



Yara Management System

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Sluiskil

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(HAE-026195) WORKING AT HEIGHT

Note: Note: - Scope clarified, occupational hygiene strategy added, art. 3.16 'Arbowet' added.

1. Purpose

The aim of this procedure is to minimize the risk of working at height incidents and falling objects. Yara Sluiskil and Dutch legislation make it mandatory to protect people in any form of fall hazard and to take measures to prevent this or to limit the effects to a minimum.

2. Scope

Working at height applies when persons:

- Located 2m or more above a surface measured from the lowest part of the body;
- Be within 2m of an opening through which a person could fall or of an unprotected edge with a fall height of 2m or more;
- Perform activities where someone positions themselves above the railing within 2m of a fall height of 2m or more;
- Being on a roof;
- Being on top of transport vehicles;
- Create an opening for someone to fall through.

Working Conditions Act, Article 3.16: prevention of risk of falling.

1. When carrying out work where there is a risk of falling, a safe scaffolding, framework, gantry or working floor must be installed where possible, or the danger must be countered by the installation of effective barriers, rails or similar provisions.
2. There is always a question of risk of falling in the presence of risk-enhancing situations, openings in floors, or if there is a danger of falling 2 metres (from standing height).
3. If it is not possible to conform to point 1 and point 2 is applicable, the use of fall protection is mandatory.
4. If the provisions referred to in point 1 are only present or can be installed in parts or if their installation or removal entails greater dangers, sufficiently strong and sufficiently large safety nets must be installed in appropriate places and manner to prevent the risk of falling. If this is not possible, efficient safety belts with lanyards of sufficient strength must be used or other technical means must be used that provide at least the same degree of protection for the work referred to in point 1. Measures aimed at collective protection take precedence over measures aimed at individual protection.

Carry out work at height according to the (occupational hygiene) sequence:

1. Determine whether there are possibilities to perform the work without working at height;
2. Protection via railing systems;
3. Protection through cover systems;
4. Fall limitation system;
5. Fall arrest system or safety nets.

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3. Justification

Operatives working at heights under conditions as indicated in the definition have a duty to conform to the terms of this procedure and to use the prescribed protective equipment / fall protection. Managers / heads of department must see to it that this procedure is followed by all operatives, that the necessary protective equipment / fall protection is made available, that the protective equipment / fall protection is also actually used in accordance with the rules, and that the operatives are / have been trained in the use of the prescribed equipment.

All fall protection equipment issued by Yara is subject to a regime of inspection and approval, in accordance with the requirements set for all hoisting equipment. Only fall protection equipment for which an approval certificate has been issued, identifiable by an approval number, is to be used. Inspections and approvals are to be followed up by the Facility Services group. The responsible person has a log-in code with the inspection company for Yara, where the certificates can be consulted.

4. Measures to be taken

4.1 Fixed platforms and walkways

Fixed platforms and walkways above the ground floor must be fitted with effective rails. In order to make overhead work (other than on platforms and walkways) as safe as possible, the following resources are available:

- Scaffolding
- Wheeled scaffold towers
- Aerial platforms and scissors lifts
- Suspended platforms for personnel (only allowed under strict conditions, see section 4.5)
- Ladders
- Fall protection equipment

In the case of activities at under 2 metres, performed on the basis of a work permit, the persons in charge of implementation should indicate what protection is to be used. Depending on the circumstances (many people on a small surface, poor accessibility of system elements, uneven underlying floor with increased risk of injury when falling/jumping down), measures similar to those for working at or above 2 metres may be necessary. In more complex situations of this kind a Task Risk Analysis (TRA) should be conducted before issuing a work permit. Activities carried out at a platform height above 1 metre, whereby electrical equipment such as drills and grinding discs is used, are only to be performed from a work platform fitted with a rail.

Weather conditions (rain, snow, ice, wind) may increase the risk of falling. These should be taken into account when issuing permits and carrying out the work.

Fall protection must be used when opening grating and railings.

