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İşin Adı
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İnşaatı ile Elektromekanik Sistemlerinin Temini
Construction of Mersin-Adana-Osmaniye-Gaziantep High Standard Railway Line
With Supply Of Electromechanical Systems

Rapor Adı
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TABLE OF CONTENTS

1. PURPOSE	4
2. SCOPE	4
3. IMPROVEMENT	4
4. REFERENCES	4
5. RESPONSIBILITY	4
5.1. Project Management.....	4
5.2. Department / Department Managers / Chiefs / Managers.....	5
5.3. Project HSE Manager / Chief.....	5
5.4. Headquarter E&S Manager:.....	5
5.5. PIU (Project Implementation Unit)	5
5.6. Executive Environmental and Social Management Committee	5
6. DEFINITIONS AND ABBREVIATIONS	6
7. IMPLEMENTATION.....	7
7.1. Main Rules.....	7
7.2. Protection Methods	7
7.2.1. Personal Fall Protection Equipment / Equipment.....	9
7.2.2. Fall Arrest Equipment.....	10
7.2.3. Space Restriction Systems	14
7.2.3.1. Anchor Points.....	14
7.2.3.2. Safety Belts.....	14
7.2.3.3. Life Lines	15
7.2.4. Working with positioning systems	16
7.2.5. Safety Nets	16
7.3. Temporary Edge Protection Systems.....	17
7.3.1. Basic Requirements	17
7.3.2. Classification of Temporary Edge Protection Systems	18
7.3.3. Strength Requirements	19
7.3.4. Component and Gap Dimensions of Temporary Edge Protection Systems.....	20
7.3.5. Edge Protection Applications	21
7.3.5.1. Wire Mesh Protectors	21
7.3.5.2. Pipe Clamp Edge Protectors	23
7.3.5.3. Stair Edge Protectors.....	24
7.3.5.4. Excavation Edge Protectors.....	24
7.3.5.5. Free Temporary Edge Protection Systems.....	25



7.3.5.6. Wind Panels.....	26
7.3.5.7. Floor Gap Closures	27
7.3.6. Installation, Dismantling and Controls.....	28
7.4. Ladders.....	30
7.5. Mobile Elevated Work Platform.....	31
7.6. Working Near the Excavation	32
7.7. Material Falling.....	32
7.8. Roofing and Fragile Surfaces	32
7.9. Rescue Plan	33
7.10. Storage of Fall Protection and Prevention Equipment.....	34
7.11. Difficult Access Areas – Rope Access Requirements	34
7.12. Work Environment.....	34
7.12.1. Lighting.....	34
7.12.2. Wind	34
7.13. Control.....	34
8. MONITORING, ASSURANCE AND VERIFICATION.....	35
9. RELATED FORMS	Hata! Yer işareti tanımlanmamış.
APPENDIX -1 Feedback Form.....	Hata! Yer işareti tanımlanmamış.

İŞ SAĞLIĞI GÜVENLİĞİ & ÇEVRE



1. PURPOSE

The Mersin-Adana-Osmaniye-Gaziantep High Standard Railway Project provides the determination of the methods and principles in the work done at height.

2. SCOPE

It includes all persons (employees, interns, etc.) operating in the MAOG Project, all consultants, consultants, intermediary persons and companies operating in the MAOG Project, and subcontractor employees.

3. IMPROVEMENT

Persons who detect ambiguity and inconsistency in this document can report their requests and suggestions using the "Feedback Form" in APPENDIX 1.

This document contains minimum requirements and can be developed according to the legal regulations of the working region, employer expectations and international standards.

4. REFERENCES

Occupational Health and Safety Regulation in Construction Works (Date / Number: 05.10.2013 / 28786)

BS 8437:2005 Code of practice for selection, use and maintenance of personal fall protection systems and equipment for use in the workplace

TS EN 795:2012 Personal protective equipment against falling - Anchor devices

CEN / TS 16415:2013 Personal protective equipment against falling - Anchor devices - Recommendations for anchor devices intended for simultaneous use by more than one person

EN 361:1992 Personal protective equipment against falls from height - Full body girdle

TS EN 1263 – 1: Safety Nets System

EN 353 – 1: 2002 Personal Fall Protection Equipment

ANSI Z359.0-.4 2007: Set of Standards for Fall Management

OHSAS 18001: 2007 Work Safety and Health Management System

MAOG-RECU-GN-GNL-IS-GNL-PRG-0002-0 Hazard and Risk Management Procedure

MAOG-RECU-GN-GNL-IS-GNL-PRG-0003-0 HSE Training Procedure

EN 360 Retractable Fall Arrest Equipment Standard

A Guide to Selection and Use of Temporary Edge Protection Systems – Edge Protection Federation Code of Practice 2014

TS EN 13374:2013 Temporary Edge Protection Systems – Product properties, test methods.

5. RESPONSIBILITY

5.1. Project Management

MAOG Project Management is responsible for the implementation of this document in all its worksite / activities and ensuring that the subcontractors it works with work in accordance with this document. MAOG Project Management is also responsible for;

- Safe execution of work at height activities,
- To implement the work at height permit procedure (İİS, İTA, TRIC etc.) and training plan,



- Initiating corrective/preventive action for the identified nonconformities, controlling the actions and the process within the specified periods,
- Following the actions, closing them on time and establishing coordination with the Group Company Management and Group Company HSE Coordinator / Manager / Manager,
- To supply appropriate personal protective equipment,
- Responsible for including subcontractor practices and teams in this document.

5.2. Department / Department Managers / Chiefs / Managers

Department / Department Managers / Chiefs / Managers are responsible for implementing this document in their work area / activities and ensuring that the subcontractors they work with work in accordance with this document.

5.3. Project HSE Manager / Chief

Project HSE Manager / Chief is responsible for the coordination and monitoring of this document for its implementation in all sites and activities. Project HSE Manager/Supervisor is also responsible for the following:

- Based on this document in the creation of the relevant project procedures,
- Providing training to employees and subcontractors within the scope of this document,
- For the implementation of this document, ensuring coordination with the managers / supervisors responsible for the activities in the field / enterprises,
- It is responsible for monitoring the effectiveness of this document and its implementation in accordance with its content, and for contacting the Group Company Coordinator / Manager / Manager and / or the Corporate HSE Management Department in case of revision needs.

5.4. Headquarter E&S Manager:

Responsible for managing infrastructure and superstructure projects regarding environmental and social governance issues and member of the Executive E&S Committee on behalf of the REC.

5.5. PIU (Project Implementation Unit)

- **PIU Department Manager (Superstructure / Civil Engineer)** will be responsible for overseeing the implementation of all health, safety and social measures, as specified within the disclosure package of the Project, and regular reporting to AYGM PIU.
- **PIU Physics Engineer** who is responsible for supervising health and safety for the Project.

5.6. Executive Environmental and Social Management Committee

- **Executive E&S Committee Project Manager (Department Head / Branch Manager /Head of Department)** will be ultimately responsible for overseeing the activities undertaken by the AYGM/TCDD specialists (listed below), overseeing the implementation of mitigation measures and management procedures specified within the disclosure package of the Project, and overseeing the preparation and implementation of a CESMP, which will be based on this ESMP.
- **Executive E&S Committee Environmental, Health and Safety, and Social (EHSS) Manager (Specialist / Engineer)** will be responsible for overseeing all matters that relate to environment, health, safety and social aspects of the Project. Also, s/he will be appointed to be responsible for supporting the implementation of the SEP, by conducting regular consultation with affected communities on any concern regarding the Project. CLOs will also have responsibility for



disseminating the Project disclosure package as described in the SEP. They will also conduct regular inspections of records relating to grievances received and their resolution. S/He will report regularly to AYGM PIU.

Further technical staff may be required during the course of the Project, who will be assigned internally by the AYGM, either by means of permanent or temporary basis until the completion of relevant tasks under the Project whilst they undertake their current responsibilities

6. DEFINITIONS AND ABBREVIATIONS

Ronesans: Ronesans Holding A.Ş. is a group of companies in Turkey and abroad in which Ronesans Holding A.Ş.'s affiliates, subsidiaries and shareholders of Ronesans Holding A.Ş.

Project: Mersin-Adana-Osmaniye-Gaziantep (MAOG) High Standard Railway Project

Project Management: Depending on the established organizational structure of the project, it represents the manager responsible for the entire project and/or its subordinates. (In Projects and Enterprises; the most organizationally authorized person or his/her representative)

HSE: Occupational Health and Safety and Environment

WPS: Work Permit System

WHA: Work Hazard Analysis:

TRIC (Task Risk Identification Card) Task Risk Identification Card

PPE: Personal Protective Equipment

EN: European Norm

CE: Conformity to Europe (Confirmed Europe) indicates the conformity of the product with European product regulations.

OSHA: It is a standard created for Occupational Health and Safety in United States laws and regulations.

Working at Height: Work done in any area where there is a difference in level and where the possibility of injury from a fall may occur is considered work at height (work anywhere, including at or below ground level). Access to or exit from a place during work, excluding a ladder at a permanent place of work, from which a person could fall from a distance likely to result in personal injury if the precautions required by those regulations are not taken.

Fall distance: It is the minimum height required to avoid hitting a ground after a fall against the risk of a fall.

Primary Fall Prevention: The safety of workers in workplaces is primarily the collective protection measures such as safe guardrails, fall arrest platforms, barriers, covers, work scaffolds, or working methods such as the option of mounting at ground level.

Secondary Fall Protection: It is the use of fall arrest systems in cases where primary fall precautions (collective protection measures) cannot completely eliminate the risk of falling, cannot be applied, may cause greater danger, need to be temporarily removed, or as a supplement to primary fall prevention systems.

Personal Fall Arrest Systems (Fall Arrest Systems): They are the systems used to stop the employee from falling from the work level. Attachments, connectors, parachute harness, shock absorbers or damping equipment, lifelines, or a combination thereof.



