

RWE	I111-001 Working at height and along the waterfront	Instruction
		Doc. No: 2005-0049901

Working at height and along the waterfront

Scope RWE Generation NL
Prepared by Health & Safety GES-NL
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Document information

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Changes from the previous version				
<ul style="list-style-type: none"> Addition definition working at height within RWE Addition prevention of falling parts Addition of requirements for working with telehandlers Addition of "working on the waterfront" section 				
Purpose of instruction				
Managing the risk of falling when working at height and controlling the risk of falling and drowning when working on the waterfront within RWE Generation NL				
Target group				
All persons involved who are responsible for the preparation, construction and use of work equipment to perform work at a height				
Related documents				
Type of document	Title			Code
Procedure	General RI&E			
Process	Managing H&S risks			P053b
Process	Maintaining installations			P080
Process	WCM - Work Clearance Management			P001
Instruction	Task Risk Analysis (JRA)			I002-001

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Terminology and abbreviations

Term or abbreviation	Description
Lanyard	A lanyard is a tool (cord) for attaching tools and other objects to a belt, harness or belt, for the safe transport of tools by workers who must work at height.
Mobile scaffold	A mobile scaffold is a free-standing, semi-free-standing or wall-mounted mobile scaffold. Rolling scaffolds are equipped with (swivel) wheels and composed of prefabricated parts. They contain auxiliary floors and one or more work floors for performing work at height. So called "room scaffolding" is also included here

Introduction

Definition working at height RWE Generation NL:

Work at height is referred to when there is a danger of falling in the presence of high-risk conditions, openings in floors, or when there is a danger of falling 2.5 metres or more. (arbobesluit 3.16)

Hazards of working at height

Several hazards may be present when working at height:

- Falling from heights due to, among other things
 - Falling down from ladders or stairs;
 - Falling through openings in floors and/or landings;
 - Falling from structures, buildings;
- Danger of drowning when working at height above water or close to water (falling from a quay)
- Risk of falling objects when working at height, which may hit persons at lower levels;
- Possible longer escape route for evacuation in case of calamities.




Life Saving Rule: "I protect myself from falling and drowning".

Risk assessment

A risk assessment must be carried out by a competent person before any work at height is carried out. This assessment will determine what controls are needed to avoid or reduce the risk to as low a level as is reasonably practicable.

The risk assessment should cover the following points:

- The activity - equipment used, chemicals, weights involved and level of physical activity, i.e., construction, maintenance, visual inspection, etc.
- Used access equipment - mobile powered access platforms, scaffolding, landings, ladders, personnel protective equipment, etc.
- The person - physical condition, age, specific medical condition, e.g., dizziness, pregnancy, effects of a medicine being taken
- The height of a probable fall and probable consequences
- Location - near/over water, walkways, traffic routes, other work groups and proximity to handrails or other collective fall prevention measures,
- The environment - extreme weather conditions, temperature, wind, smoke or fumes,
- Duration of work,
- Probability of extending the working range,
- Condition and stability of the work surface, e.g., sensitive surfaces, soft ground, roofs.

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- Other hazards, e.g., exposure to electric conductors, possible overhead obstructions, high-voltage lines, pipelines, hot surfaces, fumes or smoke from neighbouring buildings which are not under the control of RWE.

Work equipment that can be used for (temporary) work at height

- Fixed and/or mobile scaffolding
- Aerial platforms (Mobile Elevating Work Platform, MEWP)
- Rope Access
- Telehandlers
- Work baskets in combination with a mobile crane
- Suspended platforms
- Platform stairway
- Fall protection and facilities when working on roofs

If temporary work at a height cannot be carried out safely and under appropriate ergonomic conditions at a suitable workplace, the most appropriate work equipment shall be selected to ensure and maintain safe working conditions. To achieve this:

- are the dimensions of the work equipment:
 - tailored to the nature of the work to be performed;
 - geared to the foreseeable loads, and
 - such that passage is possible without danger;
- the most appropriate means of access to the temporary workstation at a height shall be selected according to the traffic, height to be spanned;
- the chosen means of access allows for evacuation in the event of imminent danger;
- switching from a means of access to platforms, floors or footbridges and vice versa does not create any additional fall risks.
- collective security measures shall take precedence over personal security measures;

Collective fall protection measures (e.g., fixed guardrails) are interrupted only at points of ladder or stairway access.

Fall-arrest equipment shall be of such configuration and strength as to prevent or arrest falls from a height and, as far as possible, to prevent injury to workers.

