will progressively tie down all boards, or similar, as required. - Scaffolders will adhere to Safe System of Work as detailed in this Risk Assessment/Method Statement. - For tube and fitting scaffolds, scaffolders must only jump up tube that lies within their capabilities and experience. The maximum of 5m tubes must be used to jump uprights at approximately ankle to waist height. Above this height scaffolders must only jump 3m high tubes. For very high jumps, at head height for instance, scaffolders must use a short butt or 1.5m tube. Where use of shorter tubes creates a series of unstagged jumps, every other one must be spliced. Scaffolders must take additional care when humping over the advanced guardrail, and use shorter tubes if necessary. - Where longer tubes are secured vertically, these will be secured against wind dislodgement.	1	5	5

TASK RISK ASSESSMENTS									
Hazard	Hazardous event	Initial risk			Risk Control Measures			Residual risk	
		L	S	R	L	S	R	L	R
Power Tools (and hand tools)	Injury to operatives	3	4	12	- Only good quality tools to be used. All power tools to be tested as regulations (PAT) - Supervisor will brief all operatives on the safe use of power tools, including reciprocating saws and hammer drills. - Operatives must do a pre-check before use, checking that the tool is in good order with no loose wires etc. Operatives must unplug before changing blades or drill bits. Appropriate PPE must be worn at all times, including appropriate gloves	1	4	4	
Power Tools	Injury to operatives or to other contractors or the general public from falling tools or cut material	3	5	15	- Operatives must hold power tools firmly with both hands while in operation. - If there is any danger of cut material falling then the following actions must be taken: - The area below must be barred off with warning signs. Operatives must only partially cut through the tube, safely stop the reciprocating saw, and remove the tube by bending it back and forth (a plastic brick cap must be placed over cut edges) - Or alternatively, the operative must ask for assistance to hold the tube or board while the cut is completed (while ensuring that there is no risk to the other worker). Operatives must place a brick cap over the cut tube immediately after cutting.	1	5	5	
Power Tools	HAVS	3	3	9	- Minimise the use of power tools (by having tube cut in the yard etc). Only well-maintained tools will be used (3monthly PAT). - For most scaffold operations, operatives will only need to drill for approximately 15 minutes a day (cutting operations will generally be for 3minutes – cutting an access through a scaffold, for instance) - Operatives must rotate drilling (or cutting operations) by swapping over tasks, so that each member of the team drills for less than 15 minutes. Where this is not possible, supervisor must contact the safety department for further advice and instruction.	1	3	3	
Insufficient training, knowledge or expertise of scaffolding (scaffold operatives) unsafe working arrangements	Injury or death	2	5	10	- Scaffold contractors specific Safety Induction to include competency check. Contracts supervisor will supervise workforce and ensure that only trained and competent operatives are used for the tasks detailed in this RAMS. - Scaffolding operative MUST inform his supervisor if he feels that he is not competent to do the work, or if he feels he has not had sufficient instruction, information and training to enable him to safely erect/adapt/dismantle the scaffolds detailed in the RAMS. - Similarly, the operative must not work if he is excessively fatigued (which could endanger work operations).¹ - Additionally, any scaffold operative can refuse to work on Health & Safety grounds if he feels that the RAMS does not state a Safe System of Work, and MUST contact his contracts supervisor IMMEDIATELY, who will then travel to site to address the issue, following the companies Refusal to Work on H&S Grounds Procedure. No action will be taken against the person reporting the issue (in line with Company Policy), and employees are encouraged to do in house reporting (to his/her supervisor and/or manager). - While the supervisor travels to site, the scaffold operative must still carry out what work operations are considered safe (for instance, unloading the lorry/carrying gear to the workplace).	1	5	5	
Site-specific hazards (Such as Voids and Gaps (on slabs for instance), skylights, chimneysacks and fragile work surfaces)	Injury or death	3	4	12	- Client to brief scaffold operatives and staff on any known site specific hazards, risks and required control measures, paying attention in particular to voids and gaps, skylights, chimneysacks and fragile working surfaces. - Supervisor/Lead Scaffolder to brief all scaffold operatives on any known site-specific hazards etc associated with the project. - Lead Scaffolder to monitor the site conditions for any changes. When in doubt stop work and contact your supervisor. - Where required, Client to fix protection over any existing skylights or fragile surfaces prior to work commencing - Scaffolding supervisor to brief all operatives to report any voids or gaps direct to site management team, who will arrange, for instance, to have suitable covers installed or edge protection fitted. - Scaffolding supervisor to brief operatives to treat any protruding sections of buildings – such as chimneysacks – as potentially weak, and to assess the risk of contact (asking advice where necessary, for example, from the site manager). Where there appears to be a potential risk, ensure that there is no risk of any form of loading being applied to the structure.	1	4	4	
Security	Unauthorised access to building or site	3	3	9	- Physical barriers (with warning signage) will deny access to any unauthorised person. - Operatives to report unauthorised visitors to site agent or to security. Scaffolders will secure all ladders at the end of each shift.	1	3	3	

