



RINGSCAFF
PERMANENT
ADVANCED
GUARDRAIL

INSTRUCTIONS FOR
ASSEMBLY AND USE

PERMANENT ADVANCED GUARDRAIL (PAG)
RINGSCAFF | 2024-07-EN

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INTRODUCTION

This RINGSKAFF Assembly and User Manual serves as an instruction manual for scaffolding. It is very important to work safely when erecting the upper levels of a scaffold. This means that a side protection system, such as guardrails, must be in place before the scaffolders can proceed to the next scaffold level. The RINGSKAFF system has various solutions for this side protection during scaffold assembly (see figures 8.6A, 8.6B and 8.6C in the standard manual). Erection instructions for upper scaffold levels using the Permanent Advanced Guardrail, hereafter referred to as PAG, are given in this Assembly and User Manual.

1 ASSEMBLY AND DISMANTLING OF THE SCAFFOLDING

1.1 Inspection before assembly

The following important points need to be considered before starting to erect a scaffolding:

- The function of the scaffolding must be known.
- It must be ensured that all assembly work is carried out exclusively by professional companies and that the scaffolding is used only by those companies. It must also be ensured that all parties involved have qualified and competent personnel available.
- All loads on the scaffold structure and its surroundings and the position of the loads on the scaffold and its surroundings must be verified. The different loads are as follows:
 - The scaffold structure's own weight
 - Payloads on the working platforms
 - Wind loads (possibly combined with cladding)
- The alignment of the scaffolding to the building must be known. It must be ensured that the plan of the scaffold corresponds to the local conditions.
- The ground conditions at the site of the scaffolding need to be checked.
- The condition of the façade at the anchorage points needs to be checked.
- It has to be ensured that the scaffold structure is capable of supporting all the resulting loads.
- It must be ensured that all vertical loads from the scaffolding can be supported by the ground and that all horizontal loads can be carried by the anchors and the building façade.
- The position of the scaffolding in relation to the surroundings needs to be checked.
- All (local) safety requirements must be known and adhered to.
- Possible explosion or fire hazards must be known.
- It must be ensured that the scaffolders erectors are suitably qualified to assemble the scaffolding structure.
- It has to be ensured that the scaffolders have received full training.
- The safety and functionality of all tools used during assembly is to be checked.
- All materials used during the assembly of the scaffold need to be checked.



Note: Damaged material must not be used in any scaffold structure!

1.2 Assembly procedure (according to Assembly and User Manual RINGSKAFF)

- 1.2.1 The assembly starts with the arrangement of the components in their approximate positions.
- 1.2.2 Position the standard lead-off adapter on the base jack (see Figure 1.1) and use wooden boards under the base plate of the base jacks to distribute the loads across the ground.

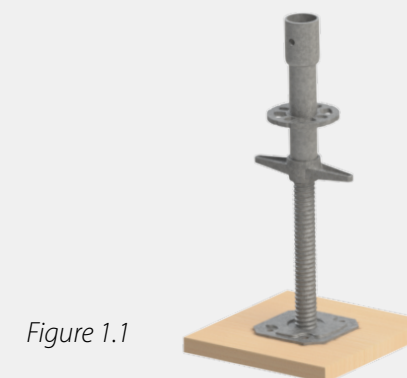


Figure 1.1

- 1.2.3 Repeat these steps to position base jacks at all four corners of the bay and then connect them with tubular ledgers/intermediate ledgers (see figure 1.2.).

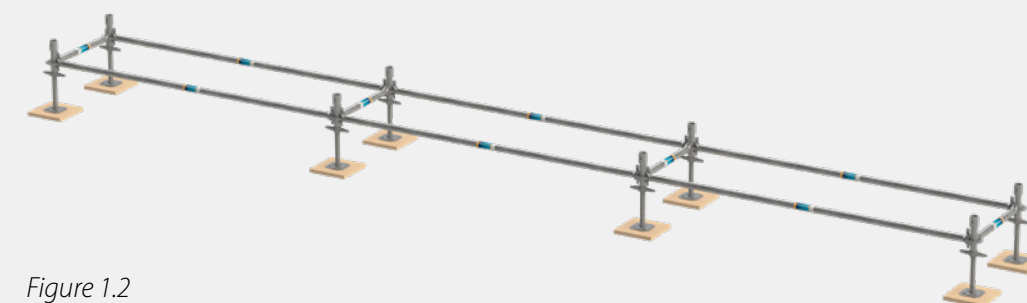


Figure 1.2

- 1.2.4 At the highest point above the ground, start levelling the base with a spirit level and by adjusting the wing nut on the threaded base jack. Lock all wedge joints with a hammer blow. The base is now fixed and the scaffold can be erected vertically.
- 1.2.5 Insert the standards into the threaded base jacks. Use 3 metre standards on the outside and 2 metre standards on the inside of the scaffold for ease of assembly/disassembly (see figure 1.3).

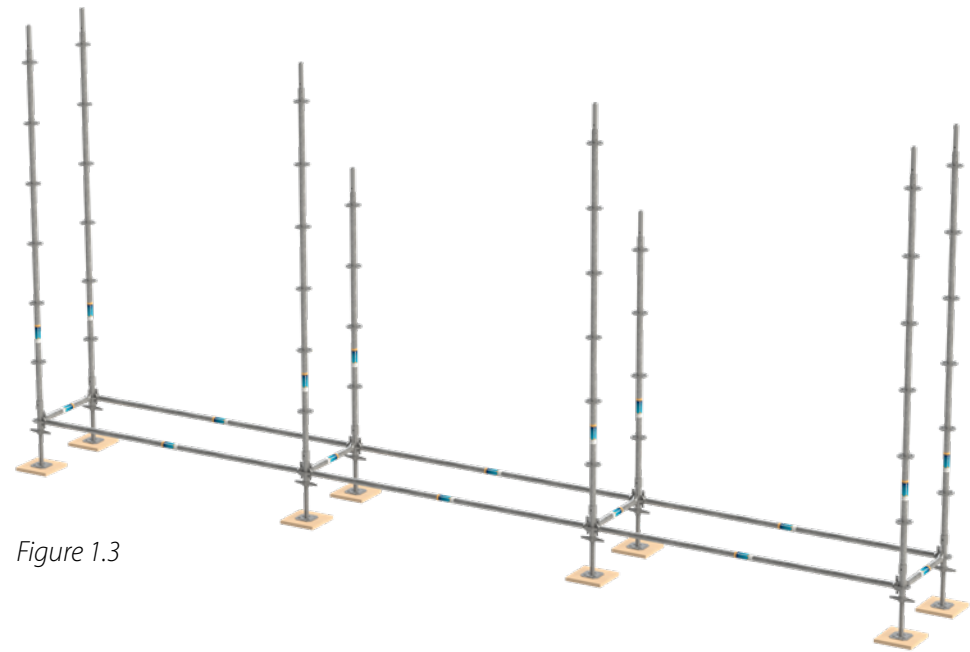


Figure 1.3

1.2.6 Start the assembly of the first level by fixing the tubular ledgers and intermediate ledgers at the designated points (see figure 1.4).

➤ **Note:** It may be necessary to fit the steel deck to this base level to make the first scaffold level easier to assemble.