When the performance of the work requires a collective fall prevention safeguard to be removed temporarily, effective compensatory safety measures shall be taken. The work shall not be performed until such replacement arrangements have been made.

After the definitive or temporary termination of the work, the collective fall protection safeguards shall be reinstalled.

Temporary work at height shall be carried out only when the weather conditions do not jeopardise the safety and health of workers.

Ladders and stairs are **only used for access and visual inspections**. An exception can be made if there are no alternatives possible, for example due to the existing characteristics of the location/workplace that cannot be changed. The risk assessment and derived measures must then be recorded in a work permit or documented in some other way (LMRA).

Rope access and positioning techniques shall only be used under circumstances where a task risk analysis indicates that the work can be performed safely and where the use of other, safer work equipment is not reasonably possible.

There is always a risk of falling parts when working at height, for example by using safety nets, lanyards, toe boards and storage bins for materials and tools.

Preventing falling parts

There is always a danger of falling parts (tools, materials, etc.) when working at height. To prevent this, the use of tool lanyards is **mandatory** if one cannot make the workplace sufficiently safe to prevent falling parts. Examples are the installation of safety nets, toe boards, closing/sealing openings in floors. The use of a tool lanyard is also mandatory when working outside scaffolding, work floors, platforms, etc. Storage of (small)

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material at height only in suitable plastic containers, lifting bags or sufficiently sturdy bags. Storage of small material at the workplace in cardboard is not permitted. Also, when ascending/descending ladders and stairs, ensure that material is in suitable bags and sacks so that on stairs one hand can always be kept on the handrail/banister. For ladders, always keep two hands free.

Scaffolding

General

For the design and construction of scaffolding, RWE Generation NL follows the Scaffolding Guidelines, see: <https://richtlijensteigers.nl/>

The instructions for the user are described in the A-sheet scaffolding construction: <https://www.volandis.nl/>

Additional requirements and policies RWE Generation-NL

Scaffolding may only be designed, erected, modified, inspected and released by an RWE selected main contractor.

Within RWE, there is an additional requirement for category complex scaffolds with difficulty level 4 (according to scaffolding guideline), that an **inspection calculation is** made by an independent body (e.g., IV Construction). The responsibility lies with the scaffold erector to commission and demonstrate this. This is guaranteed in the contract through purchasing.

See link for iv construction: <https://iv-groep.nl/nl/home>

For standard scaffold configurations see section 2.2.6 of the Scaffolding Directive.

For complex scaffolding, see section 2.2.3 of the Scaffolding Directive.

Furthermore, RWE Generation NL requires **all** scaffolding to be properly grounded in accordance with section 4.9 of the Scaffolding Directive. Random checks on the effectiveness of the earthing are made by RWE.

Scaffolding that cannot be earthed restricts the use of work equipment. Draw up a task-risk analysis to see if and how work can still be done safely, for example:

- hand tools with built-in battery;
- tool connected to a safe voltage;
- tools connected to a safety power supply that is not placed on the scaffold.

No wooden scaffolding boards or wooden toe boards are used when :

- installation parts showing signs of leakage and release of hot combustion air, flue gases and/or fly ash;
- parts of the installation on which hot work is to be carried out from the scaffold;
- installation parts where scaffolding parts can be irradiated by (infrared) heat sources.


In addition to the general scaffolding guidelines, RWE has the following policy in applying the preferred order of access to scaffolding by means of:

1. Folding gate
2. Safety bar
3. fixed scaffolding railing section

Responsibilities and authority

Client (RWE)

- The RWE client (usually in the role of Maintenance Coordinator) is responsible for indicating to the contractor the purpose for which the scaffolding will be used;
- The RWE client is responsible for indicating to the contractor whether additional work lights are necessary during the erection of the scaffold(s);

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- All scaffolding handed over to RWE by the main contractor will be checked for suitability for the work by the RWE client;
- Should organise adequate supervision that ensures the proper use of the scaffolding.