¹ Employees are required to work five days a week (from 8am to 5pm) and fatigue is not generally an issue, but for out of hours work (such as, for example, work on railway or tube infrastructure projects), Contracts Staff will ensure that they and their operatives follow contractor's/ employer's procedure on preventing fatigue: As for example a 'Managing Employee fatigue'.

TASK RISK ASSESSMENTS									
Hazard	Hazardous event	Initial risk			Risk Control Measures			Residual risk	
		L	S	R	L	S	R		
Security	Needles (danger of sharps etc)	2	5	10	- Contracts supervisor and/or lead scaffolder will inspect the erection/dismantle area prior to starting work, and look for discarded needles and for needles that have been left as "traps" - for instance, needles taped to handrails etc. - Every morning, the lead scaffolder will inspect the erection/dismantle area for sharps etc. Any needles found will be left, and reported to the client who will arrange for them to be disposed of in appropriate bins.				
Fire, explosions	Injury or death	2	5	10	- Client to carry out Site specific Safety Induction to include Fire/Emergency Procedure; Provision of Fire Extinguishers, Information and site maps, Fire Drill, with Fire Egress Routes to be clearly defined by the client. - Lead scaffolder will ensure that all operatives are briefed to stay at the muster point until the names have been taken and they have been given permission to go.				

LIKELIHOOD (L) = Frequent (5) - Probable (4) - Occasional (3) - Improbable (2) - Remote (1)
SEVERITY (S) = Catastrophic (5) - Major (4) - Reportable (3) - Serious (2) - Minor (1)

DEGREE OF RISK (DR) = LIKELIHOOD x SEVERITY

Prepared by..... Date:.....

Independently Reviewed / Authorised by..... Date:.....
(See table above)

Risk Assessment Matrix

	5	4	3	2	1
5	25	20	15	10	5
4	20	16	12	8	4
3	15	12	9	6	3
2	10	8	6	4	2
1	5	4	3	2	1

Low 1-6 Medium 8-12 High 15-25

FICHE Z1

NOVEMBRE 2013

AIDE A L'ANALYSE DE RISQUES pour les opérations de montage et démontage d'échafaudage

Personnes concernées : chefs d'entreprise dont le personnel est spécialisé dans le montage et démontage des échafaudages fixes.

Dans le cadre d'activités liées au montage d'échafaudages (déchargement, montage, démontage), à titre indicatif, liste de risques potentiels et de mesures associées dans le but d'aider les entreprises à effectuer leur analyse de risques :



