Protection for employees assembling or dismantling façade scaffolding systems

D-A-CH-S is an international group of Experts from Germany, Austria, Switzerland and South Tirol (Italy) aiming at transnational harmonization of rules and regulations on fall protection equipment at elevated workplaces.

Fachgruppe D-A-CH-S
Absturzsicherung

No scaffold shall be erected, dismantled or used without appropriate fall protection. Priority must be given to collective safety measures such as frame with build-in guard rails or temporary guard rails. Minimum requirement: use of personal protective equipment against falls from a height.

Key points in brief

- Falls from a height while performing scaffolding work generally occur when working **without appropriate fall protection** on the top scaffolding layer, at material transfer points or other exposed work places.
- Always consider measures that protect all those at risk i.e. technical and collective protection measures before measures that only protect the individual. Where collective fall protection measures are not reasonably practicable, personal protection measures must be used.
- A crucial prerequisite for the **acceptance** of the workers is the practical application of the protection measures and equipment selected. The **ergonomic aspects** should therefore be taken into consideration when determining these protection measures.
- The manufacturer's recommendations must be strictly observed!

Possible collective protection measures

Following measures should be preferred:
Scaffolding systems, which by design can be assembled safely by means of guardrails in advance (e.g. frames with build-in guardrails), should be preferred to provide workers with a high level of safety.
→ Additional work processes necessary for assembling or dismantling the mid-rails and guardrails are no longer required!
(⇨See figure 1 and 2).

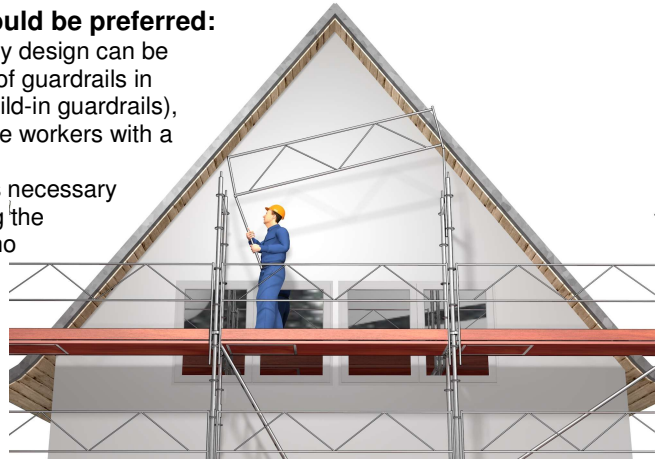

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Figure 1: frame with build-in guard rail while erecting scaffolding

Assembling frames with build-in guard rails:
The assembly guard-rail system shall be so designed that it can be mounted from below before the worker steps onto the next level of the scaffold
(⇨See figure 1 and 2).

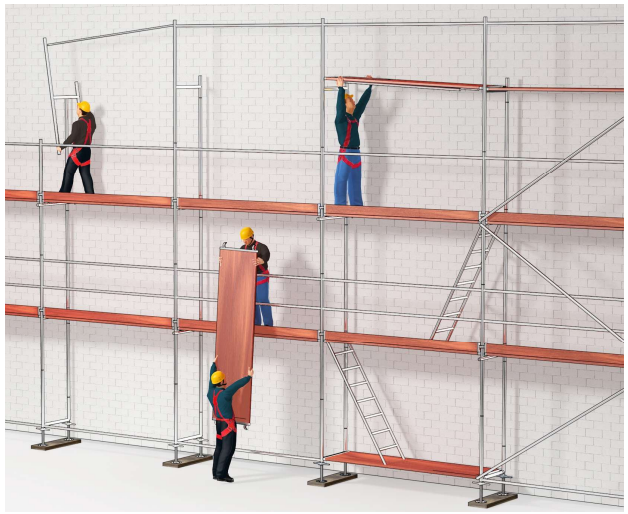

Figure 2: frame with build-in guard rail while erecting scaffolding

Scaffolding with temporary / mobile guardrails:
Before assembling the next scaffolding layer, temporary or mobile guardrails must be mounted and constantly retorqued

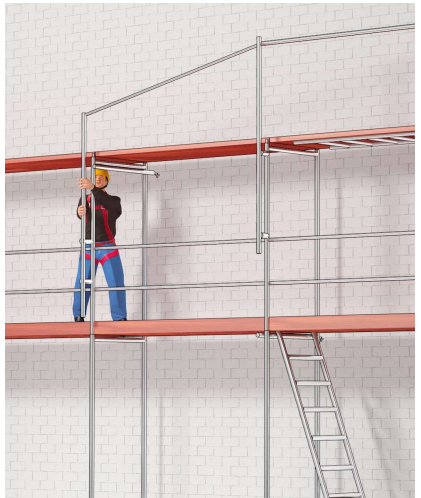

Figure 3: Temporary guardrails assembling

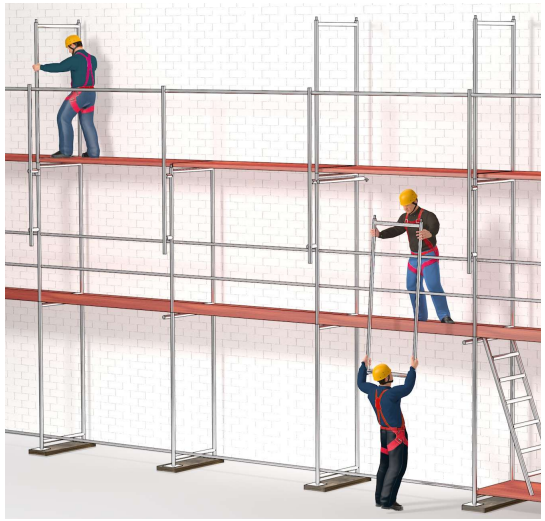

Figure 4: safe Scaffolding work with temporary guardrails

Minimum requirements according to the current state of the art. Use of personal protective equipment against falls from a height.