When working on existing roofs and building new buildings, care should be taken to secure walls and floor surfaces. See Labour Inspectorate information sheets AI-15 'Working safely on roofs' and AI-16 'Securing wall and floor openings'. In such cases, specific fall protection equipment is applicable.

4.2 Scaffolding

Scaffolding should only be erected by accredited practitioners in accordance with the relevant standards and any additional requirements in the scaffolding erection contracts. Only approved scaffolding, identifiable by an approval label, is to be mounted.

Changes to scaffolding are only to be made by scaffolding erectors.

When erecting, dismantling, changing or working on suspended or projecting scaffolding above 2 metres, scaffolding erectors must always use a harness with a standard lifeline consisting of two hooks. The conditions to be met by a scaffolding construction are included in procedure HAE-027419.

4.2.1 Scaffolding in the vicinity of the track

Scaffolding in the vicinity of the track must meet the following conditions:

- The vertical poles or any other point on the scaffolding must be at least 2 metres from the track, measured from the centre of the track.
- Scaffolding extending over the track must be at least 4.5 metres in height.
- Report at all times to the offloading department via the TRA; report eventual positioning to offloading via the 'yellow note'.

4.3 Wheeled scaffold towers

Prefabricated wheeled scaffold towers must satisfy the following requirements:

- The tower is only to be used in the OBL area (outside the blue lines).
- Must be placed on a flat, hardened substrate.
- Is only to be used by the constructor.
- Construction in accordance with the manufacturer's instructions for use, by persons demonstrably trained for the task.
- Maximum floor height 4 metres.
- Maximum floor load is 150 kg/m² (1.5 kN/m²).
- The tower's wheels must be fitted with a blocking system and supports for in the event of wheel failure.
- The tower's wheels must be blocked before entry; this also applies during construction.
- May not be moved when someone is on the tower.
- Do not use when wind speed > 6 Beaufort (13.8 m/s).

Exception in substation:

In substations, aluminium scaffolding is permitted provided that the following requirements are met:

- The substation supervisor is present during the activities.
- No other activities are permitted whereby live panels are opened.
- Scaffolding is double earthed.

4.4 Aerial platform

4.4.1 Qualifications:

Only persons who have been trained in the use of a aerial platform and **who have a valid certificate** are allowed to work with it.

The courses for operating the various types of aerial platform can be found in HAE-028220:

- Category 3A working with a mobile, vertical aerial platform (scissors lift and 1-person vertical lifts).
- Category 3B working with a mobile boom lift and/or articulated boom lift (self-propelled telescopic and articulated telescopic boom lifts).

4.4.2 Agreements regarding working in aerial platforms

1. A harness with lifeline must be used at all times, including when riding on an aerial platform. The lifeline must be of such a length that you can carry out the work but cannot fall out of the aerial platform's cradle. **Only a short line, without a shock absorber, is allowed (the so-called positioning line).**

2. The obligation to hook up the harness is dropped whenever there is a question of working above open water (quayside). In that case, the employees in the work cradle should be equipped with a lifejacket.
3. Exceeding the maximum load of the aerial platform is not permitted.
4. **Leaving the work cradle while it is elevated is not permitted.**
5. Use of an aerial platform is not permitted when wind speed exceeds 6 on the Beaufort scale (12.5 m/s).
6. Before starting to use an aerial platform, it must first be checked in line with the accompanying checklist.
7. Cordon off the platform's working area with red/white tape.
8. An aerial platform is not to be used for hoisting activities.
9. If the aerial platform stands on the carriageway and there is a chance of collision, warning barriers or cones must be placed in front of and behind the aerial platform and the orange warning light must be illuminated.

After the activities have ended (job complete or end of working day), park the aerial platform in a safe place with the platform at the lowest position and the emergency stop activated.

HOOGWERKER CHECKLIST

4.4.2. Rules concerning working alone with aerial platforms:

This is in line with [HAE-028330](#) Agreements regarding working alone in isolated situations.