Anchorage: It is the process of fixing an element or equipment by inserting it into another material, environment or element. It is an element to which personal protective equipment can be attached after the assembly of the anchor elements.

Lanyard: It is a specially designed rope, strap or thick woven strip, usually with fasteners at both ends, that attaches it to a safety belt, anchor or lifeline.

MEWP (Mobile Elevating Work Platform): Mobile work platforms that can be upgraded.

Lanyard: Connecting rope.

7. IMPLEMENTATION

7.1. Main Rules

- In the planning of working at height, it is planned to carry out the work to be done at height in lower places as much as possible. In planning, risk control hierarchy approach is followed in which collective protection measures instead of personal protective measures, and measures to prevent falls instead of measures that minimize the consequences of falling from height are taken into account.
- Before starting work activities, primary fall protection systems (railings, etc.) are installed. The main way to achieve safe working conditions when working at height is to provide adequate access, entry-exit arrangements and suitable work platforms at the workplace.
- Risk analysis is carried out for working at height (including roofs). Following the assessment of the risks, the methods and precautions to be followed while working at height are transferred to the personnel. For all work at height, weather conditions that may endanger safety are also considered.
- A rescue plan is prepared for work at height. Emergency plans also need to include a fall rescue plan.
- Work done in any area where there is a difference in level and where the possibility of injury from a fall may occur is considered work at height (work anywhere, including at or below ground level).
- For all work at heights, a job- and site-specific risk assessment is made first, and a fall protection and fall protection system is used. In principle, if there is a risk of falling, fall protection equipment is used.
- Personal fall arrest equipment is used for all work at height.
- When working at height, it is permanently attached to the anchor point (100% connected).
- Only persons who have been trained and authorized to operate by competent persons are permitted to use fall arrest systems.
- Personal fall arrest systems are determined only by competent persons.
- Competent person(s) designs, selects, installs and checks the horizontal lifelines and connection points at regular intervals.
- Personal fall arrest systems are checked before each use. Damaged equipment and hardware are not used.
- Fall protection equipment and systems are not used for any other purpose.
- The suitability of the personnel who will work at height is approved by the workplace doctor.
- When working at height, it is mandatory to use the necessary PPE according to the PPE matrix determined by the MAOG Project Management.

7.2. Protection Methods

The risk of falling is eliminated or reduced by using the Control Steps, following the preference and order of activities below.



- Elimination Eliminating the necessity of working at height (For example, doing the work at ground level)
- Isolation Using physical barriers to close the area (e.g. fixed platform and guardrails)
- Engineering Using temporary platforms to access the work area (e.g. mobile elevated work platform, scaffolding, etc.)
- Work Permits and PPE: Risk assessments, safe work practices, work permits, training and personal fall containment and protection systems.

Collective protection methods are applied with priority over personal protection methods. A risk assessment is made considering the installation, use, dismantling and rescue operation associated with the equipment, and accordingly, the protection systems suitable for the job are determined by considering the risk control hierarchy defined above. It uses one or more of the following fall protection systems, depending on the work area and the nature of the work:

- I. Personal Fall Protection Systems
- II. Railing
- III. Safety net
- IV. Space restriction systems
- V. Working with positioning systems



İŞ SAĞLIĞI GÜVENLİĞİ & ÇEVRE

Table1 Examples of protective measures by work category

Priority	From High to Low		
	Work Equipment Category	Collective Protection	Individual Protection
		Examples of Protective Measures	
High	Fall prevention equipment	Working on barrier platforms, Advanced guardrail systems, Barriers Multiple mobile elevated work platform (MEWP)	Personal fall arrest systems (working in a cage, etc.), Personal fall protection systems (space restraint systems, etc.), One-man mobile elevating work platform (MEWP)
	Work equipment that minimizes height and the result of falling	High level of safety nets (equipped close to the work area), Soft landing systems close to the work area	Other personal protective equipment (rope access, fixed point work systems and fall arrest systems – in this system the fall factor is kept as low as possible with systems where the fall factor is zero in order of importance.)
	Work equipment that minimizes/reduces the result of a fall, possible impact	Soft landing systems, Low-equipped safety nets	Other personal protective equipment not related to fall protection (e.g. life jackets for working on water, etc.)
	Fall-related work equipment (ladder, ladder, step, warning strip, etc.)	Minimizing the risk of falls with instructions, management and user training	
Low			

7.2.1. Personal Fall Protection Equipment / Equipment

Appropriate fall protection equipment and PPE are provided to all personnel working above / below ground level and who are in danger of falling, and it is ensured that they are used by authorized personnel. Fall arresters and fall arresters comply with relevant standards (CE marked and EN certified). Fall arrest equipment is used whenever falls may result in injury (including work on chemical tanks or operating machinery, etc.).

In cases where collective protection measures cannot completely eliminate the risk of falling, cannot be possibly implemented, may pose greater danger, and need to be temporarily removed, connection points or lifelines suitable for the nature of the work will be established and full body belt systems or similar security systems will be used.

Fall protection equipment / equipment is visually inspected by the user before each use. In addition to these controls, it is checked by competent / expert people (at least once a month) and control records are kept. These checks made by competent / expert persons are marked on the relevant hardware / equipment (color code, label system, etc.).

Fall arresters from different manufacturers and the relevant standards specified in this document are controlled by the project HSE unit.



Fall protection systems are protected against:

- Corrosive substances or substances that could potentially damage the system,
- Sharp corners or rough surfaces against cutting,
- crushing with heavy material,
- Direct contact with heat or temperature above 60 °C,
- Burning or wear when working near hot work.

7.2.2. Fall Arrest Equipment

Fall arrest systems, fixtures, equipment, components and elements meet the following requirements and specifications:

- Personal fall arrest systems, when used in conjunction with a safety belt, limit the stopping force on the worker to a maximum of 815 kg (1800 lbs - 8 kN). The system is designed to allow the worker to neither free fall more than 1.8 m (6 ft) nor come into contact with a lower level, drag another person to a stop, have a maximum fall arrest distance of 1.07 m (3.5 ft), and a maximum It is designed with sufficient force to be 2 times the impact force of an employee in freefall at a distance of 1.8 m (6 ft), or even less free fall distance is allowed. The safe clearance distance for falls is at least 1 m.
- The allowable free fall distance is 2 m or less.
- The entire system is designed to withstand a load of at least 815 kg (1800 lbs). The minimum amount of load that each element must withstand is specified in the relevant standards.
- Fall arrest systems are often used in conjunction with a shock absorber. The shock absorber absorbs the energy that will occur with the first impact force on the employee who falls during the work at height, gradually tearing it off and minimizing the damage to the user's body.
- Since a lanyard used without a shock absorber cannot absorb the generated energy, the resulting energy may damage the worker's/user's body and even cause death.

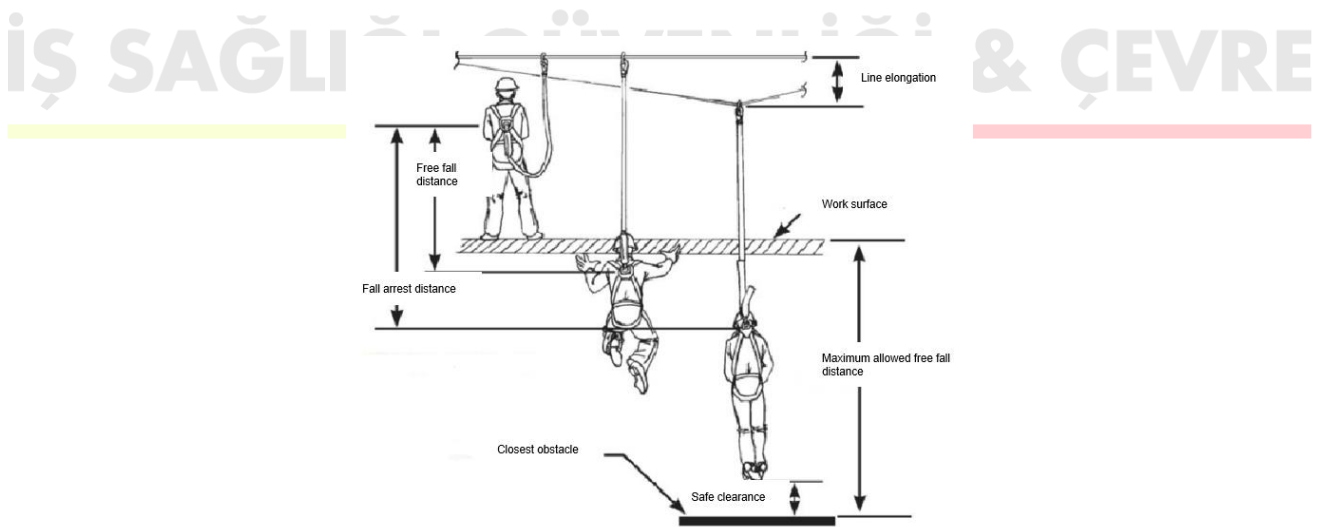


Figure1:Total Fall Distance / Total Clearance

(The visual used is for example purposes, the lanyards to be used in projects / businesses will be double-armed.)