When using PPE against falls from a height following recommendations shall be adhered to:

- The authorized anchor points on the façade scaffolding must be taken from the manufacturer's assembly and operating instructions. **Note:** Tests have shown that not every material or scaffolding part has adequate load-bearing capacity (aluminum rosette fittings/plastic components).
- Freestanding frames and temporary guardrails are inadequate for use as anchor points.
- Make sure that the free fall distance calculated from the falling edge is sufficient enough.
- The anchor point is basically to be positioned 2 meters above the standing area.

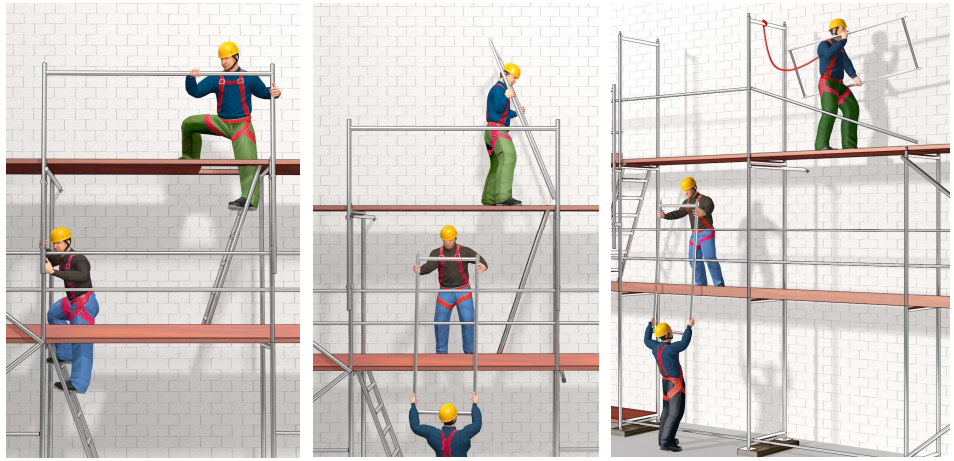

Figure 5 to 7: Scaffolding erection with PPE and temporary guardrails

Erection procedure:

1. Temporary guard rails ensure a safe access to the next scaffolding level in the access bay (ladder, integral/built-in access ways)
2. Two vertical frames and a horizontal brace can be safely assembled with temporary guard rails.
3. As scaffolding erection proceeds, only type-tested PPE against falls from a height shall be used according to its intended use (fall arrest system).

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Notes on PPE against falls

- A personal fall arrest system consists of a body belt or body harness with about 0.50 m long dorsal D-ring extension and a sharp edge tested connector with a shock absorbing lanyard with a maximum working slack of two metres.
- Only use snap hooks, which are designed to be used for their intended purpose e.g. with an appropriate transversal and shear load capacities (see instruction manual / figure 9).
- Only use a safety helmet (EN 397) with a chin-strap which shall be closed and correctly adjusted to prevent impact risk when falling from a height.
- At the initial work preparation all parts of the rescue chain must be set. Rescue after a fall must be a pre-planned event.
- The employer shall provide for prompt rescue of an injured or incapacitated worker hanging after a fall. It is ultimately his responsibility to provide for the rescue of his workers.

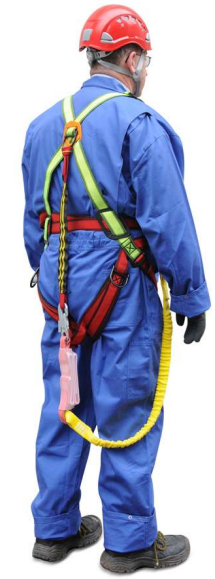

Figure 8: Scaffold worker with PPE

Figure 9: Fastening method – only with the approved snack hook

Figure 10: Improper use of a snack hook (e.g. aluminum) that can break

People working at heights shall be specially trained both on the theory and practical application of PPE. The staff must be given rescue training as well.

Requirements, Standards, Rules and code of practice:

- PPE: EN 361, EN 362, EN 354, EN 355, EN 397
- Façade scaffolds: EN 12810, EN 12811
- **EU:** European Directive 2009/104/EC, Annex 2, §4.3
- **D:** TRBS 2121-1, BGR 198, BGR 199, BGI 663
- **A:** ASchG, BauV
- **CH:** BauAV, Suva Nr. 88816, 84044, 44077, 44078, www.absturzrisiko.ch
- **I:** GvD Nr. 81/08