Syndicat Français de l'Echafaudage, du Coffrage et de l'Etalement

Fiche Z1

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NOVEMBRE 2013

Tâche analysée	Description des risques	Moyens et méthodes de prévention	Matériels mis en œuvre	Observations
Chargement et déchargement du matériel sur le chantier	Chute de plain-pied	Choix et déchargement de la zone de déchargement	Chaussures de sécurité, gants, casque	Respect des indications du Plan de Prévention et/ou du PPSPS Contrôle de la manœuvre par le chef d'équipe
	Heurts ou écrasement par engin ou véhicule	Balisage de la zone de stationnement et de déchargement Évacuation de la zone balisée (coactivité)	Gyrophare sur camion, Barrières, cônes, rubalise Matériel de signalisation temporaire, gilet à haute visibilité, Casque, chaussures de sécurité, gants	Autorisation de conduite pour le monteur s'il décharge avec un chariot
	Heurts par charge ou matériel	Évacuation de la zone balisée (coactivité) ; éloignement de la charge en mouvement		
Balisage de la zone de stockage et de la zone de montage	Chutes de matériel	Matériels cerclés en colis ou sur palettes Élingage correct (protocole affilié aux entreprises de transport)	Rack de stockage Casque, chaussures de sécurité, gants	
	TMS en cas de déchargement manuel	Gestes et postures Port des charges lourdes ou encombrantes à 2 personnes		Il existe des formations « gestes et postures »
	Heurt par un véhicule en cours de balisage	Personne dédiée à la gestion et au contrôle des manœuvres	Gilet à haute visibilité, Casque, chaussures de sécurité, gants	
Décolisage du matériel mis à disposition	Blessure ou chocs en cas de chute des éléments	Vérification du bon colisage Port des EPI	Casque, chaussures de sécurité, gants, lunettes	



Syndicat Français de l'Echafaudage, du Coffrage et de l'Etalement

Fiche Z1

2 / 3

Tâche analysée	Description des risques	Moyens et méthodes de prévention	Matériels mis en œuvre	Observations
Implantation de la structure, montage et démontage	TMS dus à la manutention	Limitation des charges par personne Gestes et postures Recours aux moyens mécanisés	Treuil, poulies	Il existe des formations « gestes et postures » Moyens de levage à jour des vérifications réglementaires Formation du personnel
	Heurts	Gestion du travail en équipe Port des EPI	Chaussures de sécurité, gants, casque	
	Chute de plain-pied	Accès et planchers dégagés	Chaussures de sécurité, gants, casque	
	Chute de hauteur	Protection collective Ou EPI si impossibilité technique de protection collective Respect des plans, méthodologie de montage, PPSPS ou PDP	Garde-corps de montage et d'exploitation Garde-corps provisoire de montage Chaussures de sécurité, gants, casque, système d'arrêt de chute	Formation « Monteur d'échafaudages » EPI à jour des vérifications réglementaires Formation à l'utilisation des EPI (harnais) Examen visuel des EPI par l'utilisateur à chaque emploi
	Chute de matériel / outils	Balísage en pied Protection de l'environnement extérieur Assurage des outils	Plinthes, pare-gravats, filets, ... Casque, chaussures de sécurité, gants	Interdiction de stationner sous une charge (manutention par poulie ou treuil) Formation du personnel

NOTA : le présent guide, lié aux méthodologies de montage, ne traite pas des risques liés à des conditions particulières d'intervention tels que les risques météorologiques (verglas, vent etc..) les risques épidémiques (grippe A, etc.) ou les risques environnementaux spécifiques au chantier (nucléaire, amiante, plomb, risque électrique etc.)

Les risques liés au matériel électroportatif ne sont pas traités dans le présent document.



Annex 4:

Examples of Employee Instructions

SYSTÈMES D'ARRÊT DE CHUTE

Préconisations sur les systèmes d'arrêt de chute pour la mise en œuvre d'échafaudages

Dans le cas où la technicité de l'échafaudage ne permet pas un montage ou un démontage en protection collective, l'évaluation des risques peut conduire à l'utilisation de systèmes d'arrêt de chute. Ce système d'arrêt de chute est individuel et nécessite une formation ainsi que des vérifications réglementaires (Arrêté du 19 mars 1993). Dans le cadre d'utilisation d'un système d'arrêt de chutes, il convient de respecter certaines préconisations.

Harnais de sécurité

Le harnais de l'échafauteur doit être un harnais d'anti-chutes conforme à la norme NF EN 361.

Systèmes de liaison

Les systèmes de liaison doivent être fonction du travail à réaliser et des distances de déplacements des opérateurs. Une analyse de risque devra prendre en compte le facteur de chute et le tirant d'air indiqué dans la notice du système de liaison (longe et/ou enrouleur), y compris le poids de l'opérateur.

⚠ Une longe sans absorbeur n'est pas un système d'arrêt de chute mais peut être utilisée comme longe d'assujettissement.