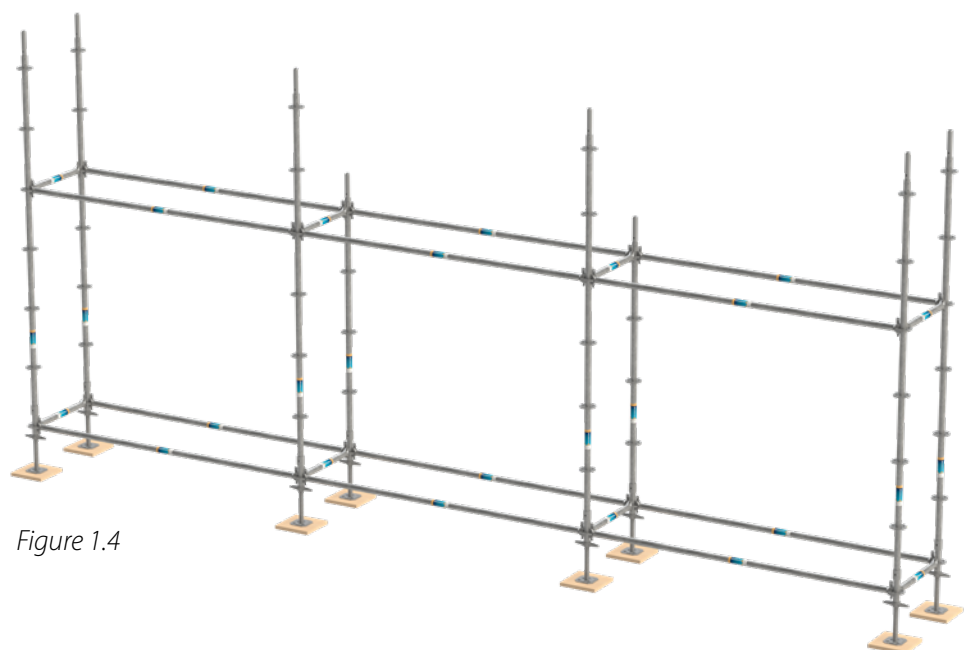


Figure 1.4

1.2.7 Diagonal braces must be fitted to the front sides at least every 5th bay from the bottom to the top of the scaffold or as specified in the design configuration (see figure 1.5).

Diagonal braces will increase the stability of the scaffold structure.

➤ **Note:** If toe boards for horizontal rigidity are used, the adjacent tubular ledgers can be removed.

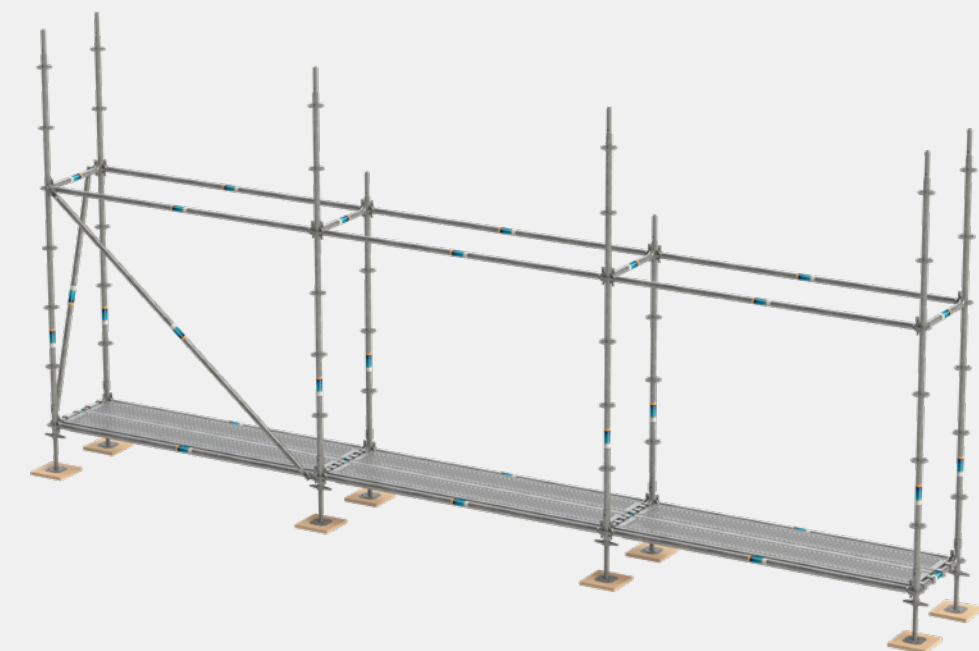


Figure 1.5

1.2.8 Place the RINGSCAFF PAG (in folded state) with the hooks of the short standard in the ledger holes of the rosette at an angle of approximately 45 degrees. First the lower hook and then the upper hook (see figures 1.6.1 to 1.6.3).

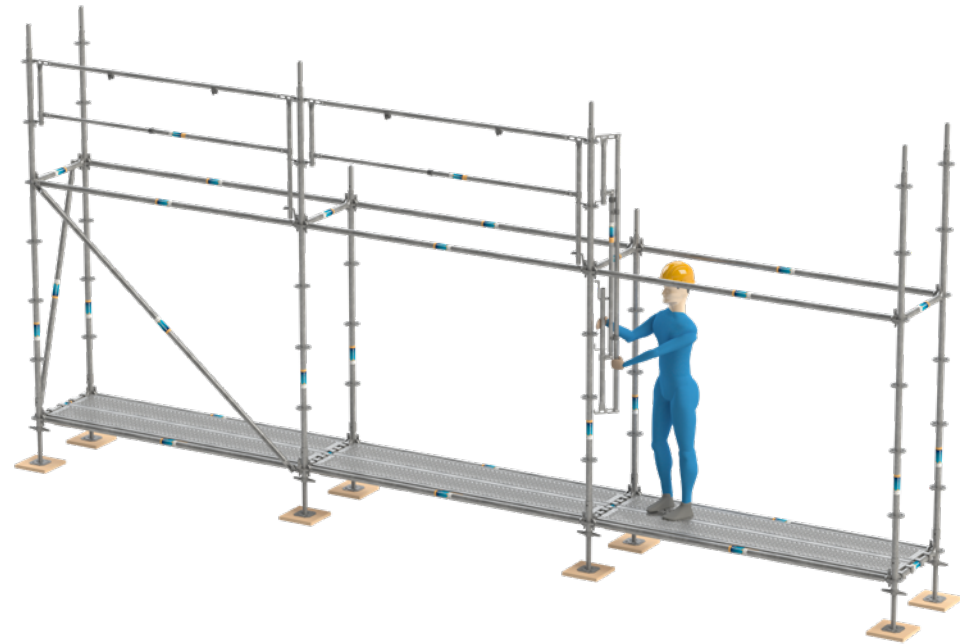


Figure 1.6.1



Figure 1.6.2



Figure 1.6.3

1.2.9 Start unfolding the RINGSCAFF PAG by holding the long standard. Then position first the lower hook of this standard and then the upper hook in the rosettes of the opposite standard of the bay of the scaffold (see figure 1.7.1 to 1.7.3).