Contractor (main scaffolding contractor)

- Designing, calculating, constructing, adapting and dismantling all scaffolding in accordance with the Scaffolding Directive and the specific requirements per site and intended use by RWE;
- Ensures safety at the workplace during construction, modification and disassembly;
- Ensures the quality of the scaffolding, including adequate earthing, during the entire period of use;
- Periodic checks during the period of use with **monthly re-inspections** before the end of the inspection period and recorded in the scaffolding logbook;
- Ensures that the documents and control calculations for complex scaffolding and training certificates for main contractor scaffolding construction staff are present on site.
- The timely commissioning of the check on the drawing and calculation of complex scaffolding by IV Bouw;
- Makes contractual arrangements with IV Bouw regarding the above-mentioned control calculations;
- Approval of all scaffolding for the specific purpose described in the order;
- Applying the (hoisting) scaffolding labels (green - normal, yellow - hoisting or orange - special measures scaffolding card / Scaffold tag) and signing them off;
- Handing over the scaffolding to the client;

User

The user can see whether the scaffolding is safe to use by making a few simple observations. Examples include:

- the support of the uprights;
- a regular anchoring pattern;
- closed work floors;
- the presence of double railings and toe boards;
- a regular pattern of braces;
- safely accessible work floors;
- a working stock that does not cause overloading and does not block the floor for normal use.

Furthermore, the user shall ensure that:

- Any defects found shall be reported immediately to the supervisor and the work shall be stopped;
- the scaffolding is used for its intended purpose;
- he himself or others do not make any adjustments to a scaffold, but has the designated scaffold erector do so;
- the workplace is tidy, and work equipment and materials do not constitute a tripping hazard;
- material and work equipment are stored in boxes or crates as far as possible to prevent them from falling off the scaffold.

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High-risk scaffolding in the vicinity of high voltage

Measures for scaffolding to be erected in the vicinity of overhead or underground high-voltage lines

- The RWE E-Installation Manager (IV) should be involved in the risk analysis and design of the scaffolding during TRA discussions during the work preparation period;
- RWE site manager should be involved in the TRA discussion during the work preparation period when underground high-voltage lines are involved;
- It may also be necessary to consult, inform or involve the grid manager (TenneT) or the network distribution company (e.g., Enexis) during the work preparation period. All contacts then go through the E-Installation Manager.

Mobile scaffolds

General

Scaffolding within the blue zone is erected and inspected at RWE by the main scaffolding contractor.

In the office environment, third party mobile scaffolds may be used for maintenance work, using only well-maintained mobile scaffolds that visibly comply with the NEN-EN1004 standard.

The A-Sheet mobile scaffolds (A-blad rolsteigers) serves as a minimum starting point for the assembly and disassembly of mobile scaffolds


Alternatives to the use of mobile scaffolds are fixed scaffolds, scissor lifts, aerial work platforms, telescopic handlers and/or mobile work platforms.

Responsibility of client (RWE)

- Inform the contractor of the purpose for which the mobile scaffold may be used, if normal scaffolding is not suitable (the contractor must consult with the client before mobile scaffold towers may be used);
- Organise adequate RWE supervision during the execution of the work in consultation with the contractor;
- Ensure that the users of the mobile scaffold tower are sufficiently instructed in order to use it safely.

Contractor's responsibility

- The user responsible for erecting the mobile scaffold tower to be used must have received sufficient instruction or training to erect a safe mobile scaffold tower, and shall also make careful use of the instructions for use for the mobile scaffold tower;
- A mobile scaffold tower is always erected or dismantled by at least two people;
- Ensures that the scaffold is always placed on a horizontal surface that is level and load bearing;
- A mobile scaffold is always built from behind a guardrail;
- Only climb a mobile scaffold from the inside of the scaffold. Never climb from the outside
- All wheels on the brake!
- Rolling scaffolds must always be stabilised sideways with stabiliser rods.
- Work floor must have toe boards

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Aerial platforms (Mobile Elevating Work Platform, MEWP)

General

Do not use the MEWP to transport workers to higher locations. Climbing into and out of the work cage at height is strictly prohibited. The MEWP should not be used in winds exceeding force 6. If a thunderstorm is approaching, work in the MEWP must be stopped immediately. The basket door/bar must be always closed. Use a positioning harness in accordance with EN-358 and strap in as close as possible to the fastening eye provided.

An aerial work platform is not a lifting device. It is therefore forbidden to use the MEWP to lift loads. This will cause the maximum workload to be exceeded. The employee must have sufficient visibility in the work basket for the work to be carried out. Additional lighting may be required. It is also necessary for the employee to have a good view of the undercarriage. If circumstances arise where this is not the case, a colleague must be present on the ground who can give instructions via a means of communication. All-round fencing must be secured in accordance with I-112.

Responsibility of client (RWE)

Organise adequate RWE supervision, for compliance with the agreements made, during the execution of the work in consultation with the contractor.