4 configurations sont particulièrement indiquées

- A. 2 langes indépendantes avec chacune un absorbeur intégré, de longueur totale utile **maximum de 1,50 m** (de point d'attache à l'extrémité du connecteur manucroche).

Il est recommandé que les langes soient de longueurs différentes.



- B. 1 longe en Y avec absorbeur d'une longueur totale de 1,50 m.

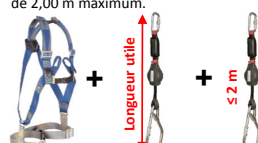


- C. 1 longe avec un absorbeur, longueur 1,50 m maximum + 1 antichute à rappel automatique avec absorbeur d'une longueur totale de 2,00 m maximum.



⚠ Les systèmes d'anti-chute à rappel automatique ne sont pas garantis pour une utilisation latérale par le fabricant (angle de 30° maximum).

- D. 2 anti-chutes à rappel automatique avec absorbeur d'une longueur totale de 2,00 m maximum.



Normes produits

NF EN 355 : Langes absorbeur d'énergie / NF EN 360 : Anti-chutes à rappel automatique / NF EN 363 : Les systèmes d'arrêt de chutes / NF EN 362 : Les connecteurs / NF EN 365 : Le marquage / NF EN 795 : L'équipement de protection individuelle contre les chutes — Dispositifs d'ancrage

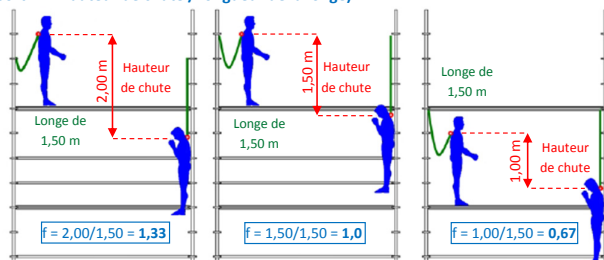
Facteur de chute (c'est le rapport : f = hauteur de chute / longueur de la longe)

Il faut privilégier un point d'accrochage :

- à 1,0 m minimum au-dessus du plancher et ;
- sur des points d'accrochage validés par le fabricant.

Il convient de privilégier un facteur compris entre 1,5 et 0.

$$0 \leq f \leq 1,5$$



Syndicat Français de l'Echafaudage, du Coffrage et de l'Etalement

Fiche Z3

1 / 2

Conditions d'utilisation pour harnais avec 2 longues indépendantes avec leur absorbeur

Longe 1 : Accrochage du connecteur sur un point d'accrochage validé par le fabricant.

Longe 2 : Accrochage du connecteur sur le fusible de la bretellepectorale du harnais.

Longe 2

→ Sollicitation totale de l'absorbeur en cas de chute



Conditions d'utilisation pour harnais avec longues dites en « Y » à 1 seul absorbeur

Longe 1 : Accrochage du connecteur sur un point d'accrochage validé par le fabricant.

Longe 2 : Accrochage du connecteur sur le fusible de la bretellepectorale du harnais.

Longe 2

→ Sollicitation totale de l'absorbeur en cas de chute



Si les 2 connecteurs sont accrochés sur le même point d'accrochage :

- Sollicitation simultanée des absorbeurs
- Risque de **non déclenchement** des absorbeurs.

→ Une solution consiste en l'utilisation d'une longe plus courte pour les déplacements.



Si 1 connecteur est accroché à la cuissarde :

- Chute, début de déchirement de la sangle et tension directe entre le point d'accrochage et le bassin du monteur
- Risque de **non déclenchement** des absorbeurs.

→ Il faut accrocher le connecteur sur le fusible de la bretellepectorale du harnais.



Points d'accrochages (points d'ancrages selon l'arrêté du 19 mars 1993)

Si le point d'accrochage est un élément de l'échafaudage, le point devra être installé conformément aux prescriptions des fabricants du système de liaison et de l'échafaudage.

Chaque point d'accrochage sur l'échafaudage devra avoir été testé suivant le référentiel réalisé par le Syndicat Français de l'échafaudage, conjointement avec la CRAMIF, l'OPPBTP, l'INRS et la CNAMTS : « Montage et démontage des échafaudages multidirectionnels – Définition des points d'accrochage des équipements de protection individuelle contre les chutes de hauteur – Cahier des charges définissant les justifications et informations à apporter par les fabricants d'échafaudages multidirectionnels »*.