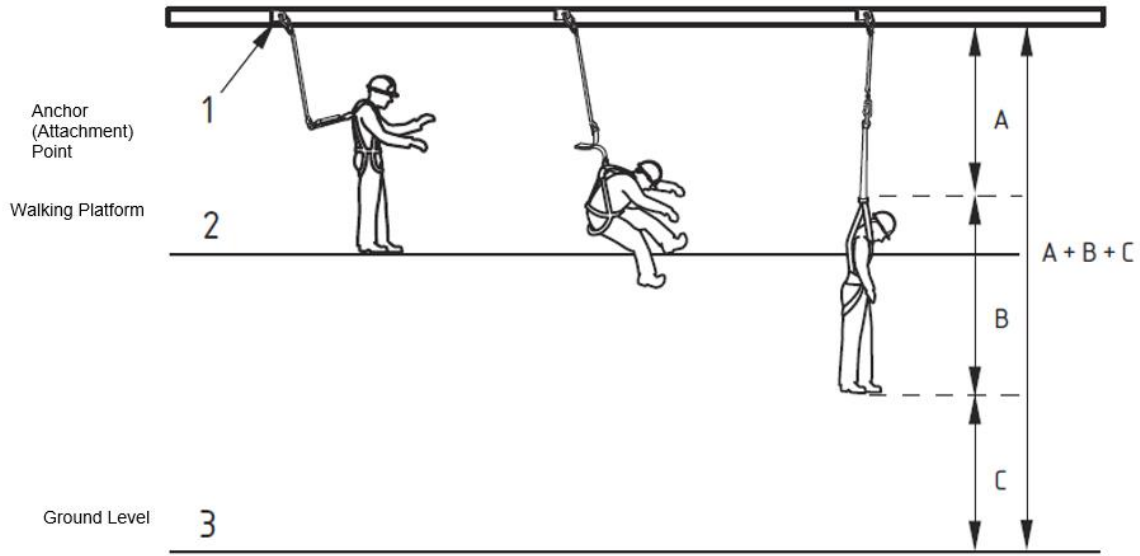


Figure2: Falling distance when the anchor connection point is above the employee's head

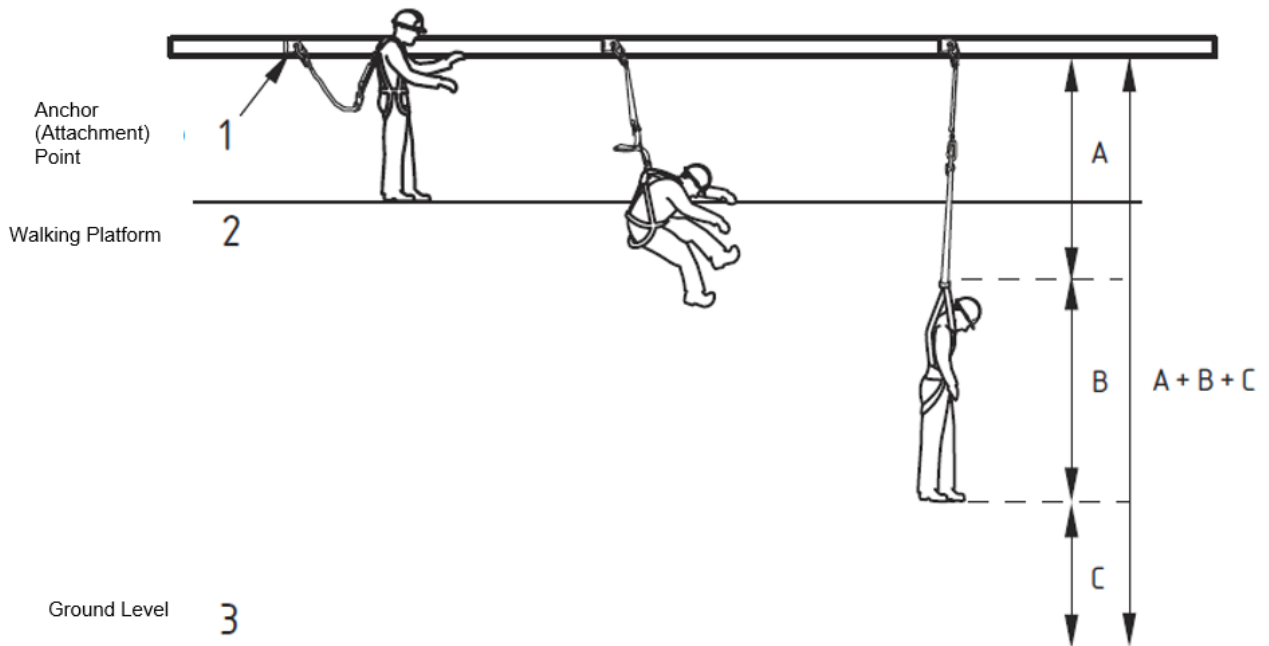


Figure3: Falling distance when the anchor point is at the employee's shoulder level

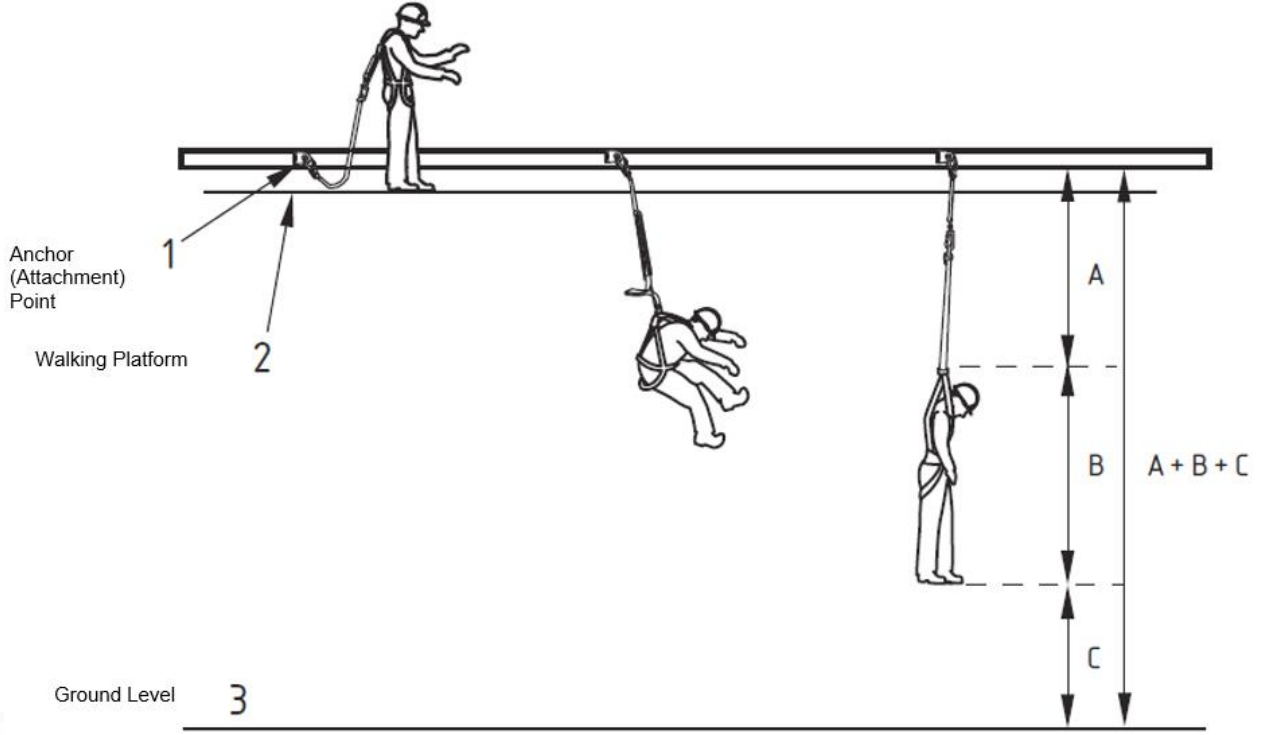


Figure4: Falling distance when the anchor point is at the foot of the worker

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Table2 Calculation example of minimum clearance distance for shock absorbing lanyard based fall arrest system

Distance	Definition	Measurement					
		Connection point above the employee *		Connection point is at the employee's shoulder level		Connection point is at the employee's foot level	
		2m lanyard	1.5m lanyard	2m lanyard	1.5m lanyard	2m lanyard	1.5m lanyard
A	Length of lanyard + length of extended shock absorber	2.0 + 0.25	1.5 + 0.2	2.0 + 0.75	1.5 + 0.5	2.0 + 1.75	1.5 + 1.25
B	Safety belt stretch distance + distance between the attachment point of the lanyard on the safety belt and the worker's foot	2.0	2.0	2.0	2.0	2.0	2.0
C	Safe clearance	1.0	1.0	1.0	1.0	1.0	1.0
A+B+C	Minimum (min.) clearance distance requirement	5.25	4.7	5.75	5.0	6.75	5.75
*The connection point is up, but there is still enough slack in the lanyard to allow the worker to bend over to reach the work area at walking level.							

Example clearance calculation logic for various fall arrest systems is provided below (numbers provided are examples only). It depends on the weight, height, dimensions of the devices used, etc. of the person using the fall arrest system. The numbers of distances and lengths vary according to the variables.

Fall length (Fall height)

The fall distance varies according to many equipment used and the location of the anchorage point secured. The fall distance is the minimum height that must be found in order not to hit the ground after a fall, against the risk of a fall.

Example;

A worker who is 1.8 m (6 ft) tall uses a 1.8 m (6 ft) long lanyard. This person's average weight is 100 kg (200 lb) incl. clothing, tool bag, etc.

The following heights are taken into account to calculate the fall distance.

A : Lanyard length

B: 1.1 m (3.5 ft) fall arrest (length of shock absorber after tear)

C: Safety belt flex + D-ring shift (0.45 m - 1.5 ft)

D: Height of employee / user (1.8 m)

E: Safety factor clearance after foot – 1 m (2-3 ft)

$$F = A+B+C+D+E, \text{ Minimum overall clearance } 6.0\text{m (20ft)}$$

7.2.3.Space Restriction Systems

Space restriction systems consist of the following equipment:

- Anchor point
- Full body harness (parachute type)
- Life line
- Attachments (to lanyard and safety belt)

These equipment meet the above-mentioned fall arrest system specifications. Space restriction systems are positioned horizontally to protect the worker from falling and are used by calculating fall distances and rope lengths.