Contractor's responsibility

- Ensure that only aerial work platforms that are CE marked, demonstrably inspected and used in accordance with the manual are used;
- Ensure that employees have access to fall protection equipment, communication devices and personal protective equipment;
- Ensure that the knowledge and experience of the employees is appropriate to the hazards, the activities and the surroundings of the workplace, trained with certification (to meet standards according to SSVV Training Guide);
- Ensure proper instructions and agreements are in place prior to using the AWP, based on the hazards and risks present;
- Ensure that an inspection of the work equipment has taken place daily before using the AWP according to the operating instructions. This includes: the guard rails, closure of the access gate, emergency stop devices, mast, oil level, fuel level and tyre pressure); Ensure that a check of the work equipment (guardrails, closure of access gate, emergency stop devices, mast, oil level, fuel level and tyre pressure) is carried out daily before the AWP is used;
- Be careful with soft substrates and use the outriggers with driving plates if necessary.

telescopic handler

General

A telescopic handler (rigid or rotating) may only be used in accordance with the requirements stated in the operating instructions.

Furthermore, a telehandler may **NOT** be used as an aerial work platform. Thus, a personnel carrier may **NOT** be attached to the telehandler.

Attachments may only be used if they have an EC declaration of conformity (CE mark), are permitted according to the operating manual of the telescopic handler and the Machinery Directive must be complied with.

- if a telehandler is used as a crane, the same standards and rules apply as for cranes. (Dutch Certificate of Professional Competence issued by TCVT at an operating load moment ≥ 10 ton metres according to I032)

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If the machine and/or user does not meet all the requirements, it may not be used. The operator must have adequate visibility of the work to be carried out from the cab. Additional lighting may be required. It is also necessary for the operator to have a good view of the surroundings. If circumstances arise where this is not the case, a colleague should be present to give instructions, via a means of communication. Demarcation around to be secured in accordance with I-112

Responsibility of client (RWE)

Organise adequate RWE supervision, on compliance with the agreements made, during the execution of the work in consultation with the contractor.

Contractor's responsibility

- Ensure that only telehandlers are used that have an EC Declaration of Conformity (CE mark), are demonstrably inspected and used according to the manual;
- Ensure that employees can use communication devices and personal protective equipment;
- Ensure that the knowledge and experience of employees is appropriate to the hazards, work activities and workplace environment, trained with certificate (to comply with standards according to SSVV Training Guide);
- If the telehandler is converted into a mobile crane with a capacity of 10 tons meters or more, the operator must also hold a Dutch certificate of professional competence (TCVT certificate). A Dutch TCVT mobile crane certificate is also sufficient.
- Ensure correct instructions and agreements are in place prior to using the telehandler, geared to the dangers and risks present;
- Ensure that, every day before using the telehandler, the work equipment is checked in accordance with the instructions. Think of: seat belt, closure of door(s), emergency stop devices, mast, oil level, fuel level and tire pressure);
- While driving, the telescopic handler's scoops must be protected;
- Beware of soft surfaces and use the outriggers with driving plates if necessary.

Working bucket in combination with a mobile lifting vehicle

In principle, cranes are not suitable for hoisting people. The European Work Equipment Directive gives national governments the authority to deviate from this when it comes to working with workbenches/bins. RWE Generation NL only permits work with work bins in necessary cases, whereby the following must be observed.

It is forbidden to start work before:

- A. the employer has drawn up a written work plan which indicates, as a minimum:
 1. the justification as to why no suitable work equipment designed for the transport of persons is available in the places that are difficult to reach, or that their use will lead to an unsafe situation in view of the environmental factors present;
 2. justification as to why there are no other work methods that would allow these places to be reached safely given the environmental conditions present; and
- B. also considered, worked out and laid down in the work plan how, at the location where the work is to be carried out, it will be carried out safely. The employer must involve a safety expert in drawing up the work plan.

The employer must notify the supervisor (the Netherlands Labour Inspectorate) of any work activities involving the use of a work tray or work platform at least two days before commencement of the work activities. The notification must contain at least a brief description of

- the location where the work is to be carried out;
- The number of persons involved; and
- the date and time when the work will start, as well as its duration.

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Only workbenches or work platforms shall be used in which the full load of the workbench or work platform and associated hoisting equipment does not exceed 25% of the maximum working load of the hoisting crane, unless a technical provision has been made to limit the working load to 50% or less of the maximum working load that can be hoisted with the hoisting crane. The maximum number of persons who may be transported must be indicated on the work basket, as well as the maximum working load in kilograms, the weight of the work basket itself and the registration number of the work basket.