When working alone with aerial platforms in isolated situations, the following additional risks are possible:

- Getting trapped in installations, when the aerial platform moves.
- If the person should fall from the aerial platform, he can (despite wearing fall protection) get into a dangerous situation (hanging) if no assistance is given.

We have two types of aerial platform at the Yara Sluiskil site.

Type I: self-propelled telescopic and articulated telescopic aerial platforms, which we usually hire; many people in the factory are trained in the use of these. Working alone in isolated situations (i.e. without additional measures) is not permitted. During the preparation of the activities, a risk analysis will have to show whether the risk level is acceptable or whether additional measures are needed (see HAE-028330).



Type II: Type of automated aerial platform that is hired together with driver (operator), and which is deployed for great heights. These aerial platforms call for specialised operation, for which (in principle) none of our own employees on the site are trained. The operator goes up with the others in the cradle; the others in the cradle normally carry out the activities. Working alone with this aerial platform is not permitted. A second driver/operator must always be present for this and within hearing distance and/or field of vision.



4.4.3 Loading and unloading aerial platforms

The loading and unloading of aerial platforms (not electrically driven) is only to be done at the places indicated on the map. The aerial platforms are also to be parked here again after the work ends. If the

activities take longer than a working day, the aerial platforms must still be parked at these designated locations insofar as possible.

Notes:

1. If possible, do not park on through-roads.
2. Park under adequate lighting.
3. Discuss with the department regarding where the aerial platforms can be parked in the plant.
4. Electric aerial platforms can be unloaded at the work site.
5. In consultation with the department, they can be connected to a plug socket.

[LOSPLAATSEN HOOGWERKER](#)

4.5 Personnel hoisting cradle (work cradle)

Article 7.23d of the 'Arbeidsomstandighedenbesluit' has been amended with effect from 1 July 2020. This tightens up the law for the use of personnel carriers hanging in a crane or mounted on a lifting / hoisting device (for example a telehandler or forklift).

The aim of the change is to reduce the incorrect use of work cradles on hoisting equipment that have not been specifically declared suitable for moving people by the manufacturer of the machine. In addition, the legislation is being amended with the aim of limiting the use of special work platforms under strict additional conditions for the safety of employees. During the preparations, the conditions force the employer to carefully consider the need for the use of work cradles and, if such use turns out to be unavoidable, to ensure safe facilities and work performance.

The main points:

- Since 1 July 2020, the use of work cradles and work platforms has only been permitted when work cannot be performed with any other means. Use the flow diagram for this.
- The need to work with a work cradle or work platform must be demonstrated in a written work plan.
- The plan must be assessed and approved by an independent, certified HVK.
- A work platform or platform may only be used when there is virtually no wind (maximum wind speed 7 m/s = 4 bft).
- Providing a plan, obtaining approval and notification of the work is the task of the company, which is responsible for the execution of the work.
- A crane rental company cannot take over the responsibility for the approval.
- An approved plan must be submitted to the 'Nederlandse Arbeidsinspectie' and the HESQ department (Safety section) of Yara Sluiskil no later than 2 days before the work is carried out.
 - ✓ For Yara Sluiskil it is the HESQ department that makes the registration. An approved plan must be sent to the HVK at least 1 week in advance.
- Violation of the rules will result in heavy fines on the crane supplier's client.

Additional guidelines:

A harness with positioning line must be worn when using a work cradle. While hoisting, there must be visual contact and good communication between the crane operator and the people in the cradle (e.g. via radio telephone). Leaving the work cradle while it is elevated is not permitted.

Working alone in isolated conditions in a work cradle is prohibited (see [HAE-028330](#)).

Flow chart for determining whether the use of a hoisting equipment with a (person) work basket or (person) work platform is justified (Labour Inspectorate information: Guide to Working with a work cradle or work platform, June 2020):



4.6 Ladders

Only ladders must be used which:

- Are in good condition.
- Stand on firm ground and are fitted with anti-slip feet.