7.2.3.1. Anchor Points

Anchor points meet the following requirements and specifications:

- Anchors and anchor points have sufficient strength.
- The effectiveness and strength of the fall arrest system depends on the anchor system, and the anchor system does not reduce the strength of the entire fall arrest system.
- Anchor, anchor point and movable anchor point are designed in such a way that personal protective equipment is attached. If the anchor's weight is unknown, the fall arrest system should be designed and installed by a qualified person(s).
- Each anchor to which the fall arrest equipment is attached is designed and implemented as part of a complete fall arrest system that supports at least 2268 kg (5000 lbs - 22.2 kN) per worker and provides at least two (2) safety factors under the supervision of a competent person. and use.
- Anchors to which personal fall arrest equipment is attached are independent of platforms. Anchor elements (eye bolt, anchor ear, etc.) must be manufactured in accordance with EN 795.
- Considering the fall distance, the anchor point is kept at a point above the body center of gravity when tethering to the lifeline or other anchor point. Positioning the anchor point as small an angle as possible to minimize oscillations in the event of a fall.
- Personal fall protection systems are not attached to open-ended beams or consoles. No connections to water pipes, electrical wires, guardrails, or any point that cannot carry the load.

7.2.3.2. Safety Belts

Safety belts meet the following requirements and specifications:

- Full body (parachute) type safety belts are always used with the fall protection system.
- The full body (parachute) type safety belt used in fall arrest is arranged as at least 5 points and meets the relevant EN standards. The use of waist belts is prohibited. The safety belt webbing is woven from synthetic fiber and has the capacity to distribute a load of 875 kg (1,800 lbs – 8 kN) over the worker's body. Safety belts are checked for wear, abrasion and cuts at least monthly, and the controls are recorded together with their serial numbers. It must be visually checked by the user before each use.
- Front D-rings are used for positioning only. D-rings and carabiners have a minimum tensile strength of 2268 kg (5000 lb - 22.2 kN). D-rings and carabiners are tested against a minimum tensile load of 1633 kg (3600 lbs-16 kN) without cracking, breaking or permanent deformation.
- The fall protection ropes (lanyards) are attached to the D-ring located in the back center of the safety belt. In order to reduce the shock load in the event of a fall, the safety belt and safety rope are used together with the shock absorbers. Shock absorbers are taken into account in the fall clearance calculation. Fall protection ropes (lanyards) are used in pairs.



- All fasteners are hot forged, pressed and made of stainless steel or a substitute material, with smooth surfaces and edges. Connection apparatus can be locked or used in a way that cannot be opened by itself. The hook carabiners are in appropriate sizes against undesired stripping and only double safety carabiners are used. The use of simple spring carabiners is prohibited.

7.2.3.3. Life Lines

Lifelines meet the following requirements and specifications:

- Lifelines are installed vertically or horizontally and are generally intended to provide mobility for personnel in elevated areas. Lifeline systems are designed to carry loads. These lines are;
 - is attached to sufficiently durable anchors,
 - securely attached to these anchors,
 - It has sufficient size and strength to carry the falling person or persons.
- Horizontal lifelines are designed, installed and checked according to a minimum fall factor of two (2) as part of the entire fall protection system under the supervision of competent personnel. According to the EN 795 standard, the static load must be at least 12 kN. As a result of the dynamic tests, 2 times the load on the main anchor points does not exceed the breaking load of the steel rope. For example, if the load on the main anchor point is 14 kN when a 100 kg fall is experienced, the minimum breaking load of the steel rope should be 28 kN.
- While lifelines are certified, their design and tests are carried out according to the CEN / TS 16415 Anchors standard, which is prepared for the use of more than one person. The number of people to be given by the manufacturer together with the tests carried out is valid for each interval.
- Lifelines are established in accordance with the required static calculations and design criteria according to the region to be worked and the need. The number of employees in the horizontal lifeline in the general working areas is planned to be maximum two people. If the horizontal lifeline is designed for 2 people, it is designed for 1 person to work every 5 m. Ropes of suitable diameters and strength are used by taking into account the working area of each employee, the distances of falling and the loads that occur at the time of falling. Manufacturer's instructions are followed. The flexible lifeline becomes a synthetic fiber rope or wire rope. The lifeline becomes one piece, without any joints. It is made of material that is protected against cuts and abrasions.
- The lifeline can neither be too tight nor too loose. The horizontal lifeline must be protected against sharp edges (backing with softener material, etc.). Diameter of horizontal lifelines shall be minimum 10 mm for steel rope lifelines and minimum 13 mm for synthetic fiber ropes and steel ropes shall be fixed with at least 3 wire rope clamps. Lifelines are tested before use. Lifelines may not be used for any purpose other than fall protection. Since synthetic fiber ropes wear out quickly, it is not recommended to use them horizontally.
- Vertical lifelines are provided as much as the number of employees. Only 1 person is connected to the vertical lifeline. Vertical lifelines are resistant to breaking strength of at least 2268 kg (5000 lbs – 22 kN). Vertical lifelines are resistant to cuts and abrasions.
- The lifelines being used are checked by the experts who installed the lifelines before starting work.
- On the lifeline; There is a label / sign with the number, installer, capacity, installation and last control date information, and the records related to the controls of the lifeline are followed in a record tracking system. Control periods are determined by the project HSE Unit by considering working conditions and work planning.

Retractable lifelines and safety ropes that do not limit the free fall distance to 0.60 m (2 ft) or less, rib-stitched ropes, torn and deformed ropes, a minimum of 2268 kg (5000 lbs- 22.2 kN) tensile load. According to EN 360 Retractable Fall Arrest Equipment Standard, the static strength of the products is minimum 15 kN if fiber rope or braid, and minimum 12 kN if steel rope. The equipment in question is anchored using eyebolts or carabiners attached to wire rope slings or cloth slings.



7.2.4. Working with positioning systems

The following requirements are met for this method, which can be used to climb towers or poles:

- The 2 D-rings in the front are located at waist level and on both hips of the employee. The D-ring on the back is located at the employee's shoulder level.
- Positioning equipment shall be such that no more than 0.9 m (2 ft) of free fall is possible.
- Positioning equipment is secured to support at least 2 times the potential load impact of the worker or 1360 kg (3000 lbs) or more.
- Employees are 100% protected from falling and connected while climbing, passing from place to place, passing an obstacle.
- Before exiting the building, it is examined whether the structure has sufficient bearing and anchorage capacity.
- The use of waist belts is prohibited.
- All equipment will have the capacity to carry the employee.
- Shock absorbing and double-armed lanyards are used for climbing. The lanyard connection is always at the points above the head.

Positioning working systems consist of the following equipment:

- Full body harness (parachute type)
- Attachments (positioning belt, lanyard)
- An independent secondary fall arrest system (e.g. a fall arrest system based on a slip hazard shock absorber)

7.2.5. Safety Nets

In the works where large and high buildings, roofs, bridges, moving scaffoldings, open constructions are made, in case of a fall, it acts as an important protection task such as preventing falls and catching those who fall. According to the area where it will be installed, it is installed horizontally, vertically and angled. The personnel who will make the installation must have technical knowledge and competence about the angular values, the selection of the anchor point and the placement of the net. Safety nets are considered a secondary measure. Relevant standards of safety nets are met.

According to OSHA Standards:

- The smallest mesh area will be 35 square meters, the shortest side length will be at least 5 meters long,
- The eye size shall be 100 x 100 mm,
- The net rope diameter is 6 mm. It is made of Polyamide 6.6 material,
- The yarn has high UV and friction resistance and consists of high-strength synthetic fibers,
- The mesh eyes become square,
- Safety nets are hung with rope, hooks, straps or clips,
- If a single arm sling is used, the breaking strength of the sling rope will be at least 30 kN,
- If a double arm sling is used, the breaking strength of the sling rope will be at least 15 kN,
- When hanging the net, the distance between each hanger is maximum 2.5 meters.

According to TS EN 1263-1:

- The mesh width does not exceed the value specified in the mesh type (60 mm or 100 mm),
- The edge type does not pass through each mesh on the edge,
- The ends of all ropes used in safety nets are protected against unraveling,



- The strength and energy absorption capacities of edge thread, binding thread and binding threads shall not be below the values specified in the standard,
- The static and dynamic strength tests of the nets (as well as the strength tests as a result of natural and artificial aging) are carried out in the ways specified in the standard (Strength tests for T-type and S-type nets, which are frequently used in constructions, are performed with test masses of 100 kg steel spheres dropped on the net from 7 meters high. is done),
- In T-type nets, the maximum distance between support stands is 5 meters,
- In S type nets, the shortest length of the net is 5 meters and the smallest dimension is 35 square meters,
- If overlapping is made in S type nets, the minimum overlapping length will be 2 meters,
- If overlapping is made in T-type nets, the minimum overlapping length will be 0.75 meters,
- Safety nets are installed as close as possible under the work surface, the distance between the work surface and the safety net does not exceed 7 m;
- Withstands testing of a 180 kg, 76 cm diameter sand-laden package thrown from the mesh work surface. It is calculated how much flexing the net can make with the impact intensity and weight it will be exposed to, and it is installed in such a way that it is prevented from hitting the ground below or any other object with this flexing.

Table Safety Net Minimum Horizontal Distances (Capture Widths)

Vertical distance from the working level to the horizontal axis of the mesh	Minimum horizontal distance from the outer edge of the net to the work surface boundary (catch width)
up to 1 m	at least 2m
up to 3 m	at least 2.5
up to 6 m	at least 3

- Security is checked at intervals determined specifically for the project, defective parts are immediately replaced by competent personnel.
- In order to ensure safety in the projection areas of working at height;
- All tools and equipment are properly secured to prevent them from falling.
 - Points where there is a danger of material falling from above in the working areas are surrounded by strips by observing safe distances and a safety warning sign is placed. In cases where this is not possible, an observer is placed at a safe point at the area entry point.
 - In cases where falling materials are likely to damage pressure equipment, the area is physically protected or the equipment is depressurized.
 - Materials with the potential to fall are removed from the work area. After the work is finished, the relevant area is checked in this respect.