The hoist operating position is permanently manned.

the bucket or work platform at heights must not be left by the persons on it and must not be entered by the persons outside the bucket or work platform.

When using work platforms, the following applies for the crane used in combination with a work platform or work platform:

- a mobile crane with a manned work platform or bucket is not driven;
- driving a crane on a crane track with a manned work platform or bucket at a speed not exceeding 2.5 km/h;
- the vertical speed of the load, the angular speed of rotation of the jib and the rate of change of flight do not exceed one quarter of the design speed of the crane; and
- the wind speed, measured at the highest point of the hoist, does not exceed 13.8 m/s and does not exceed the wind speeds permitted for the hoist in normal operation.

This applies to the persons involved in the work area:

- they have an effective means of communication at their disposal; and
- effective arrangements are made to evacuate them in the event of danger.

There are several factors that must be considered situationally in the work plan, such as weather conditions, the occurrence of a pendulum effect (swinging) of a work bench or work platform, which creates a crushing and pinching hazard. Demarcation of the lifting area to be ensured in accordance with I-112.

Responsibility of client (RWE)

- Ensure that a TRA is prepared during the work preparation phase, which is discussed with the Operations work permit preparer and the contractor; this discusses the job, the risks and possible measures.
- Organise adequate supervision during the execution of the works.

Contractor's responsibility

- The TRA and the Work Plan must always be present at the workplace for the work to be carried out;
- Only persons over 18 years of age may use the work bucket;
- Only one crew member gives instructions to the crane operator;
- Duration of work (without break) is maximum 4 hours;
- There must always be eye contact between the crane operator and the person in the bucket;
- Before use, the work cage must be visually inspected and have a valid inspection certificate;
- Each crew member must wear a fall arrest device (short line). This safety line is attached directly to the designated anchorage points in the work bucket;

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Suspended platform systems

General

A suspended platform installation (HBI) is understood to be a temporary mobile suspended platform, consisting of a mobile suspension construction to which, on ropes, a freely suspended work bridge is attached. With a HBI from after 1997 a CE-marking and declaration of conformity is obligatory. The HBI with all its parts is seen as a composite machine and must meet the requirements of the Machinery Directive. This means that the HBI must be CE marked by the manufacturer, accompanied by a CE declaration of conformity.

Responsibility of client (RWE)

- Indicate to the contractor the purpose for which the HBI will be used;
- Ensure that a TRA is prepared during the work preparation phase and discussed with the OPS work permit preparer and the contractor;
- Organise adequate RWE supervision during the execution of the work in consultation with the contractor.

Contractor's responsibility

- Ensure that the HBI is appropriate for the number of users and the demands of use, and strong enough to support the loads - including those of the additional tools;
- Ensure that all users have received and understood instruction for the safe use of the HBI;
- Ensure that a work plan is drawn up. The work plan lays down project-specific agreements on the preconditions. The responsibilities of the parties involved are also laid down. The work plan is drawn up in consultation between the parties involved and updated during the project where necessary. The work plan mentions: the type of HBI, the length of the suspended platform to be used, and the specific maximum workload. Any subsequent adjustment of the HBI, including any relocation, shall be based on this work plan. The work plan shall be updated in case of deviations and/or further agreements which shall be recorded in the project discussions. The plan of work shall be accessible to all concerned, including users. The work plan is always present at the workplace. If there is a H&S plan, the HBI work plan must be part of it and be drawn up based on a **project-specific (task) risk inventory**. A HSE plan is compulsory if there are special hazards due to the environment or work location, such as drowning hazards, fall hazards, exposure to hazardous substances, ionising radiation, high voltage, assembly or disassembly of heavy prefabricated elements (Section 2.28 of the Working Conditions Decree).
- The work plan contains all elements of a TRA in accordance with I-002 and should, among other things, also weigh up the risks and measures regarding good communication, supervision and an adequate rescue plan.
- All parties and persons involved in the workplace must be aware of the danger zones and the agreed control measures.

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Working at height using Rope Access

Rope access is an alternative method of working safely at heights where we use ropes, climbing techniques and safety equipment to gain access to places that are difficult to reach. This can be in height or in depth, for example, at work sites above water, in confined spaces or inside buildings. We use this method to avoid obstacles in a safe and efficient manner in order to carry out various activities. We use rope access when other work methods cannot be used more safely.