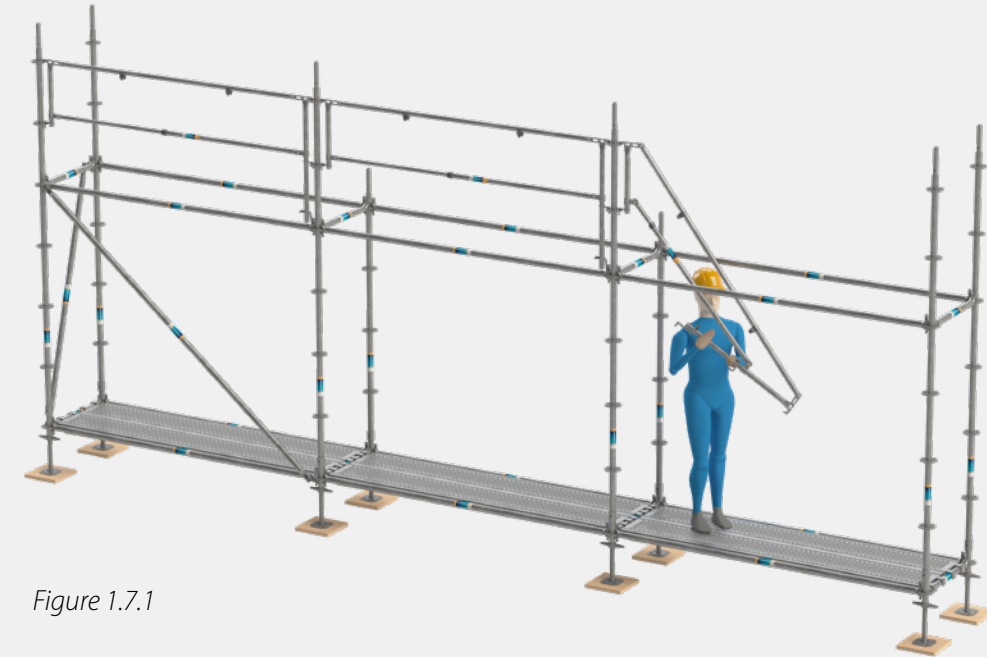


Figure 1.7.1

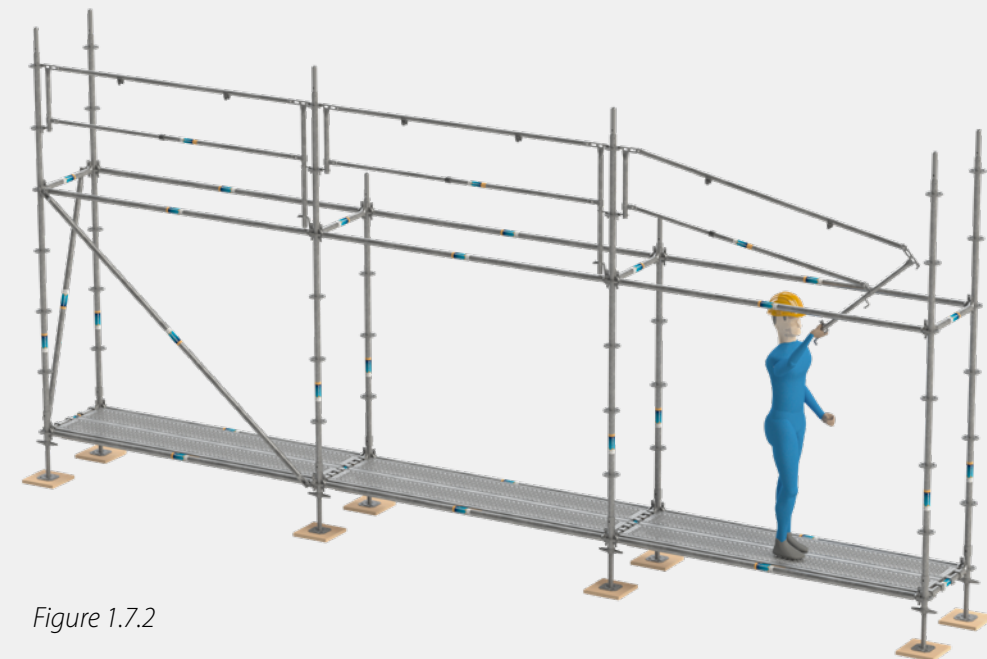


Figure 1.7.2

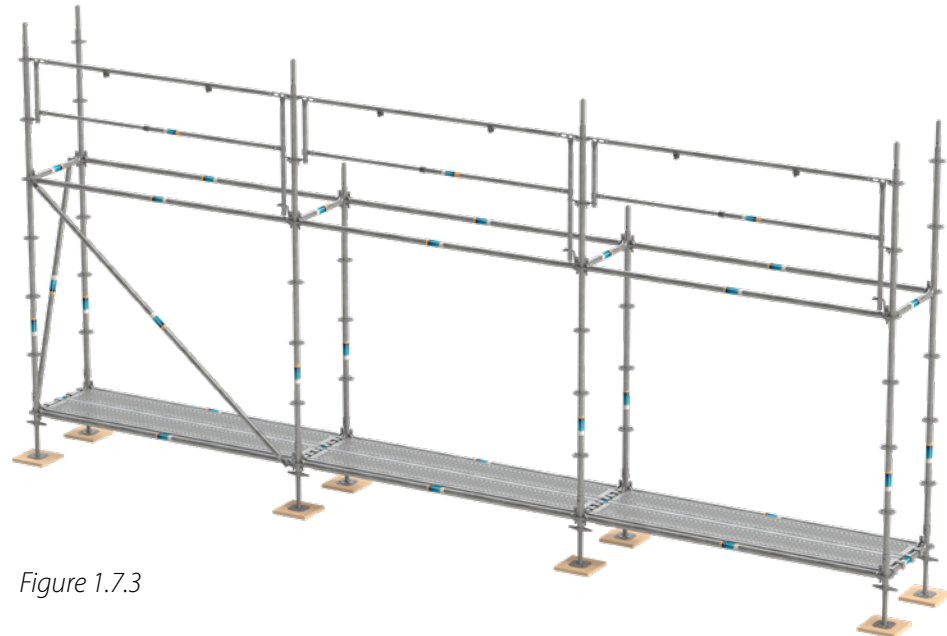


Figure 1.7.3

The RINGSCAFF PAG is prevented from lifting up by a bottom hook with a flattened end on one side and an S-shaped locking pin at the bottom of the guardrail standard on the other side. The flattened hook is able to pass through the hole in the rosette at an angle, but not in its final position. The S-shaped locking pin is free to rotate and can be placed on the inside or outside of the longitudinal ledger below the rosette (see figures 1.7.4 and 1.7.5 for details).