Dans le cas contraire, le point d'accrochage, devra être installé conformément aux prescriptions du maître d'ouvrage /œuvre et du fabricant du système de liaison.

*Librement téléchargeable sur le site www.echafaudage-coffrage-etaiement.org

Utilisation de points d'accrochages : voir la notice du fabricant pour les points d'accrochages autorisés

Exemples :

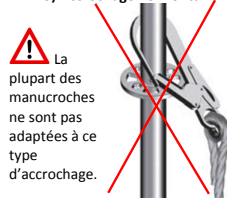
1) Accrochage en sortie de trappe



2) Déplacement latéral



3) Accrochage horizontal



La plupart des manucroches ne sont pas adaptées à ce type d'accrochage.



Syndicat Français de l'Echafaudage, du Coffrage et de l'Etalement

Fiche Z3

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	Betriebsanweisung für die Benutzung von persönlichen Schutzausrüstungen gegen Absturz (PSAgA)	Nr.: Revision: Datum: Blatt: 1 von 2
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Bearbeiter/in:	Verantwortlich:	Tätigkeit: <i>Gerüstmontage/-transport</i> Einsatzort:
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ANWENDUNG

Persönliche Schutzausrüstung gegen Absturz (PSAgA) ist bei allen Arbeiten mit Absturzgefahr anzuwenden, wenn Absturzsicherungen (Seitenschutz) aus arbeitstechnischen Gründen nicht möglich und Auffangeinrichtungen (Fanggerüst, Auffangnetze) unzureichend sind. Das Auffangsystem verhindert einen Absturz durch Auffangen der stürzenden Person.

Nach Bereitstellung wird die Benutzung der PSAgA angeordnet. Die jeweilige Benutzung der PSAgA ist der Montageanweisung für Gerüstbauarbeiten zu entnehmen. Persönliche Schutzausrüstungen gegen Absturz sind:

- ➔ Auffanggurte mit/ohne Verlängerung der Auffangöse
Fabrikat/Typ:
- ➔ Verbindungsmittel mit Falldämpfer
Fabrikat/Typ
- ➔ zugelassene Auffangsysteme, wie Seilkürzer, Höhensicherungsgeräte (HSG).



GEFAHREN

Gefahr des Absturzes beim Auf-, Um- und Abbau von Gerüsten.

Falsche Benutzung der Anschlagvorrichtung oder des bereitgestellten Auffangsystems oder Veränderungen bzw. Ergänzungen des Systems können zum Versagen führen.

Ein Sturz in ein Auffangsystem kann eine Verletzung grundsätzlich nicht ausschließen, jedoch die Schwere der Verletzungsfolgen mindern.

Nach einem Sturz kann längeres Hängen im Gurt zu schweren bis tödlichen Gesundheitsschäden führen.



SCHUTZMASSNAHMEN UND VERHALTENSREGELN

- ➔ Der verantwortliche Vorgesetzte/Aufsichtsführende überprüft auf Grund der örtlichen Gegebenheiten, der Aufbau- und Verwendungsanleitung oder Montageanweisung die Anwendbarkeit der Schutzmaßnahme und legt die Anschlagpunkte fest. Er hat dafür zu sorgen, dass der Anseilschutz benutzt wird.
- ➔ Benutzung der PSAgA nur nach Unterweisung und unter Berücksichtigung der Gebrauchsanleitung des PSA-Herstellers.
- ➔ Nur bereitgestellte Auffangsysteme verwenden. Veränderung und Ergänzung sind unzulässig.
- ➔ Vor der Benutzung ist die PSAgA auf augenscheinliche Mängel zu prüfen.
- ➔ Auffanggurt richtig, nicht zu locker, anlegen.
- ➔ Es dürfen nur die vom Gerüstersteller in der AuV angegebenen bzw. die vom Aufsichtsführenden festgelegten Anschlagpunkte benutzt werden.
- ➔ Ausreichender Freiraum zum Auffangen der abstürzenden Person muss sichergestellt sein.
- ➔ Rändelschraube am Karabinerhaken zudrehen, damit sich das Verbindungsmittel nicht vom Anschlagpunkt lösen kann. Unbeabsichtigtes Lösen des Verbindungsmittels vom Anschlagpunkt muss ausgeschlossen sein.