A seat with appropriate accessories shall be provided, considering the risk assessment task and duration of the work and ergonomic requirements. Depending on the work equipment to be used, the necessary measures shall be taken to minimise the risks to workers inherent in such equipment.

Responsibilities of client (RWE)

- Informing the contractor of the purpose and conditions of the Rope Access activity;
- Organise consultation with the IRATA level 3 employee about the anchor points to be used during the Rope Access activity's);
- Organise adequate RWE supervision during the execution of the work in consultation with the contractor.

Requirements for the Contractor

- The Contractor shall be demonstrably an IRATA (Industrial Rope Access Trade Association) certified company;
- At least one employee on the project must be in possession of the IRATA level 3 certificate;
- All employees must have their training and experience history (IRATA logbook + certificate).

Contractor's responsibilities

- A Rope Access work plan must be drawn up for each assignment during the period of work preparation, paying attention to the specific risks that arise during the performance of that activity.
- The risks and associated control measures must be recorded in a Task Risk Analysis document (TRA) that is discussed in accordance with I-002 TRA with the persons and departments of RWE and the Contractor involved.
- A rescue plan is a mandatory part of this.
- The same applies to secured communication and supervision (never working alone).
- Secure all around in accordance with I-112 and use safety nets if necessary.

Working on flat roofs

Measures to be taken by the organisation and employees when working on a flat roof

Before you start

- Make sure you have a valid work permit.
- At a roof height of 2.5 m or more, but also at a roof height of 2 m with a fall hazard, no one should work without equipment, as the consequences of a fall can still be very serious.
- The requirements for edge protection on flat roofs depend on the distance from the edge to the workplace:
 - < 2 metres: full guardrail or railing (details on the strength of the railing are given in AI-15);
 - between 2 and 4 metres: demarcation of the workplace by means of posts with chains or fences, the workplace and the route to it must be clearly marked;
 - 4 metres: the roof edge protection can be omitted, the workplace and the way leading to it must be clearly marked (lines/warning pictograms).

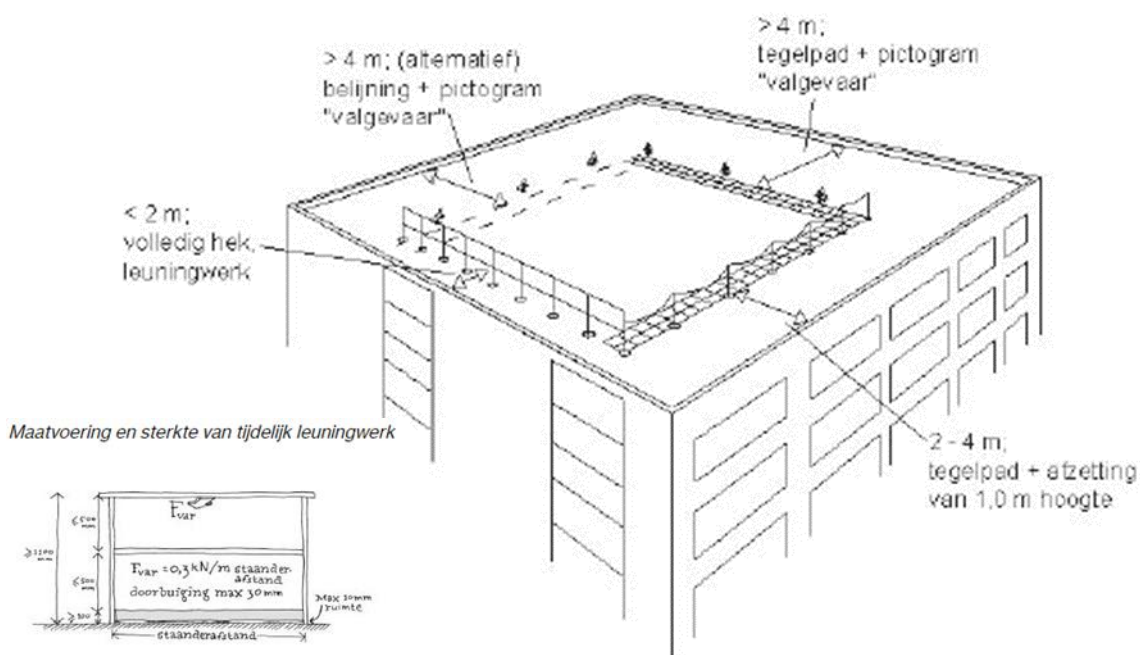


Figure: Barrier/marking depends on the distance from the roof edge

If collective fall protection is not reasonably practicable, then within 4 metres of the roof edge use should be made of (in this order):

- Anchorage point (demonstrably suitable) with fixed working line
- Personal fall protection (only if other measures are not possible)
- Check whether the materials and personal protective equipment to be used have been inspected.
- Consider how to escape safely.
- Be alerted to changing weather conditions.
- Carry out a last-minute risk assessment (LMRA).