7.3. Temporary Edge Protection Systems

7.3.1. Basic Requirements

In the MAOG Project, temporary protection systems with a certificate of conformity to the EN 13374 standard or equivalent standard in countries where it is not applicable are used and a temporary edge protection system is selected in the appropriate class for the work done.

- Around the floor slab edges,
- To the edges of gaps and openings with a short side of more than 100 cm that cause discontinuity in the floor such as elevators, stairs, chimneys, shafts, lighting gaps,



- In windows and similar spaces that create discontinuity between building elements,
- At the edges of the stairs,
- At the edges of the roof and especially around the fragile surfaces on the roofs,
- Around the working area in formwork works (floor, column, curtain, etc.),
- In other work areas where there is a level difference.

In the procurement of the temporary edge protection system, it is checked whether the manufacturer's compliance with the standard covers the class planned to be used in the MAOG Project. Temporary edge protection system that does not cover the planned class is not used.

The manufacturer-approved copy of the temporary protection system's certificate of conformity with the standard and the handbook containing the use and maintenance instructions provided by the manufacturer are available in the MAOG Project.

In cases where these systems are not applicable, the most effective fall prevention method is determined according to the risk assessment to be made. Where it is possible to implement a more effective collective protection measure than temporary edge protection systems, fall protection is provided by these measures.

7.3.2. Classification of Temporary Edge Protection Systems

Temporary edge protection systems are selected according to the nature of the fall gap or line to which they will provide protection. The performance requirements for the various Classes are specified in the EN 13374 standard as follows:

- Class A It is a type of protection that only provides resistance against static loads to support a person leaning against the edge protector or to provide a handle when walking next to it and to stop a person walking towards or falling towards the edge protector. It is used on work surfaces inclined up to 10 degrees.
- Class B It is a type of protection that provides resistance only to static loads and low dynamic loads, to support a person leaning against the edge protector or to provide a handle when walking next to it, to stop a person walking or falling towards the edge protector, and to stop a person slipping / falling on a sloping surface. It is used on inclined surfaces up to 30 degrees without inclined surface height limit and on inclined surfaces up to 60 degrees provided that the inclined surface height limit is limited to 2 m.
- Class C A type of protection that provides resistance to high dynamic forces based on safety requirements to stop a person from slipping down a steeply inclined surface. It is used on inclined surfaces in the range of 30 - 45 degrees without inclined surface height limit and on inclined surfaces in the range of 45 - 60 degrees, provided that the inclined surface height limit is limited to 5 m.



Figure5: Use of edge protection classes on different curved surfaces and at different curved surface heights.

7.3.3. Strength Requirements

The requirements for resistance to static loads to be applied to the Class A edge protection system in vertical, horizontal and vertical directions are as follows.

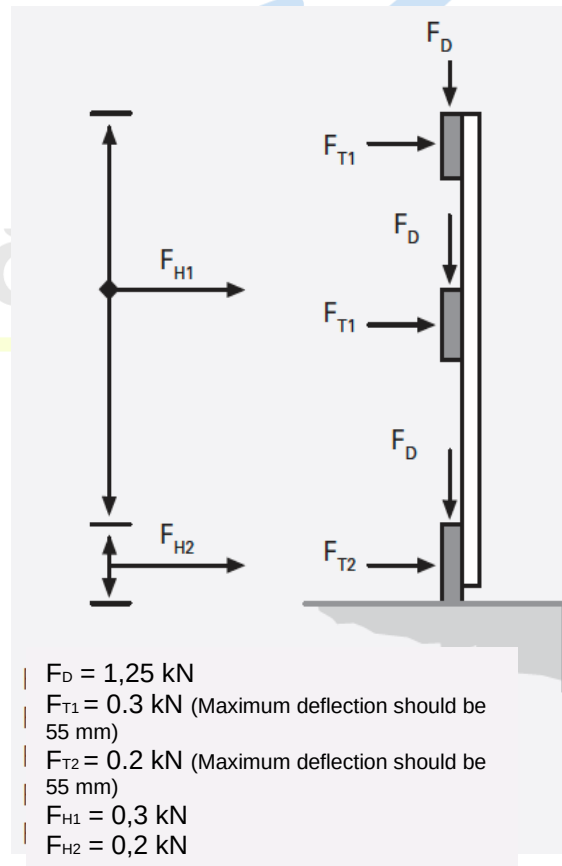


Figure6: Requirements for resistance to static loads to be applied vertically, horizontally and vertically to Class A edge protection system

The requirements for resistance to static loads to be applied in parallel to the Class A edge protection system are given in the figure below.

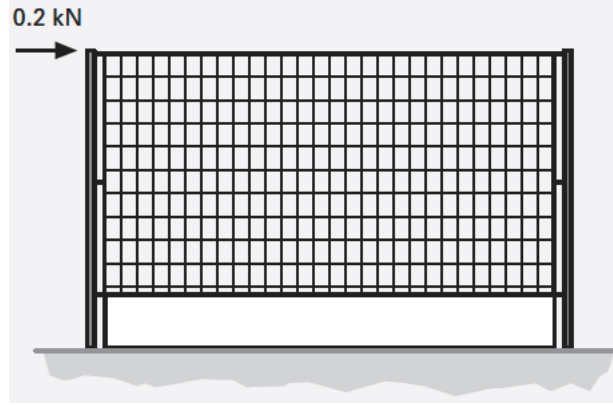


Figure7: Requirements for resistance to static loads to be applied parallel to the Class A edge protection system

Class A temporary edge protectors are limited to 55 mm in elastic deflection when a horizontal force of 0.3 kN is applied anywhere on top of the guardrail assembly for flat or curved surfaces up to 10 degrees. They are also unusually expected to withstand a vertical force of 1.25 kN.

For class B temporary edge protectors, the same static loading conditions apply as for class A. They are also subjected to a low-level dynamic test using a test bag. In this test, they withstand a horizontal impact energy of 0.5 kJ applied to the top protector and 1.1 kJ applied to the intermediate protector (protector).

Class C temporary edge protectors are subjected to a high level of dynamic testing using a roller rolling on a steeply sloping surface. This test applies 2.2 kJ of impact energy to the system. Minor damage to the guardrail system while it is expected to stop the roller is acceptable.

Class A, class B and class C temporary protection systems are selected from products with EN 13374 standard. Subjecting temporary protection systems that do not have this EN 13374 standard to strength tests with project possibilities and the successful passing of these tests does not indicate that they are sufficient for use.

7.3.4. Component and Gap Dimensions of Temporary Edge Protection Systems

Temporary edge protection systems consist of main guardrail, intermediate guardrail or intermediate protector and toe. Intermediate protection may consist of wire mesh, barrier, netting or similar components located between the main guardrail and the work plane.

In temporary edge protection systems, it is ensured that the top point of the main guardrail is at least 1 meter perpendicular to the working surface. It is ensured that the vertical distance of the top point of the kick plate to the working surface is at least 15 cm and the kick plate is placed adjacent to the working surface.

In Class A temporary guardrail systems, the clear clearance between the main guardrail and the intermediate guardrail as well as the intermediate guardrail and toe board cannot be more than 47 cm. In cases where vertical elements are used instead of intermediate railings, the clear gap between these elements cannot be more than 25 cm.

At least one of the horizontal and vertical openings in Class B temporary guardrail systems cannot be more than 25 cm.

At least one of the horizontal and vertical openings in Class C temporary guardrail systems cannot be more than 10 cm.



It is ensured that there is no gap between temporary protection systems and between these systems and building elements. In cases where this is not possible, it is ensured that this gap does not exceed 12 cm, provided that the kick plate component is uninterrupted.

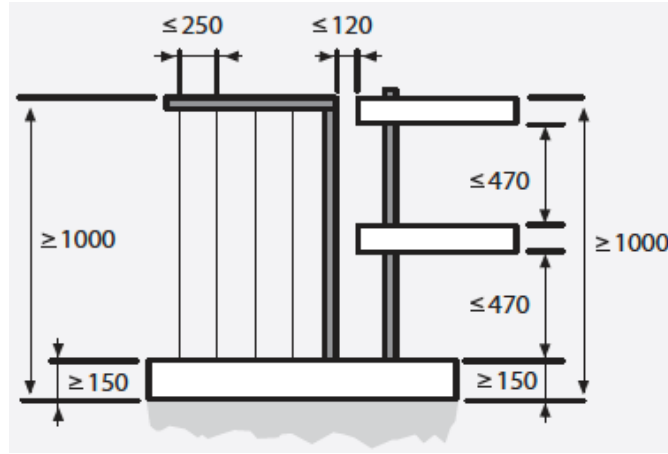


Figure8: Class A temporary edge protection systems component and gap dimensions (Dimensions are in mm)

7.3.5. Edge Protection Applications

7.3.5.1. Wire Mesh Protectors

Wire mesh edge protection systems are fall arrest systems that offer a high level of protection with a guardrail completely covered with wire mesh and a performance-tested design according to EN 13374. Mesh padding is typically a heavy-duty mesh and is also very effective at holding materials. Toe boards are typically a whole for each module.