Betriebsanweisung

für die Benutzung von persönlichen Schutzausrüstungen
gegen Absturz (PSAgA)

Nr.:
Revision:
Datum:
Blatt: 2 von 2

- ➔ Die Befestigung des Systems darf nur an der festgelegten Auffangöse des Auffanggurtes erfolgen.
- ➔ Die Verbindung zum Anschlagpunkt ist möglichst kurz und straff zu halten (Schlaffseilbildung verhindern).
- ➔ Bei der Anwendung der PSAgA muss ein geeigneter Schutzhelm getragen werden.
- ➔ Auffanggurt richtig, nicht zu locker, anlegen.
- ➔ Die Auffangsysteme dürfen nicht für andere Zwecke, z. B. als Anschlagmittel für Lasten, verwendet werden.

VERHALTEN BEI SCHÄDEN ODER STÖRUNGEN

- ➔ Werden an der persönlichen Schutzausrüstung gegen Absturz oder an Anschlageinrichtungen Mängel festgestellt, dürfen die Arbeiten nicht aufgenommen werden bzw. sind die Arbeiten sofort einzustellen. Der Vorgesetzte ist zu informieren.
- ➔ Wird persönliche Schutzausrüstung gegen Absturz und Anschlageinrichtungen durch einen Absturz beansprucht, sind sie der weiteren Benutzung zu entziehen. Der Vorgesetzte ist zu informieren.
- ➔ Die Arbeiten dürfen nur fortgesetzt werden, nachdem die beanspruchten Teile durch eine befähigte/sachkundige Person geprüft und freigegeben wurden.

VERHALTEN BEI UNFÄLLEN, ERSTE HILFE

- ➔ Bei einem Sturzunfall Ruhe bewahren und überlegt handeln.
- ➔ Sofortige Information der Rettungsstelle, Notruf-Telefon:
- ➔ Die Befreiung einer nach einem Absturz durch die PSAgA aufgefangene Person ist unverzüglich durchzuführen. Längeres Hängen im Gurt als 20 Minuten ist unbedingt zu vermeiden. Ersthelfer heranziehen.
Ersthelfer ist: Tel.:
- ➔ Befreiung der aufgefangenen Person entsprechend betrieblicher Festlegung, soweit die Situation es erlaubt.
- ➔ Erste – Hilfe – Maßnahmen, soweit erforderlich, durchführen.
- ➔ Unfälle sofort dem zuständigen Vorgesetzten melden.



INSTANDHALTUNG/PRÜFUNG/LAGERUNG

- ➔ Vor jeder Benutzung eine Sichtprüfung auf ordnungsgemäßen Zustand durchführen.
- ➔ Reparaturen nur durch befähigte/sachkundige Person bzw. Hersteller durchführen lassen; schadhafte Teile der PSAgA oder Anschlageinrichtungen sind nur durch solche Ersatzteile zu ersetzen, die den Originalteilen entsprechen.
- ➔ PSAgA dürfen keinen Einflüssen (von Säuren, Laugen, Ölen, Funkenflug etc.) ausgesetzt werden, die ihren sicheren Zustand beeinträchtigen können.
- ➔ Die persönlichen Schutzausrüstungen gegen Absturz dürfen nur trocken, freihängend und ohne Einwirkung von UV-Strahlung aufbewahrt werden.
- ➔ PSA gegen Absturz ist durch einen Sachkundigen prüfen zu lassen:
 - mindestens einmal pro Jahr (siehe Stempel),
 - nach Störungen immer.