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At openings in the roof (think also of skylights):

- Cordon off the area with hard deposits.
- Secure the hazardous area below/next to it to prevent passage, according to I-112.
- Keep the area around the opening free of obstacles.

During work

- Make sure that nothing can fall, not even through openings in the roof.
- Keep escape routes clear and accessible.
- Make sure the workplace is tidy.
- Take the roof load into account
- Provide adequate supervision during implementation

Organisation measures when working on a flat roof

Ensure that a TRA is prepared:

- Check whether the supporting structure of the roof is suitable for the work, paying particular attention to the point and roof loads.
- In the absence of collective fall protection, provide a certified structure to which individual fall protection can be attached.
- Determine the length of the lanyard for the specific work situation.
- Make sure that a rescue plan is in place and how communication will take place in that case.
- Adapt escape routes and passages at barriers if necessary.
- Pay attention to activities that can influence each other.
- Pay attention to environmental factors such as weather (rain/wind/freezing/slippery)

Draw up a work permit, indicating the fall arrest line to be used.

PS. Pitched roofs are not or hardly used at RWE GC-NL. If they do occur, a TRA must be drawn up and the AI-15 must be checked in consultation with Safety Experts.

Ladders and stairways

Please note, Ladders and stairs are **only used for access and visual inspections**. Only if absolutely no alternatives are possible, and this can be substantiated, can a ladder or staircase be used. The risk assessment and derived measures should then be recorded in a work permit or otherwise documented (LMRA).

Risks when using ladders and stairs

- the forces exerted on them can cause ladders to slip or tip over
- When climbing or standing on the ladder, one can lose contact and grip with the ladder and thus lose balance.
- fall backwards when transferring to the next higher level with insufficient support

Requirements for ladders and stairs

Ladders and stairways must comply with the following standards and legislation, for both design and use:

NEN 2484 - Portable climbing equipment - Ladders and stairways - Terms, definitions, requirements, test methods, use and maintenance

NEN-EN 131 - Ladders part 1-8

Commodities Act Decree on Portable Climbing Equipment

Occupational Health and Safety Decree 7.23a

Ladders and staircases must be inspected annually and display a valid inspection sticker and inspected for defects before every use.

Introduction

A ladder is portable climbing equipment consisting of stiles (ladder uprights), rungs and fittings. We distinguish between single and multiple-section freestanding ladders (push-up or extension ladders, telescopic ladders and push-up ladders), multiple-section freestanding ladders (A ladders or reforming ladders) and folding ladders. In principle, ladders can be used to reach a higher level, but they are not suitable for use as a workplace, and they are not suitable for raising or lowering materials.

A ladder consists of two uprights at the side with rungs in the middle. The rungs are the steps you stand on. A staircase also has stiles at the sides, but unlike the ladder, it always has a fixed length and flat steps to stand on, rather than rungs. A staircase can be equipped with a platform (airplane stairs) and must always have a railing of at least 60 cm high.

The use of ladders as **working places at heights** is **not permitted**. Alternatively, one can use, for example, a spiral staircase with stabiliser bars. Or a so called "eco-lift".



Left: Eco-lift

Right: Platform stairway with stabilizer bars and access fence as fall protection

only used for access and visual inspections Ladders and stairs must be secured against slipping (both sideways and longitudinally). Ladders shall be equipped with a stabiliser or spaced-out stiles at the bottom, which can prevent lateral tilting. The upper and lower stiles should be equipped with anti-slip material (caps). On slippery floors, the use of a ladder mat is recommended to prevent slipping.