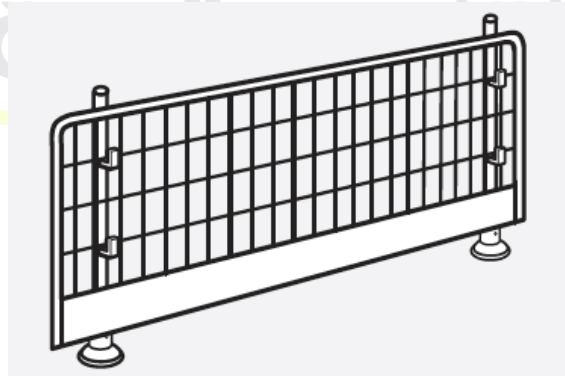


Figure9: Wire mesh edge protection system

This type of system is suitable as there are fixing accessories to reinforced concrete floors, steel beams, stairs, formwork and many other surfaces, including wood. In addition, these systems are also used to separate vehicle and pedestrian routes. In most cases, the fixing component is purpose-built. Commonly used components; wire mesh barriers, uprights, base sockets, floor and beam clamps.

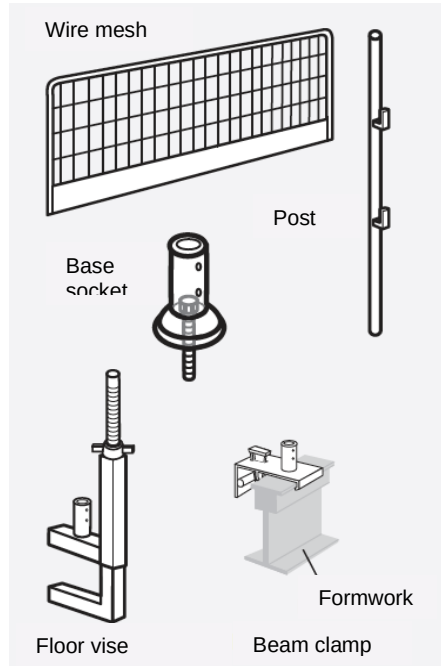


Figure10: Wire mesh edge protection system components

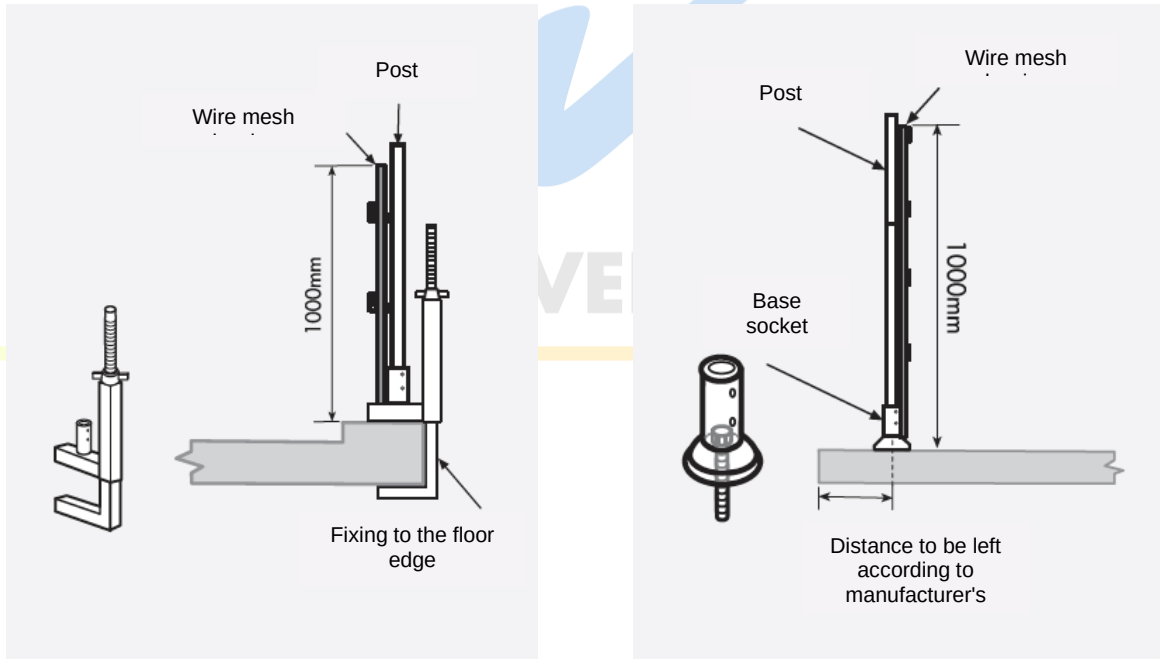


Figure11: Wire mesh edge protection system applications

Edge protection for steel structures is not easy as there is no flat reinforced concrete slab before the floor platform is built. It is important that the installation of the protection is carried out at the earliest stage. Components are available that can be clamped, fixed (bolts etc.) or welded to steel beams. Fixation of these components is done during ground preparation of the structural members and then removed or done using a suitable MEWP.

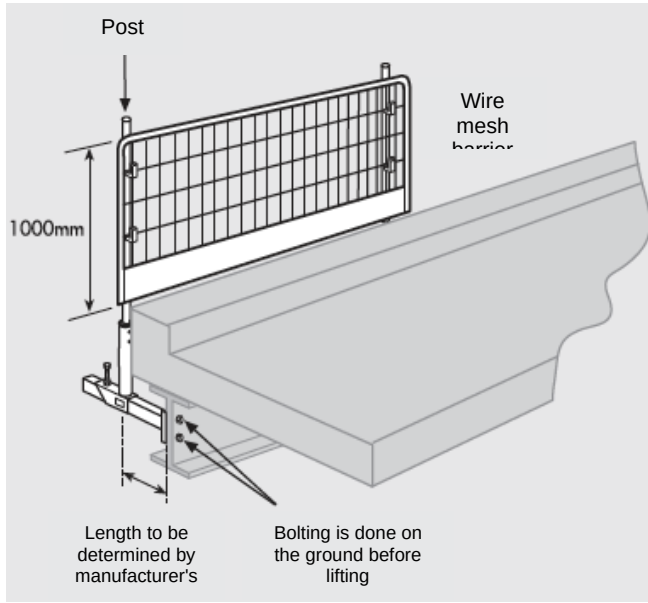
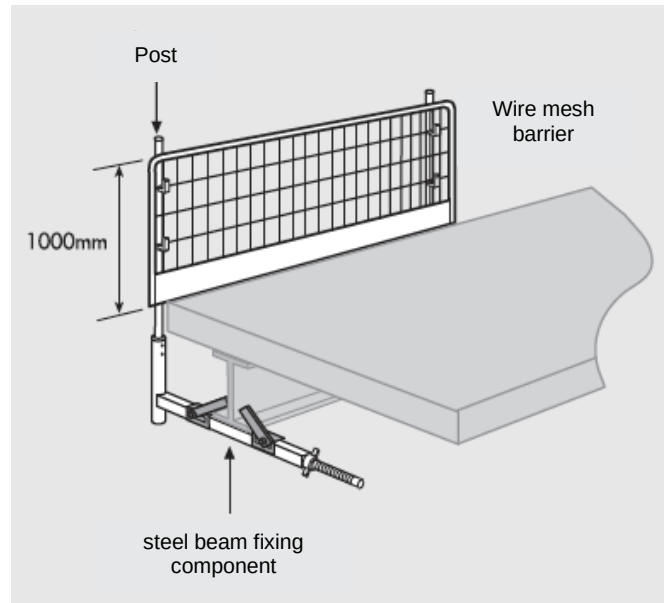
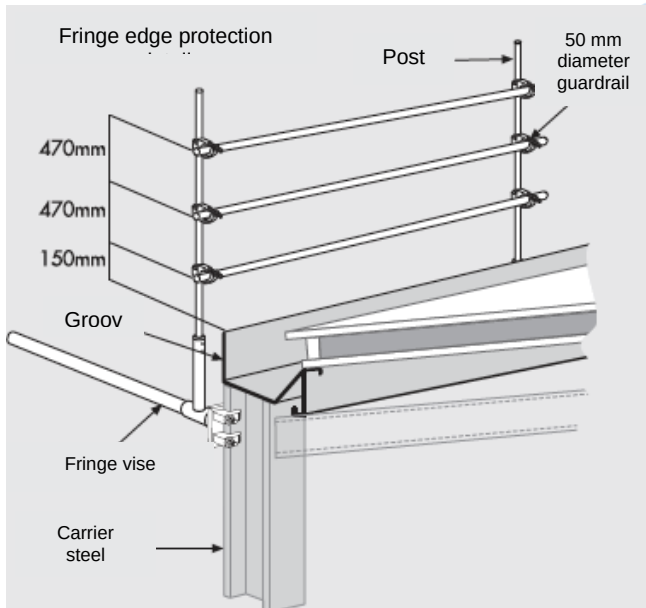
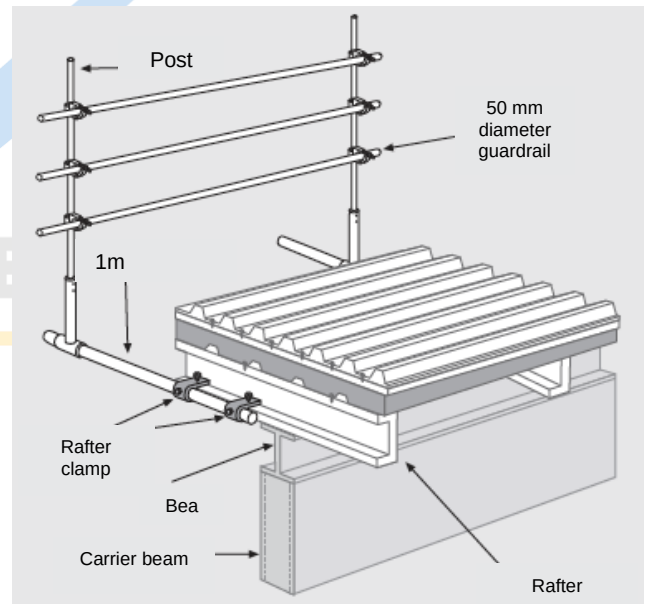


Figure12: Wire mesh edge protection system for steel structure and roof applications

7.3.5.2. Pipe Clamp Edge Protectors

Scaffolding tube and clamps are traditional components used to create slab edge protection. The system consists of vertical and horizontal pipes connected to each other by means of clamps. There is a base plate at the bottom of the posts and a wooden plank width toe board running parallel to the surface at the bottom of the post. The toe board protector is fixed to the post with a connecting clip or leaf clamps.