Furthermore, the following conditions must be met:

- Ladders must be set up at an angle of 70-75 degrees.
- The maximum gap to be bridged using a ladder is 6 metres.
- A ladder must project by at least 1 metre above the place to which it gives access.
- Where it is not possible to fix ladders in place, they must be secured against slippage.
- Metal ladders are prohibited for work in open electrical systems.
- Do not use aluminium ladders in a corrosive environment.
- Wooden ladders may be painted without full coverage.
- Both hands must be used when climbing ladders. Tools and equipment must be taken aloft using a belt, rucksack or similar, or winched up separately.
- When working from a ladder, at least one hand must hold the ladder and both feet must be on the rungs ('3 points of contact' principle). If this is not possible, fall protection equipment must be used.

4.7 Roof work:

When working on flat roofs, the following requirements should be taken into account:

Green (distance between workplace and edge > 4 metres)	No personal measures necessary. Visual markings / cordon at 4 metres. E.g. signing (red/white chain) or positioning lines
Orange (distance between workplace and edge < 4 metres and > 2 metres)	Physical marking / cordon at 2 metres. (1 metre high)
Red (distance between workplace and edge < 2 metres)	Measures required to protect against falling. E.g. edge security (barrier) or individual with harness + line with shock absorber or fall arrest block at anchor point.



Moving onto weak roofs (roofs consisting of weak covering) without any protection is not permitted.

4.7.1 Overview of weak roofs:

The table below lists the roofs which are known to be weak.

Building	Notes	Notes
	1	2
Roof of fire brigade garage	Roof clad with corrugated sheeting set in mortar.	
Roof Sipp	Roof clad in translucent, profiled sheeting.	
Roof nitrate warehouse 1	Roof clad with corrugated sheeting set in mortar.	Corrugated sheeting is overlaid with profiled aluminium sheeting.
Roof nitrate warehouse 2	Roof clad with corrugated sheeting set in mortar.	
Roof boiler 7	Concrete roof.	Part of concrete is damaged at access point to roof from the lift well/staircase.
Overhead cover of track near loading building 2	Roof clad in translucent, profiled sheeting.	
All roof slopes with an incline of more than 15 degrees (e.g. all warehouses)	Danger of falling due to steep slope.	Usually no protection in place at roof edges.
Roof compressor building 6	Roof clad in translucent, profiled sheeting. (concrete roof)	
Various conveyor galleries	Roof clad in translucent, profiled sheeting.	Roof clad with corrugated sheeting set in mortar.
Roof around loading building 2	Roofs clad with profiled sheeting with coating on underside, with result that roofs rust away without this being visible.	Example is low roof section in front of 'warehouse 3' and overhead cover in front of entrance to loading building 2, and at overhead cover of platform.

Section of roof central workshop	Roof clad in translucent, profiled sheeting.	
Section of roof Central Warehouse	Roof clad in translucent, profiled sheeting.	
Marley cooling tower	'roof' consists of wooden sheeting. Must not be trodden on outside of marked walking route.	A strengthened and marked walking route has been laid on the roof of the Marley. (15-02-2013) This allows Operations to carry out their tour of inspection.

4.7.2 TRA mandatory.

Before accessing the weak roofs mentioned in the table, and working on them, it is mandatory to make a TRA.

When making the TRA, the following comments and the sequence of work planning must be considered.

1. Firstly, one must attempt to carry out the work without going onto the roof. For example, by carrying out the work using scaffolding or an aerial platform.
2. If the conditions under point 1 cannot be met, and the roof must be accessed, then extra safety features must be installed in addition to a harness and line. For example, a safety net or its equivalent.
3. Walking directly on weak roofs without the use of special provisions for walking is strictly prohibited. In addition, the wearing of an anti-fall harness and line in combination with the provision for walking is always mandatory. See Golden Rule 'Working at height'. See point 2. The special provision for walking could, for example, be a 'cat ladder'.