Ladder with diverging uprights



Ladder with stabilizer and ladder mat

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Use of ladders and stairs

Ladders and stairways shall be so positioned that their stability is always assured in use. In any case, the following measures, combined, if necessary, shall be taken for this purpose:

- A. the supports of portable ladders and stairs rest on a stable, solid and immobile surface of sufficient size to ensure that the rungs remain horizontal;
- B. The slipping of the feet of portable ladders and steps during operation shall be prevented by one of the following measures, if necessary combined
 - a. securing the top or bottom of the uprights;
 - b. an adequate anti-slip device;
 - c. another equally effective measure;
- C. Access ladders extend at least 1 metre above the access level, unless other provisions allow a safe handhold;
- D. Mobile ladders and staircases must be secured before being walked on;
- E. When using ladders and stairs, workers shall always have secure support and hold (always 3-point contact). In any case, the following measures, combined, if necessary, shall be taken for this purpose:
 - a. carrying loads by hand on ladders or stairs must be avoided and must not, under any circumstances, impede a safe hold;
 - b. Suspended ladders shall be securely fixed and, except for rope ladders, so that they cannot be displaced and so that swinging is prevented; or
 - c. the various parts of multipart ladders and extension ladders do not move relative to each other during use.

Responsibility of client (RWE)

In the event of the intended use of stairs or ladders, it must be assessed by the employer, in consultation with the contractor, whether the ladder or stairs can be used in the circumstances of the work with the necessary safety guarantees.

Contractor's responsibility

If no other work equipment than a ladder or stairway can be used, the following arrangements must be observed.

Work preparation is an important step in preventing unnecessary use of ladders

- Before starting work, the best equipment to use must be identified.
- If there are no operational constraints, the safest work equipment must be chosen.
- The improvement of occupational safety and health is an objective that cannot be subordinated to purely economic considerations.
- Operational, economic and safety technical aspects should therefore always be considered in conjunction.
- In principle, ladders can only be used to reach a higher level, but not as a workplace.
- The use of ladders or stairs as working places at heights is not permitted unless there are no alternatives, in which case the following conditions must be met.

Additional conditions and measures for working on ladders:

- Carry out a TRA for working at height with a ladder, if the foot/ stand height is > 1.5 metres;
- Keep standing time to a minimum, no more than 1 hour;
- Only use ladders and steps that have been approved. Preference is given to a (mobile) spiral staircase.
- The reach of a ladder should not exceed one arm's length (approx. 75 cm) beyond the ladder uprights.
- The angle of the ladder in relation to the horizontal ground plane shall be between 70° and 75°.

- Never stand on the four highest rungs.
- Always have three points of support (one hand and two feet or two hands and one foot). Always hold on to a sport with at least one hand, even when working;
- Do not place the ladder/staircase in front of a door or in an escape route, otherwise there is a risk of collision or impact;
- No materials may be carried on ladders;
- Working outside on ladders and stairs depends on the weather, wind force (< 6 Bft), rain, hail, thunder and ice must not endanger safety;
- Work equipment and machines that require the safe use of two hands (e.g., grinders, hand-held milling machines and crowbars) are not permitted on ladders;
- Never place ladders near live parts. Consultation on what the safe distance should be. Always disconnect the installation or component from the power supply and remove fuses (even when changing lamps!);
- Carry out a joint LMRA on site before you start!

Working with fall protection

If there is no other way and fall protection must be used, work with approved material according to the standard, see instruction I-103. RWE additionally obliges the use of safety harness relief steps to prevent the risk of so-called hanging trauma.

With fall arrest belts, a fall arrest is also mandatory, unless the line already must be as short as possible. As an automatic fall arrest device will in almost all cases lock automatically in the event of a fall, its use in this situation (when attached at the highest point above the head) ensures the lowest fall clearance (and the shortest fall factor). RWE also requires fall arrestors between the hook and the fall arrestor.

A second person should always be present for supervision and communication, and a prepared and released rescue plan (also in connection with the risk of hanging trauma).

RWE applies the rule: never climb a cage ladder with more than one person at a time. Cage ladders must be included in the RIE in connection with the inspection of the entrance gate.

Working along the waterfront

Working above, on or at the waterfront entails additional hazards and risks that need to be considered during work preparation in order to mitigate them. To control the possible hazards and risks, it may be necessary to draw up a TRA.

Conditions to be considered

- Tides (High and low tide)
- Weather conditions
- Work can or cannot be safely carried out alone, see IO21 (working alone)
- Shipping

Furthermore, the following applies:

- Work less than 4 meters from the water's edge or within the orange lines: hard barriers at the water's edge (railing) or use life jacket.
- Work on the water: wearing a life jacket is compulsory
- Working on an installation on the quay within 4 meters of the water's edge with a risk of falling: wear a fall arrest harness and use a suitable anchor point and positioning line so that the distance to the water cannot be reached

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Areas where the use of a life jacket is compulsory are marked with orange lines and signs requiring the use of a life jacket.

Local (additional) instructions may apply.