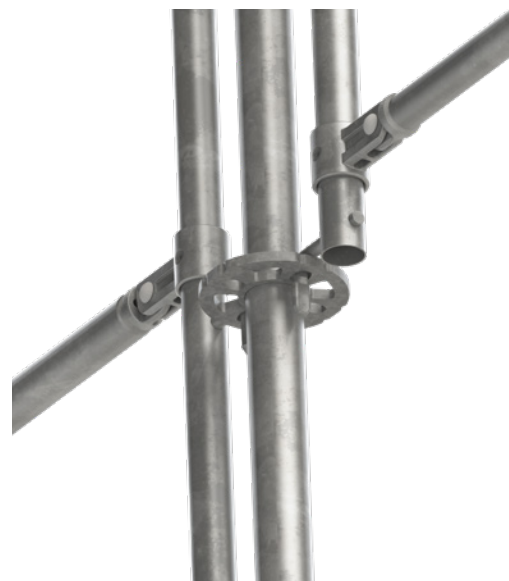


Figure 1.7.4



Figure 1.7.5

1.2.10 Similarly, place the RINGSCAFF PAGs for shorter lengths at the ends of the scaffold (see figures 1.8.1 to 1.8.3).

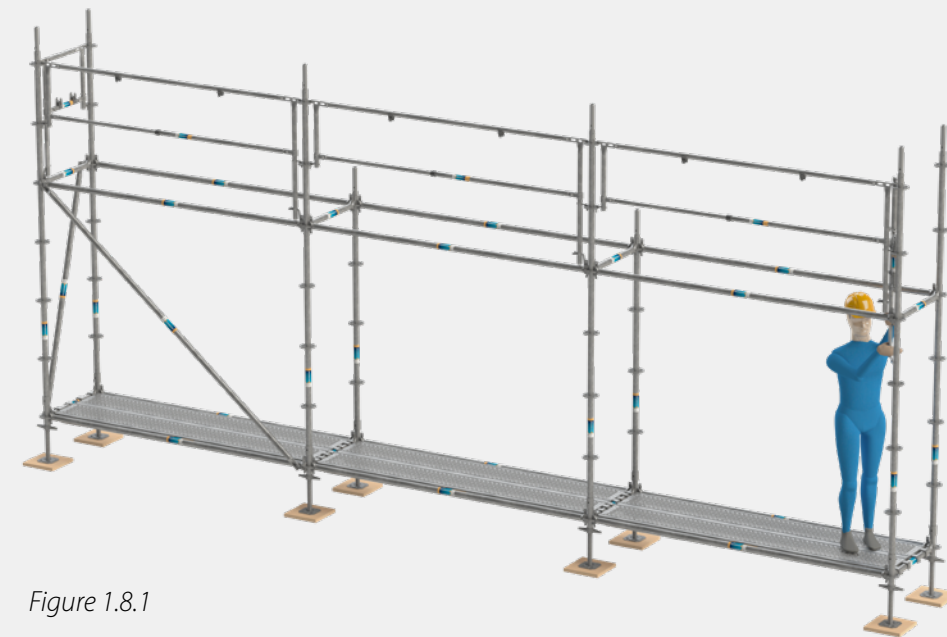


Figure 1.8.1

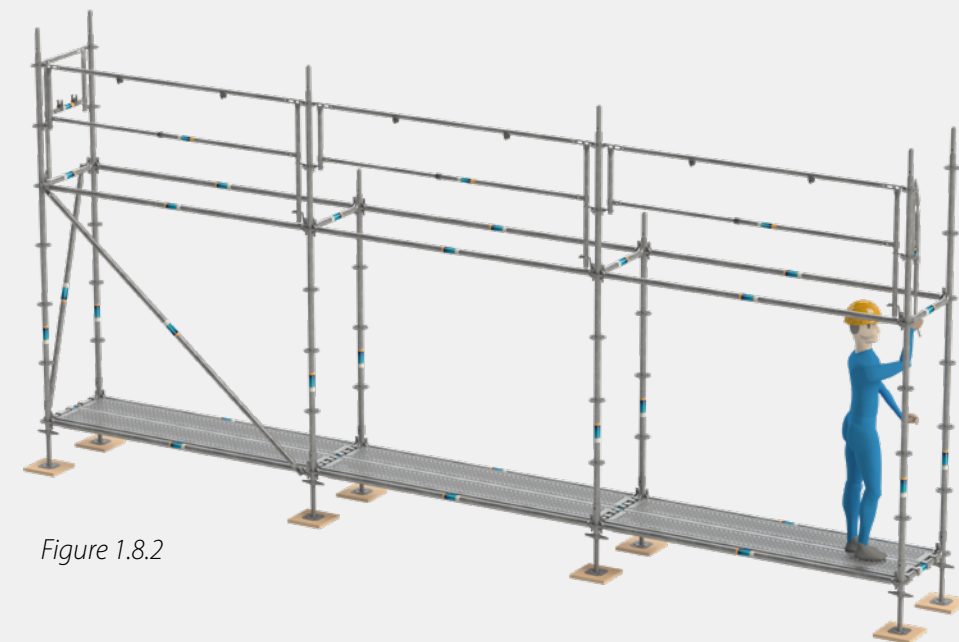


Figure 1.8.2

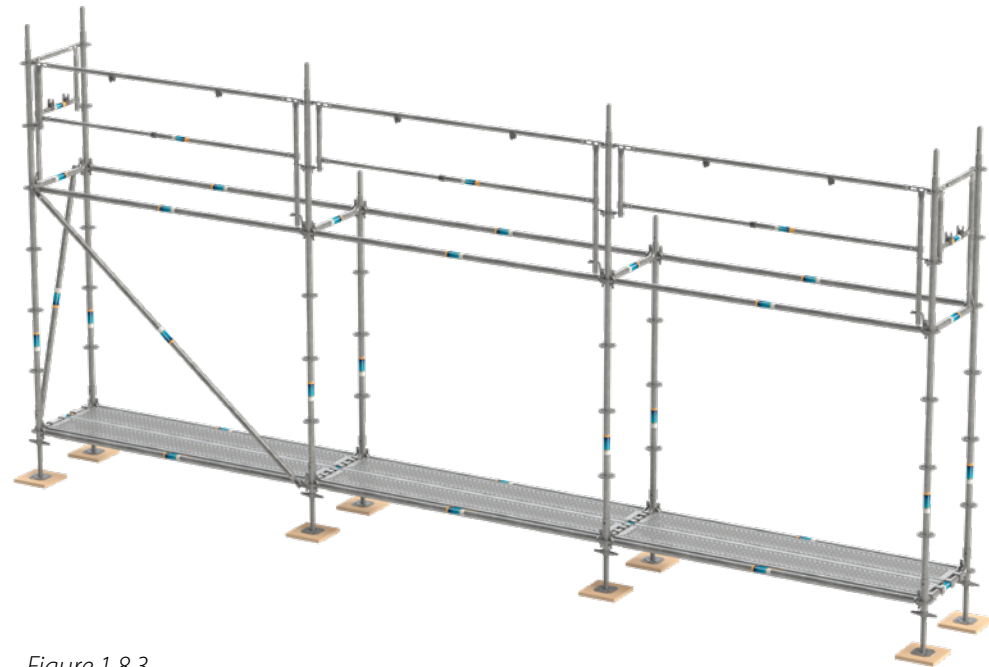


Figure 1.8.3

1.2.11 Place steel decks/ladder platforms on the first lift level from below. Then proceed to the secured first level and place the toe boards (see figure 1.9).

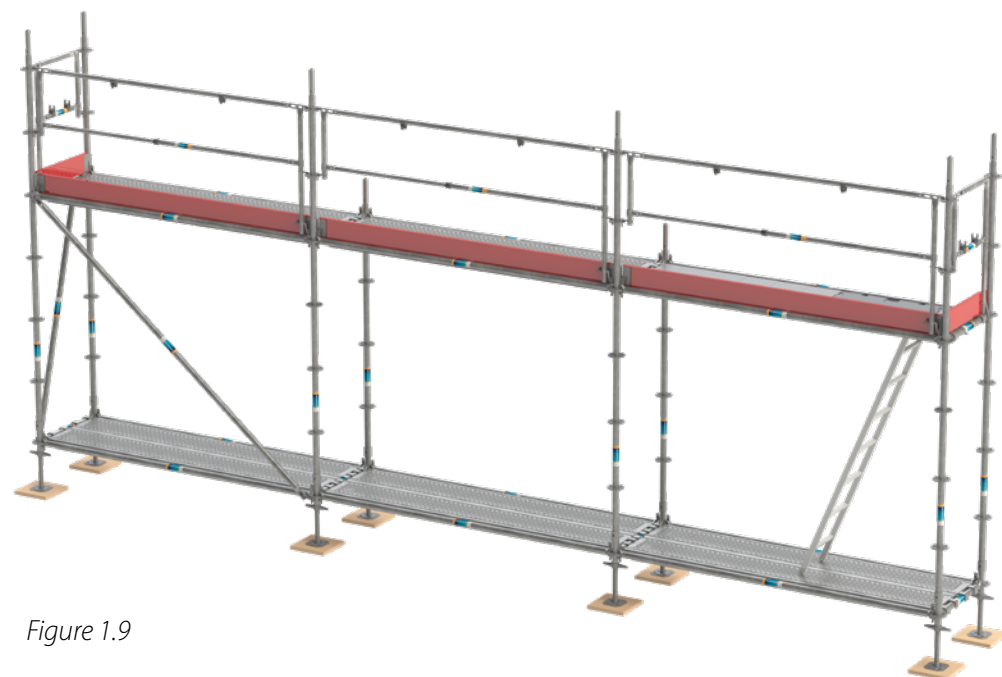


Figure 1.9

1.2.12 From the first scaffold level, the next set of 2 metre standards, ledgers and diagonals can be positioned (see figure 1.10). There is no need to replace the PAGs with ledgers, as the PAG is a permanent guardrail that remains in place until the entire scaffold is dismantled.