In the case of these activities with an anti-fall harness, working alone in isolated situations is prohibited unless it can be shown from the TRA that appropriate measures have been taken (see [HAE-028330](#)).

4.7.3 Prohibition on accessing roofs due to environmental factors.

In connection with weather conditions, it is prohibited to access the roofs in some cases for safety reasons.

1. Wind force 6 or higher;
2. Thunderstorms;
3. Snow;
4. Ice/sleet;
5. Dark, unlit situations.

4.8 Rope Access

Sometimes it may be necessary to carry out activities with a Rope Access team. This must be determined by the client.

- The team must be trained in accordance with the Irata system.
- If the team has not been trained in accordance with the Irata system, the training requirements and certificates must be presented to Yara for evaluation.
- Yara will decide whether the training can be considered equivalent to the Irata system.
- A practical demonstration of competency may form part of the evaluation.

For such activities, working alone in isolated situations is prohibited (see [HAE-028330](#)).

4.9 Fall protection equipment

The following fall protection equipment is provided:

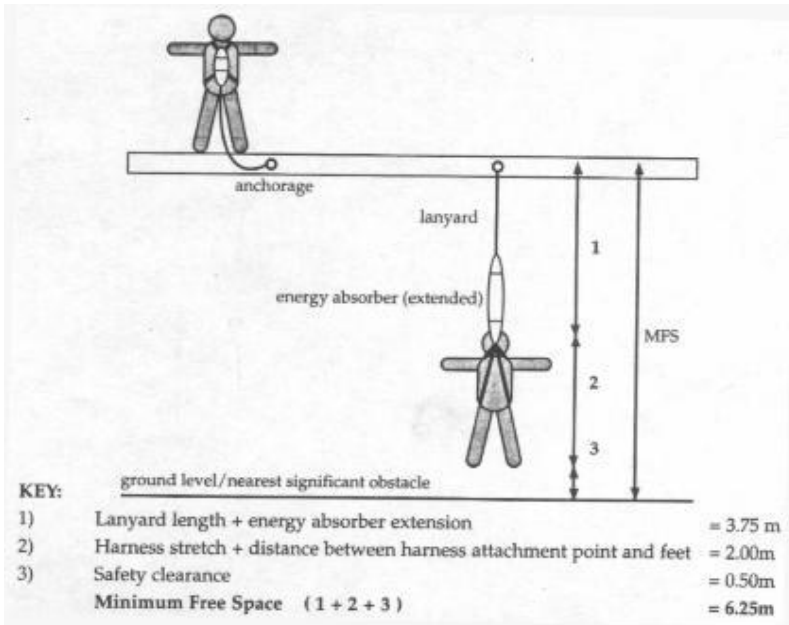
- Harness with lifeline

- Fall protection line or chute
- Tank rescue belt

In the case of these activities with an anti-fall harness, working alone in isolated situations is prohibited unless it can be shown from the risk analysis that appropriate measures have been taken (see HAE-028330).

4.10 Harnesses, fall arresters, tank rescue belts

The fall protection must be anchored at such a height, or the fall protection line length must be adjusted in such a way when working at heights as to prevent a person making contact with the ground as he falls. An example is given below of the drop height when the fall protection is anchored at standing height.



Before use, harnesses, fall arresters and tank rescue belts must be visually inspected by the user, and inspected annually by an independent institute. A record must be kept of this. They must be replaced immediately once they have withstood a strain.

Only approved fall protection equipment is to be used at Yara.
 The use of tank rescue belts is linked to the safe work permit-HAE-026168.

4.11 Lifejacket

When working at the quayside and (among other things) on ships, Yara employees must wear an approved lifejacket at all times. Lifejackets must be checked annually; on these occasions, replacement of the carbon dioxide cartridge is also essential.

4.12 References

- AI-15 'Working safely on roofs'
- AI-16 'Making safe openings in walls and floors'
- AI-17 'Hoisting and lifting equipment and safe hoisting'
- AI-21 'Wheeled scaffold towers'