Pipe clamp temporary edge protection systems fall under Class A.



from slab edge protection systems. In excavations where sheet piling or other excavation shoring methods are used, these structures are generally used to fix the excavation edge protection systems.

All components of excavation edge temporary protection systems are selected from products with EN 13374 or equivalent standard valid in non-applicable countries.



Figure15: Excavation edge temporary protection systems applications

7.3.5.5. Free Temporary Edge Protection Systems

Free temporary edge protection systems are designed to comply with the Class A requirements of EN 13374. However, wire mesh is based on different support principles from temporary edge protection systems.

These systems take their support from components with specific weights, fixed to the barriers, placed close to the edge of the fall.

Some work surfaces, such as roofs, are defined as having a slope of 10 degrees or less, but have a variety of surfaces such as roof insulation, solar panels or the like. These types of surfaces require free edge protection systems to provide inspection and inspection, access, maintenance or modification work and fall protection.

The most important feature of free edge protection is that it provides protection at a certain strength without destroying the surface on which it is mounted.

The amount of weight may vary from product to product but is typically between 20 and 50 kg. The weight material used is chosen to be solid and not easily moved.

The product types meet the requirements of Class A according to EN 13374, but do not meet the strengths of Class B or Class C, although they resist dynamic loads.

Free temporary edge protection systems are applied at a safe distance from the fall edge. Although this distance varies from product to product, it is determined according to the manufacturer's recommendations.



Figure16: Free temporary edge protection system applications

7.3.5.6. Wind Panels

Wind panels are large-scale protection panels that provide protection on several floors at the same time, and they provide protection to workers while performing many activities such as formwork, concrete pouring and assembly on the protected platform.

It is used for both fall protection and windbreak in high-rise projects.

Wind panels are often manufactured in shapes that vary from supplier to supplier. Steel carriers are anchored to the structural components on the building facade. Wooden, composite, mesh-based panels are mounted on these carriers.

Wind panels are specially designed and produced depending on many parameters such as wind load, anchorage points, building facade geometry, depending on the place of use.

The panels are usually designed to go all the way around the building. For ease of assembly, gaps of up to 10 cm can be left between the panels, but these gaps are closed with different elements. The load on the anchors will depend on the panel design and care is taken not to overload the panel. For panels with a void-free surface, more care is taken during the design phases due to the wind load acting on the surface. Panels with mesh and perforated surfaces offer less wind resistance. Pre-assembly of the panels is done off-site.

The teams that perform the panel assembly prepare a site-specific construction method and risk assessment prior to assembly, and all assembly is carried out in line with the construction method and risk assessment. In order to minimize the risk of materials falling down during assembly, all gaps are covered with nets and other suitable materials, no loose material is left during the lifting work and assembly.

The following steps are followed for a safe installation.

- Adhere to design drawings and manufacturer/supplier assembly manuals.
- During the assembly and disassembly of the system, it uses the necessary PPE.
- Anchors are applied after the concrete reaches its final strength.
- The detailed parts of the assembly are made in a suitable area on the ground and the panels are removed as a whole.
- Due to the own weight of the components, preparation is made for mechanical handling in the field or during assembly (and disassembly).
- Only qualified personnel are assigned for panel assembly and disassembly.



- The lifting sequence is carefully planned and performed in accordance with the manufacturer/supplier's instructions.
- Care is taken to ensure that the panel weights are within the lifting capacity of the crane.



Figure17: Wind panel example

7.3.5.7. Floor Gap Closures

Discontinuity in the project, work platforms and floors:

- Only slab gap closure for gaps with a short side of 60 cm or less, and
- Temporary edge protection systems are applied with floor gap closure to floor gaps of more than 60 cm and less than 100 cm.

The upper surfaces of the floor gap closures shall be at most 10 cm above the level of the floors or platforms where they provide protection. If there is an upward protrusion, this protrusion is softened to make a maximum 30 degree inclination from the horizontal in order to reduce the risks of tripping and falling.

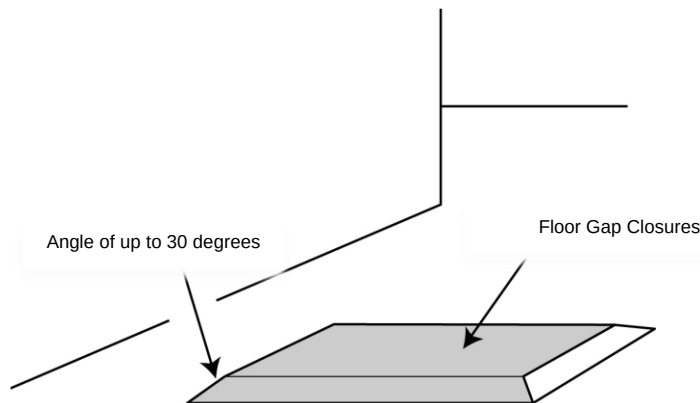


Figure18: Floor Gap Closures

Floor gap covers are fixed to the floor space to be resistant to horizontal movement and lifting.

Floor gap closures are made of wood or steel material, at the discretion of the MAOG Project Management, and are provided to withstand a pressure of at least 300 kg/m² at each point.



Slab gap closures can be manufactured by the MAOG Project Management or supplied externally. In both cases, the application drawings of the floor space closures and the calculations and test reports indicating the resistance to 300 kg/m² are available in the MAOG Project.

Walking routes cannot be created over the closures, construction machinery and equipment cannot pass over them, and the closures are marked visibly to warn employees and vehicles.

It is not necessary to cover the slab gaps, such as elevator shafts, where more than two sides are walls or reinforced concrete curtains and the short side is less than 100 cm. Safety nets are made in these spaces in accordance with the project rules and measures are taken against material falling on a lower floor. In the case of slab gap closure in such gaps, fixing drawings and durability calculations of the closure are specially made and records are kept.

In addition to temporary edge protection systems, slab gap closures are made with the initiative of the project for platform and slab gaps with a short side of 100 cm or more. In this case, the application drawings and durability calculations of the closure are specially made and the records are kept.

In case of removal of floor space closures, an officer is appointed to warn and direct pedestrians and vehicles until they are fixed back in place.

7.3.6. Installation, Dismantling and Controls

A risk assessment is made for the safe installation and removal of temporary protection systems. The risk assessment shall be such as to cover at least the following items:

- Fall Protection
- Falling objects
- Manual handling and lifting
- Insufficient work space
- Insufficient access to height
- Lifting and lowering loads
- Employee and operator competence
- Structural integrity
- Ground conditions

The following precautions and methods are followed for the installation and removal of temporary edge protection systems:

Installation workers

All installation and dismantling workers should be familiar with the steps and site procedures for installing and removing temporary edge protection systems. All installation and dismantling workers have demonstrable competence to install the relevant system.

Incident – accident management

Any accident or incident, no matter how minor, is immediately reported and reported to the superior.

Access conditions / Site conditions

Appropriate access roads are provided and maintained to allow access from public transport to the work area. Ground conditions in the work area are established and maintained in a condition suitable for access (eg MEWPs) and hoist installation.



Work Sites

Once areas to work are identified, contractors and other teams ensure that no other workers are present in the at-risk areas or fall area. These areas are closely monitored and updated in line with progress. Where work is carried out that may cause materials to fall on passers-by, appropriate methods and means are used to isolate the areas below the work activity.

Planning

By thoroughly planning the work and installing systems in advance, it can reduce the need for working at height. If personal fall arrest or restraint equipment is to be used, the construction method, harness, lanyard and hook/carabiner type, lifeline and anchorage requirements are defined. Rescue plans are prepared for possible scenarios and competent people are assigned to implement these plans. Temporary edge protection system components are checked before installation, damaged components cannot be used. Temporary edge protection systems and their components are prevented from spontaneously moving horizontally and vertically or being dislodged during use.

Temporary dismantling and arrangements

If the system needs to be temporarily removed to allow other work to be done, the unprotected area is immediately secured by other compensatory means and the system reinstated as soon as possible by those authorized to restore it.

Delivery

Upon completion of a site, the installer completes the delivery note that the system has been securely installed and leaves a copy with the site representative. When it is started to be used, the installed system is checked daily by people who are familiar with the hardware and control methods.

Defects that are not approved for the use of temporary edge protectors are given in the image below.