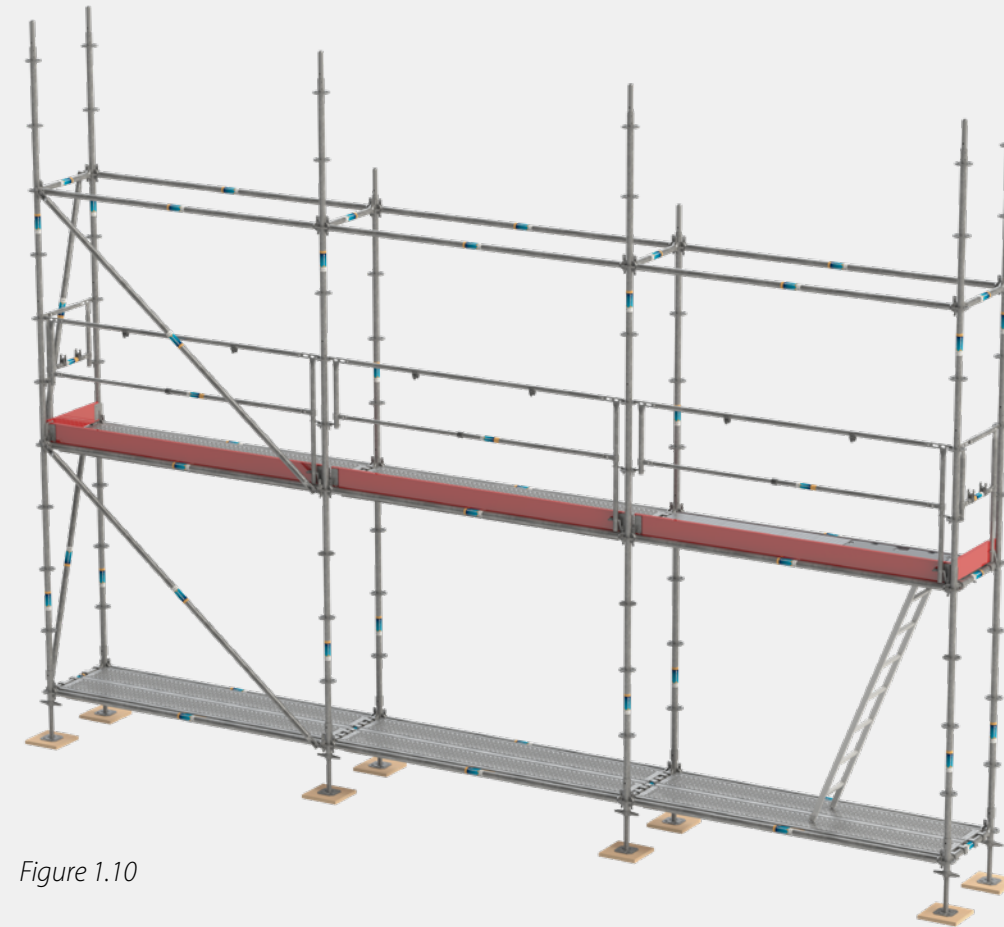


Figure 1.10

1.2.13 Position the next set of RINGSKAFF PAGs (see figure 1.11) and repeat steps 1.2.8 to 1.2.10.

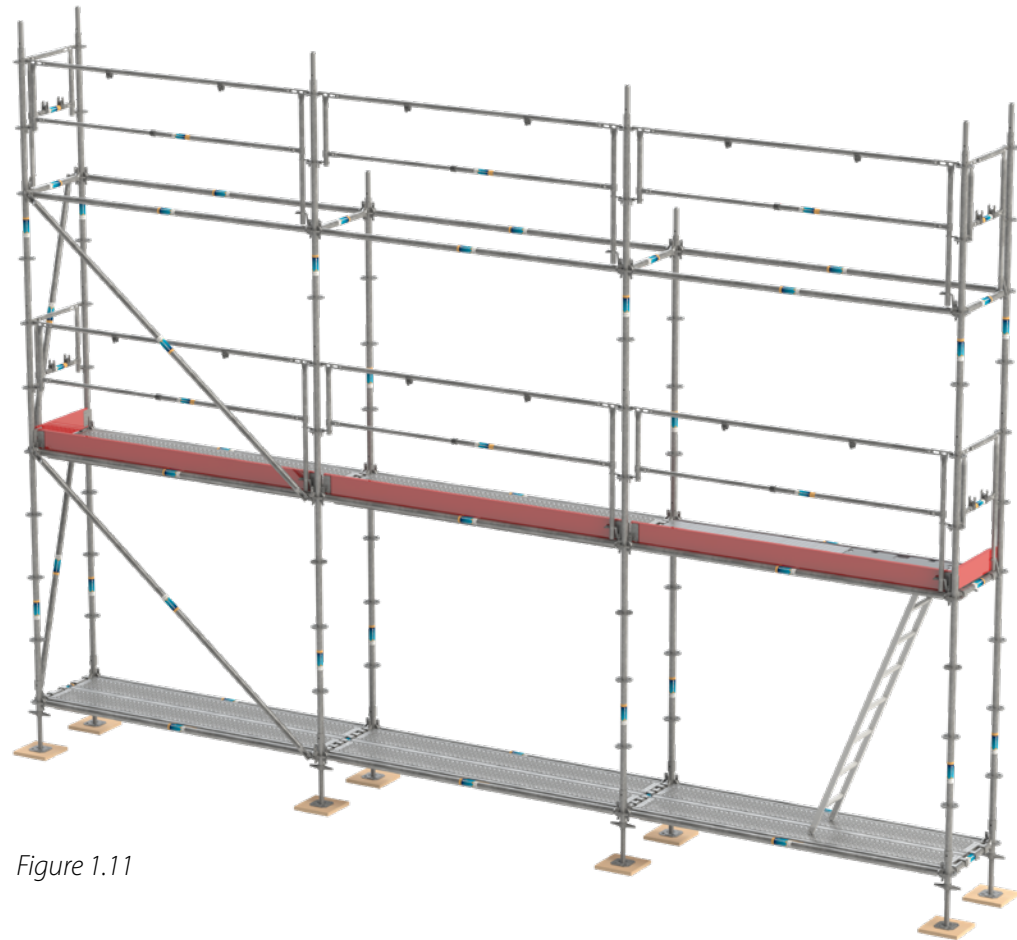


Figure 1.11

1.2.14 The steel decks, (ladder) platforms and toe boards can now be positioned for the second level (see figure 1.12).

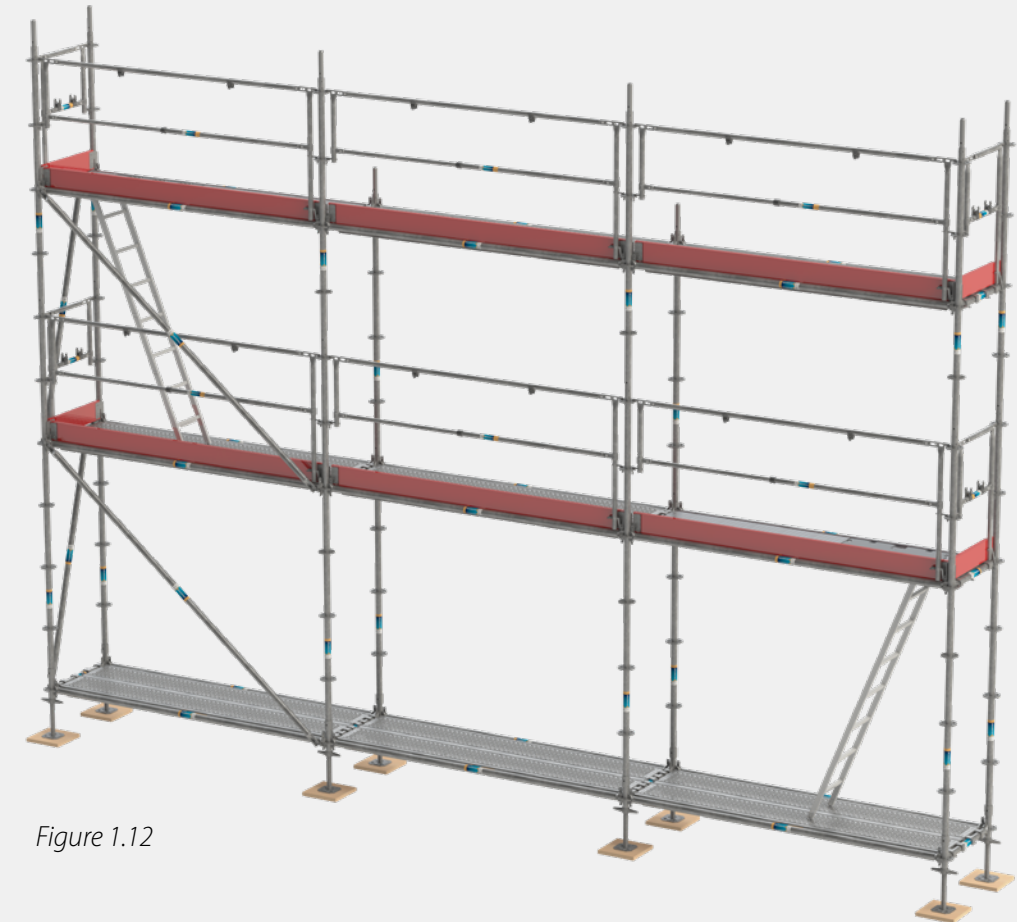


Figure 1.12

1.2.15 Place anchoring according to paragraph 6.1 from the RINGSCAFF Assembly and User Manual.

1.3 Use of the scaffolding

If needed, it is possible to open a bay of the scaffolding by folding one of the guardrails. The following steps need to be done to open a bay:

- Remove the toe board of the bay that needs to be opened.
- If the S-shaped locking pin is positioned inside the longitudinal ledger, the steel deck or platform of the bay that is opened needs to be removed temporarily in order to fold the guardrail. When the S-shaped locking pin is placed on the outside it is not necessary to temporarily remove the steel deck or platform.
- Rotate the S-shaped locking pin to a position where the long guardrail standard can be lifted out of the rosettes.
- Fold in the guardrail and hang it just outside the scaffold.
- When the steel deck or platform has been removed, it can be placed back in position (see figures 1.13 and 1.14).

1.4 Dismantling procedure

The following operations and checks form the basis for safe dismantling of the RINGSCAFF scaffolding system:

- All platforms must be free of loose material. The scaffold is to be inspected to ensure that it is still in the condition in which it was erected in e.g. no components or ties have been removed or incorrectly reattached. The "Scaff-Tag" on the scaffold must indicate that the structure is no longer approved for use.
- Dismantle the scaffolding in reverse order to assembly. This means starting at the top and dismantling from level by level downwards. During dismantling and modification, the scaffold must always be in a stable, usable and safe condition.
- Start by removing the toe boards from the highest platform.
- Go to the level below the highest platform and remove all steel decks and platforms from the highest level.
- Next, remove all PAGs from the highest scaffold level.
- The next step is to remove all ledgers and diagonals from the highest scaffold level before the standards can be removed.
- Always work from a platform no more than 2 metres below the level from which the components are being removed. Dismantle the scaffold step by step in the order described above.
- Remove the tie bars one after another as the scaffolding is dismantled.

Note: Tie bars should only be removed when they prevent further dismantling of the scaffolding.

- The components must be carefully and safely lowered to the ground by hand from the scaffold or by a suitable safe lowering method such as crane and lift.