MITGELTENDE UNTERLAGEN/DOKUMENTE/WEITERE INFORMATIONEN

- | | | | |
|---|---|---|--|
| ☐ Montageanweisung | ☐ Gebrauchsanleitung PSA | ☐ AuV Gerüstsystem | |
| ☐ DGUV R 112 - 198 | ☐ DGUV R 112 - 199 | ☐ DGUV I 204 - 011 | ☐ Fachinformation PSA |
| ☐ FRG 1 Standgerüste | ☐ FRG 2 Hängegerüste | ☐ FRG 3 Fahrgerüste | ☐ FRG 4 Traggerüste |



Bundesarbeitsgemeinschaft Gerüstbau

Skal leses før bruk

Dato opprettet/endret: 05.03.2013

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Hilti DX 460



Tekniske data

- Spikerlengde: 15-72/97 mm (magasinert /enkeltpiker)
- Drivpatroner: 6,8/11M – 4 styrker
- Vekt: 3,5 kg
- Lengde: 475 mm

Bruksområde – tilsiktet bruk og mulig feilbruk

- Innskyting av spiker/bolter i betong og stål
- *Skal ikke brukes mot glass/stein/plast/metaller/lettbetong*
- *Skal ikke brukes i eksplosjonsfarlige områder*
- *Feil bruk kan medføre alvorlig personskade*

Krav til kunnskap/opplæring

Dokumentert sikkerhetsopplæring – BNF modul 11
Aldersgrense 18 år

Personlig verneutstyr

Iht. bedriftens/arbeidsplassens bestemmelser – inkludert:



Varselmerking



Håndvibrasjon



Kruttpatroner



Varm overflate



Støy

Vibrasjoner: < 2,5 m/s² Støy: 103 dB(A)
(Tilsvarende 1300 grønne skudd)
Maks aktiv brukstid pr. dag: >24 timer

Boltepistolens sikkerhetsinnretninger

- Mottrykksikring
- Fall-avfyringssikring
- Splintvern (demonterbart)

Risikovurdering

Gjennomføres før arbeidet starter. Vær obs. på bl.a.:

- Arbeidsområdet tydelig avgrenset m/varselskilt
- Ryddet/sklisikkert underlag og god belysning
- Sikre arbeidsområdet for mulig gjennomskyting
- Informer personell i nærheten om støy/mulige splinter
- Drivgasser kan forekomme - sørg for god lufting
- Bruk splintvernet når det er mulig



Kontroller før start at:

- Boltepistolen er sakkyndig kontrollert og dokumentert
- Boltepistolen er rengjort og driftklar
- Festemateriell og drivpatron er korrekt
- Splintvernet brukes når det er mulig
- Uinformert personell ikke er innenfor arbeidsområdet eller under/bak materialet det skal festes i

Start

- Start med lav styrke/drivpatron og øk ev. etter hvert
- Press boltepistolen forsiktig mot arb.flaten i rett vinkel
- Ha en liten bøy i albuen for avfyring
- Fyr av med avtrekkeren
- Kontroller innskytingen og vurder justering av styrken

Stop

- Ta ut drivpatronremsen og spiker ved opphold i arbeidet
- Klikkskudd/udetonerte drivpatroner er spesialavfall
- Forlat aldri boltepistolen uten tilsyn

Ergonomi

- Sørg for stødig og god arbeidsstilling – unngå stiger

Sikker bruk

- Rett/press aldri boltepistolen mot personer/kroppsdeler
- Trekk aldri tilbake magasinet/anleggsfoten for hånd
- Tving aldri drivpatroner inn i kammeret
- Skyt aldri mer enn 1 skudd på samme spiker/bolt
- Ved «puffskudd» skal boltepistolen renses/rengjøres
- Ved «klikk» hold pistolen 30 sek mot underlaget. Ved gjentatte klikkskudd – kontakt utleier for ev. service
- Unngå at boltepistolen blir for varm

Service/vedlikehold

- Ta ut patroner/spiker før kontroll/vedl.hold og lagring
- Kontrolleres etter bruk – sjekk ev. stempel/stopping
- Rengjøres m/fuktig klut utvendig – børsten innvendig
- Bruk aldri fett/grease – kun produsentens spray
- Oppbevar boltepistol/drivpatroner innelåst

Ved driftsproblemer/servicebehov - kontakt utleier, medlem av:



Denne sikkerhetsveiledningen er et supplement til produsentens bruksanvisning og erstatter ikke denne.

Se: http://www.hilti.se/fsstore/holse/techlib/docs/installation_m/dx/ba_dx460_schwed.pdf