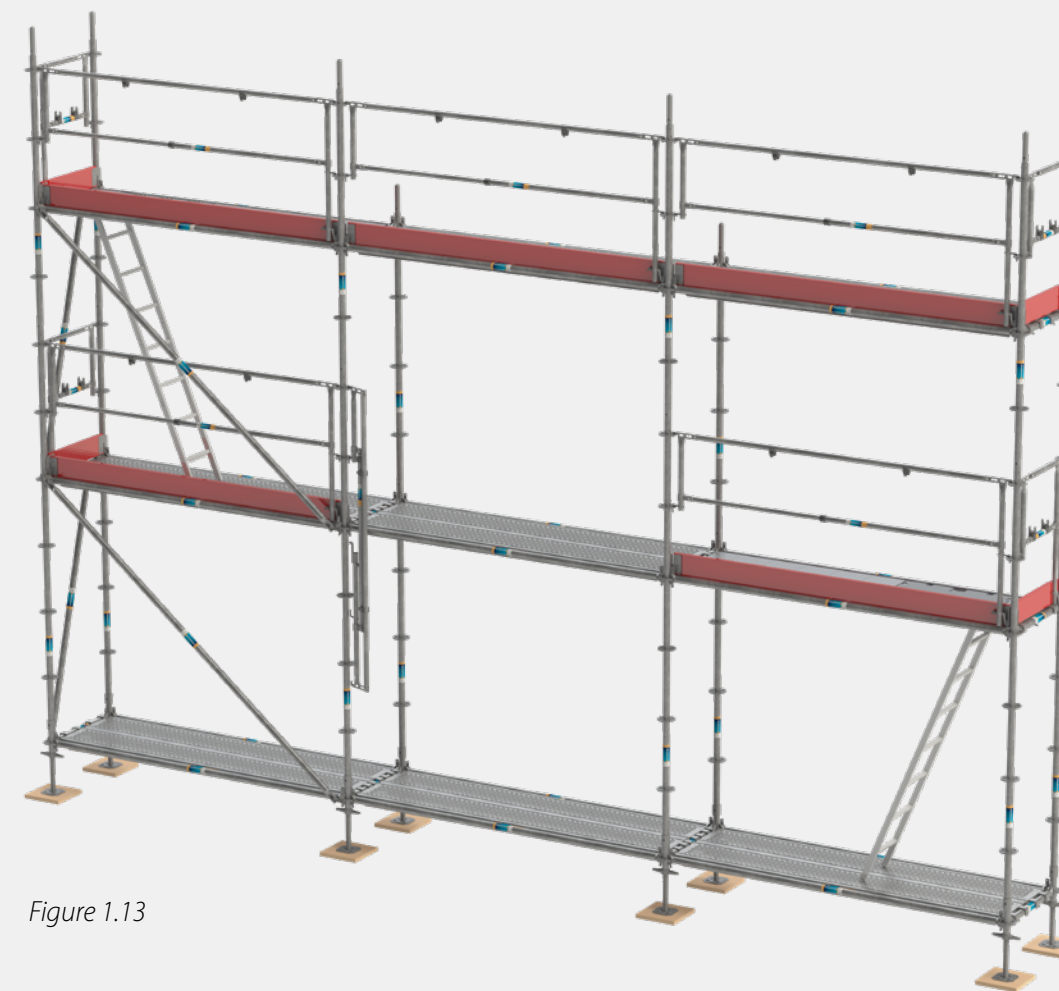


Figure 1.13

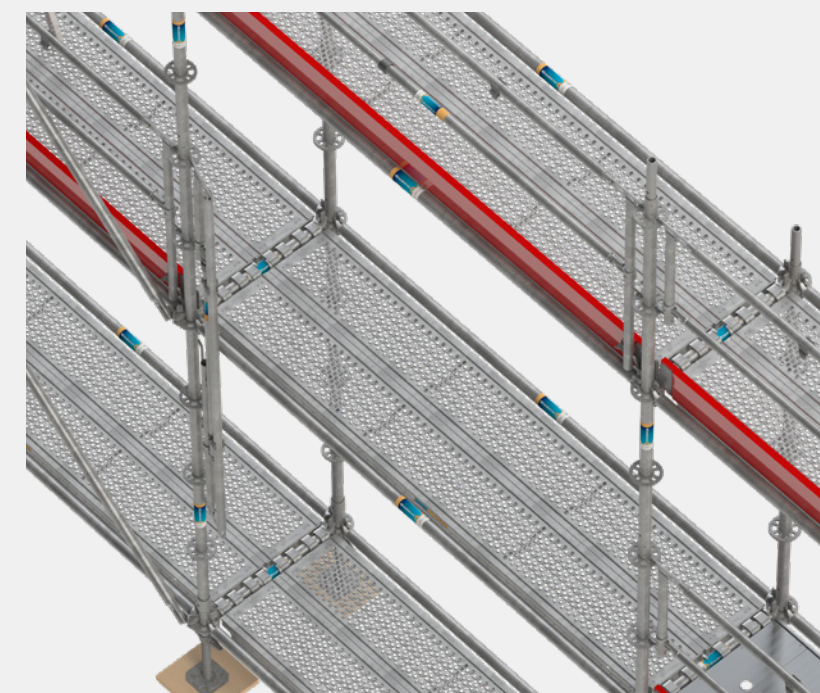


Figure 1.14

2 STACKING AND TRANSPORT

2.1 Stacking procedure

2.1.1 The stacking starts with positioning the first placed PAG against the vertical standards of the scaffold rack (see figure 2.1).



Figure 2.1

2.1.2 On a standard scaffolding rack (E08SR0012) it is possible to place four folded PAGs next to each other (see figure 2.2).

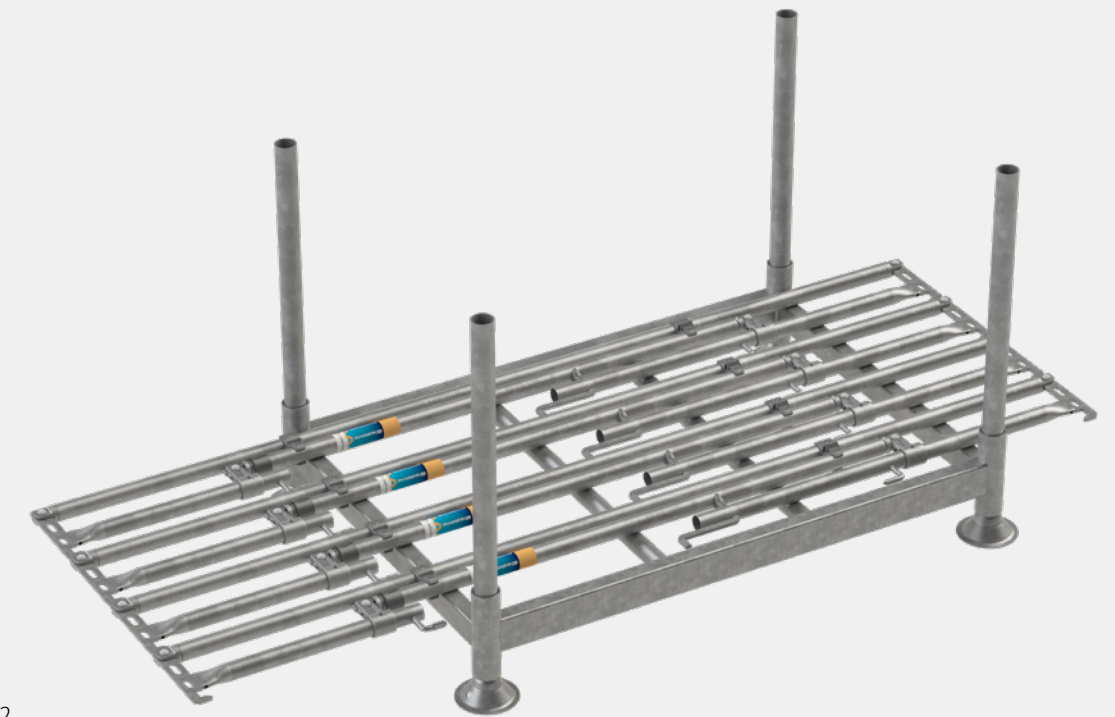


Figure 2.2

2.1.3 Each PAG has two plastic stacking clips. These stacking clips not only hold the PAG in place when folded, but also help to stack the guardrails on top of each other. One side of the stacking clip has a recess while the other side has a protrusion. When the guardrails are stacked on top of each other, the protrusion is placed exactly in the recess, preventing the guardrails from sliding over each other (see figures 2.3.1, 2.3.2, 2.4.1 and 2.4.2).

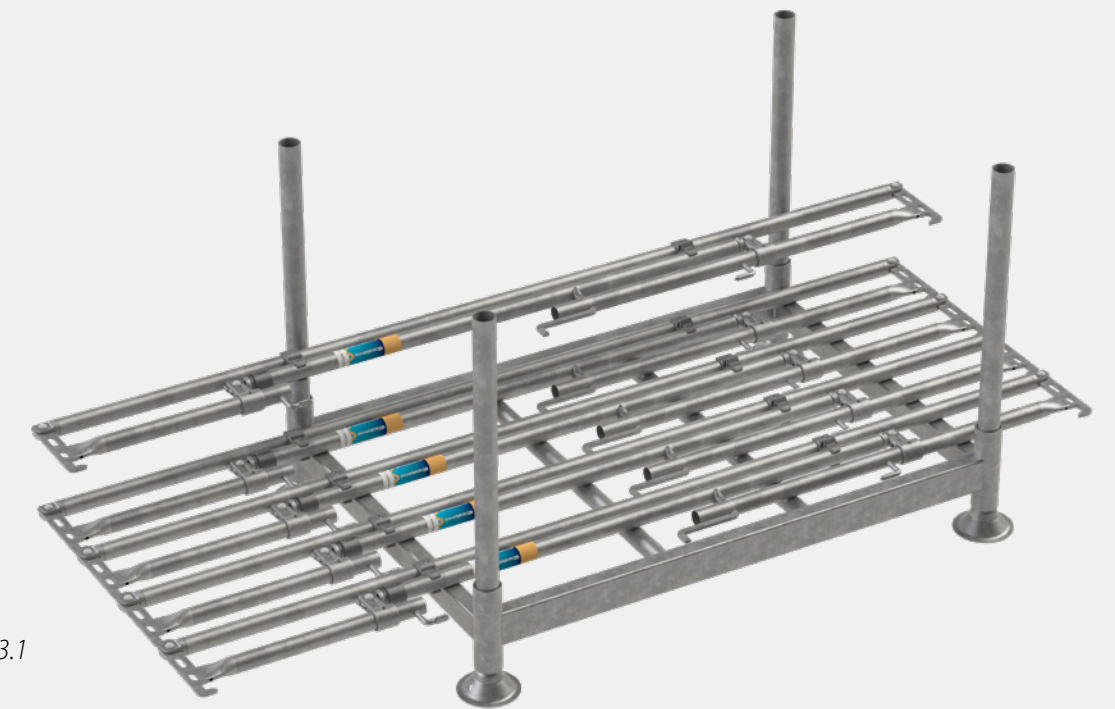


Figure 2.3.1

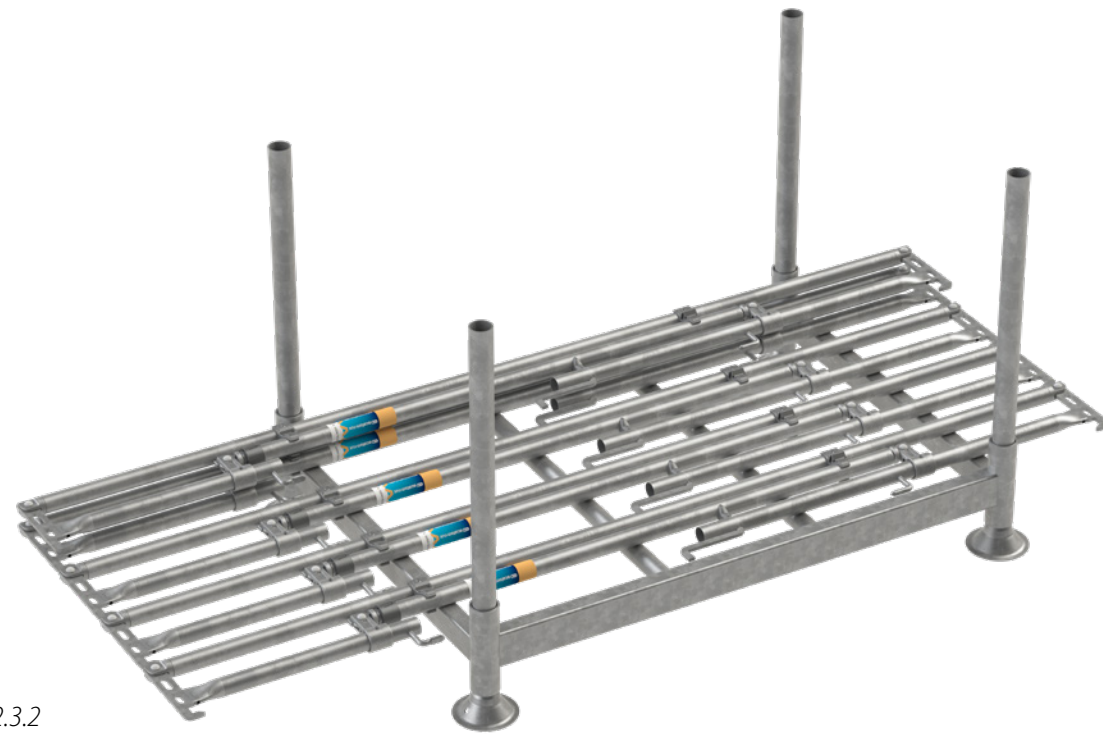


Figure 2.3.2

2.1.4 An additional guardrail can be placed on each guardrail of the first level (see figure 2.5). In total, 50 PAGs can be stacked on a scaffold rack (see figure 2.6).

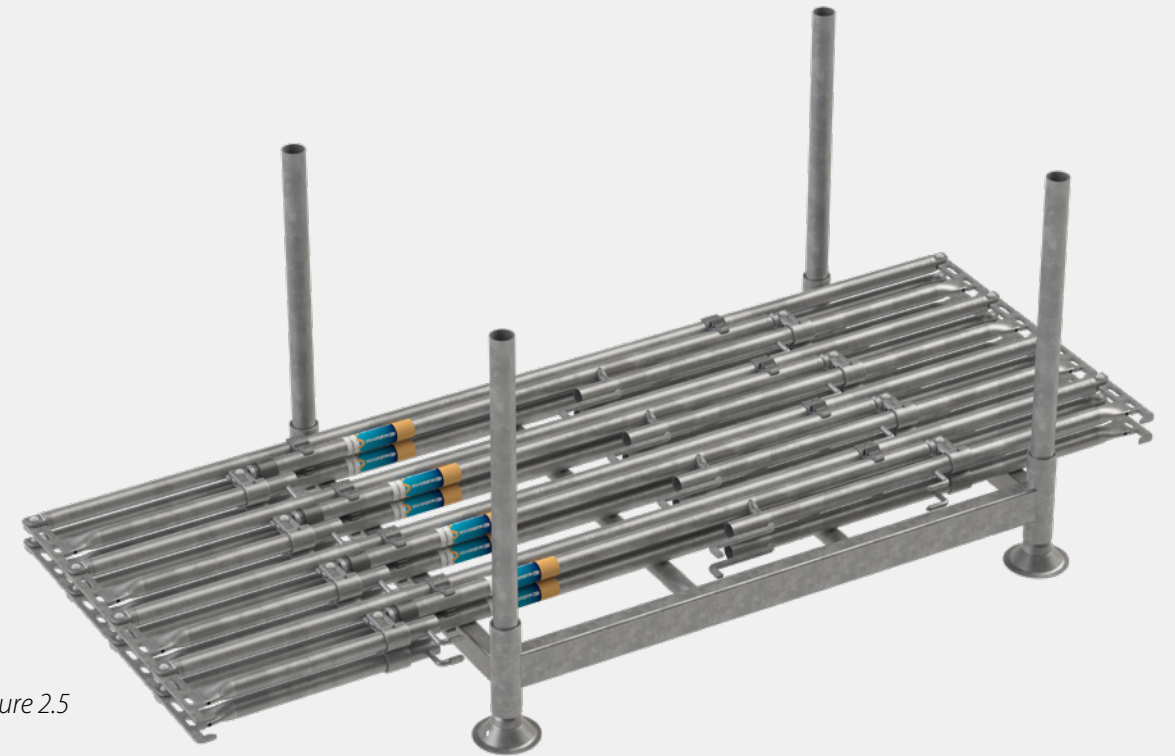


Figure 2.5



Figure 2.4.1



Figure 2.4.2

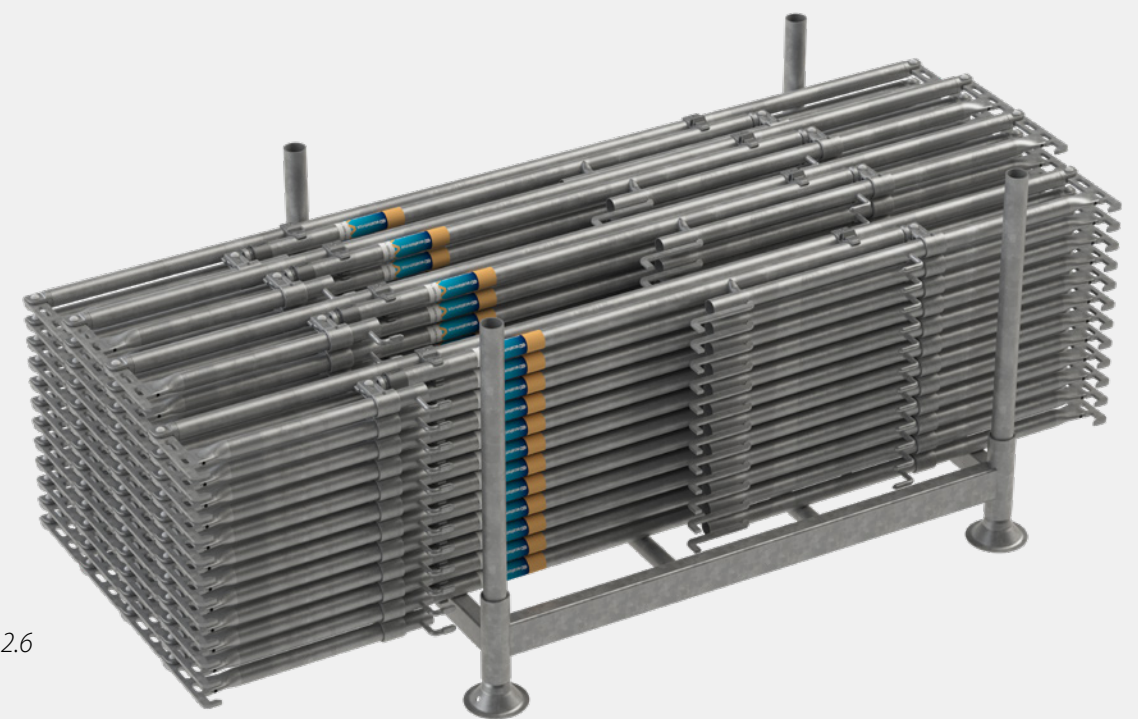


Figure 2.6

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