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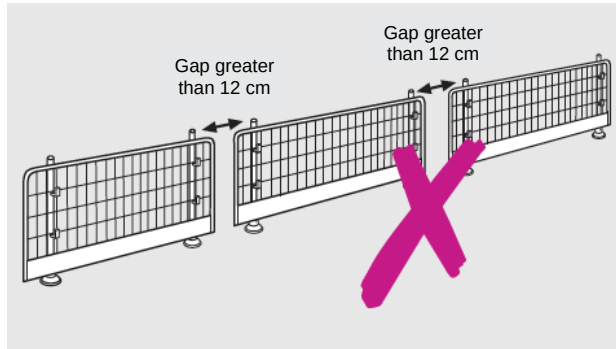
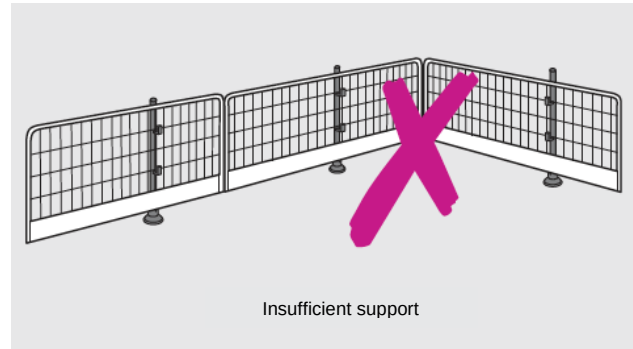
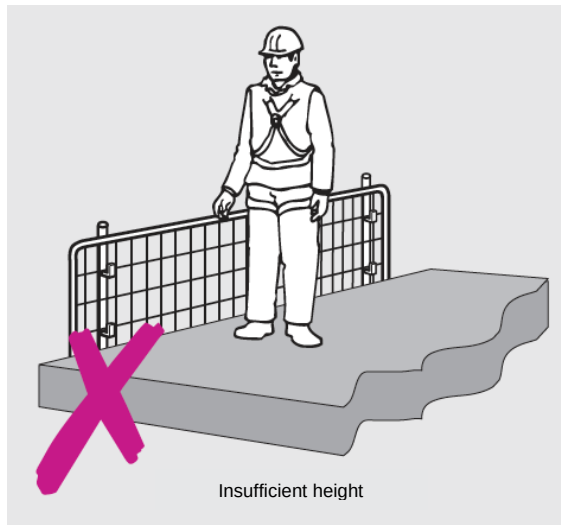
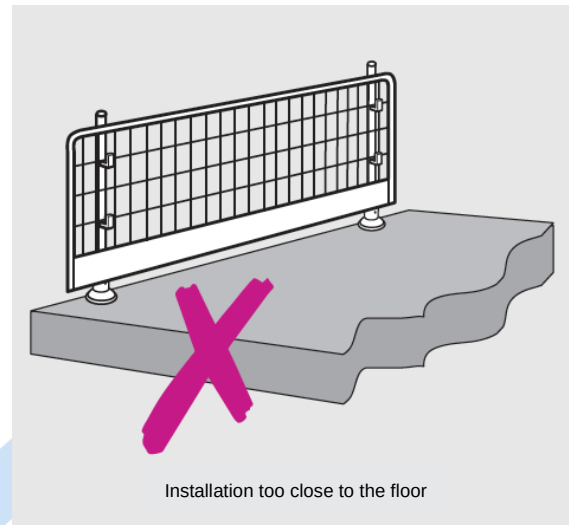
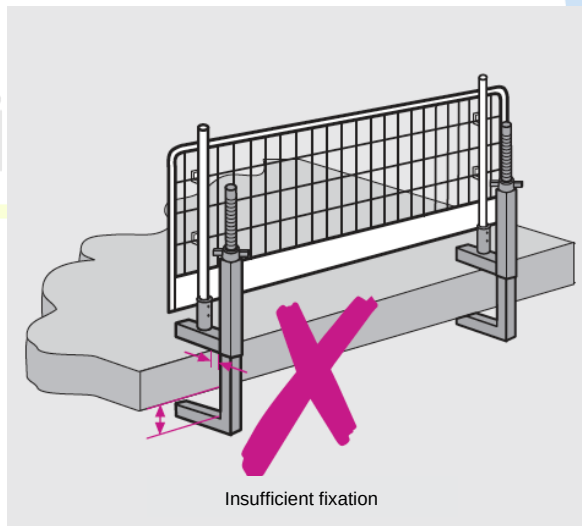
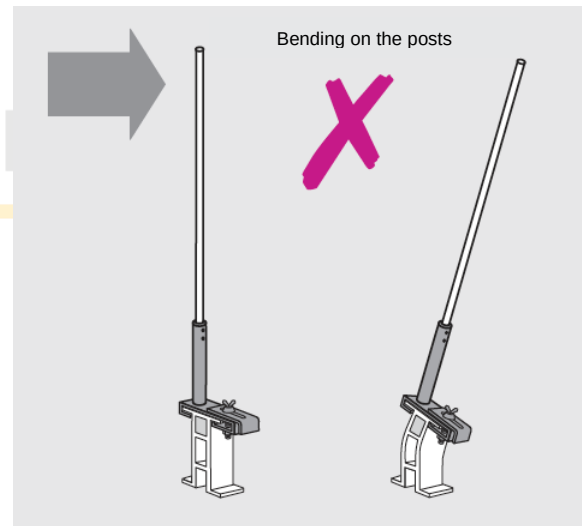


Figure19: Improper temporary edge protection practices

7.4. Ladders

Ladders meet the following requirements and specifications:

- Ladders are primarily used for access.



- If it is necessary to work on the ladder, the employee; appropriate parachute type safety belt is used.
- Ladders should be suitable for the job and in good condition.
- Ladders are installed on a solid and level ground.
- Ladders do not pose a hazard where they are installed and positioned. If necessary, the starting point of the ladder is barricaded.
- Ladders are fixed from below and above as much as possible. Where the ladder is not secured, the first rung is supported by another worker.
- Ladders do not rest on any fragile surface or anchor points.
- The distance from the point where the ladders stand to the surface is 1.05 meters / 3 steps.
- Both hands are free when going up or down the ladders . Tools and materials are carried with a belt or hauled up safely. When working on, descending or ascending a ladder, 3-point contact is always maintained.
- Ladders are installed according to the 4 / 1 (75 degree slope) rule. Fixed steep ladders are at a 90-degree slope.
- Ladders are physically checked at certain intervals and marked by giving numbers to each one (color code system can be applied). The controls are recorded and followed up.
- Employees using ladders are trained on the hazards associated with ladder use.
- Metal ladders are used in electrical works. Ladders with fiberglass insulation are used when working in environments where electricity is available.

7.5. Mobile Elevated Work Platform

It is ensured that the mobile work platforms that can be raised are installed and used in a solid and stable manner in all foreseeable usage conditions, taking into account the ground characteristics.

Mobile work platforms that can be elevated are used by employees authorized by MAOG Project Management and who have received appropriate training and certification and/or license for safe use in accordance with local legislation. The person(s) who will work with the elevated mobile work platform are informed about the following:

- Manufacturer's instructions and warnings
- Features by elevated mobile work platform model
- Control functions according to the raised mobile work platform model
- Function of each safety device
- Emergency stop and emergency landing

Working with a mobile elevated work platform, subject to work permit; It is determined by the MAOG Project Management.

Before starting to work with the mobile work platform, its suitability is checked, approved and recorded by the operator.

Mobile elevated work platforms are maintained (daily, weekly, monthly, quarterly, semi-annually, etc.) by persons authorized by the manufacturer or by experts authorized by the MAOG Project Management, as determined by local legislation and relevant standards and/or as determined by the manufacturer. .

The competent person responsible for the selection and use of the mobile elevated work platforms is aware of the possible dangers of using the mobile work platform, ensures that the necessary precautions are taken and keeps these risks under control.

The use of the mobile elevated work platform restricted in bad weather conditions. In particular, the wind speed allowed for use cannot exceed the limits set by the manufacturer of the equipment.

The working area is blocked in areas with vehicle / equipment or pedestrian traffic. Necessary arrangements are made to prevent the presence of unemployed employees in the work area of the mobile elevated work platform .

Mobile work platforms with internal combustion engines are used in workplaces, provided that sufficient air is provided that will not create a safety and health risk for employees. It cannot be used indoors.

The number of employees and/or the load determined by the manufacturer on the platform is not exceeded. The capacity determined by the manufacturer is visibly indicated on the platform.

The person working on the mobile elevated work platform fastens the safety belt on the approved anchor point.

7.6. Working Near the Excavation

When working near the excavation, the following requirements are observed:

- Excavation areas are surrounded by guardrails or barricades and warning signs are posted.
- The passages provided to allow workers to pass the excavations shall be at least 80 cm wide, and guardrails are provided.
- Every 7.6 meters, ladders, ramps, etc. are used to safely enter/exit the excavation. is provided.

7.7. Material Falling

- In the activity of working at height, power tools, bolts, nuts or any material that can be damaged by falling, etc. used, the following precautions are taken. The area under the work area is barricaded and warning signs are posted.
- All hand tools used are used with tool lanyards as determined in risk assessment and Occupational Hazard Analysis (ITA).
- Signs, posters are hung and/or HSE safety campaigns are organized to raise awareness about material falls.
- Safety nets are selected considering the dimensions of the materials that may fall.
- Employees are given training on material falls.

7.8. Roofing and Fragile Surfaces

- Preventive measures are taken against the falling of employees, tools or other objects and materials.
- In elevated workplaces on floors or floors, including roofs, all open edges are protected by suitable guardrails and heel plates. Where the aforementioned guardrails and heel plates cannot be provided, appropriate anchor points and adequate safety belts (parachute type) are provided and used.
- Appropriate steps, ramps or portable ladders are provided for safe access and egress to elevated workplaces, including roofs.
- All roofing work is planned in advance and regularly inspected.
- No work is done on the roof in weather conditions that may threaten the safety of employees.
- Creep boards, walkways and roof ladders are securely attached to a solid structure.
- Roof brackets match the roof slope and are securely supported.



- Intermediate guardrails are provided for situations that require the person to kneel and squat close to the edge of the roof unless other precautions are taken, such as the use of safety belts.
- On large roofs that will not be worked on or near the roof edge, a barrier is provided, consisting of the parapet and diagonal scaffolding pipes supporting the parapet. Said barriers are positioned at least 2 m from the edge.
- When work is carried out on pitched roofs, adequate and suitable loft ladders are provided and securely fixed.
- During detailed work on roofs, durable barriers or guardrails are provided to stop the person falling from the roof.
- To avoid danger, before any roofing made of fragile material is put in place, a suitable material such as steel mesh wire is placed underneath it in the appropriate position.
- In order to prevent danger, purlin or intermediate supports carrying fragile roofing material are tightened sufficiently.
- Where the roof creek or parapet gutter of the fragile roof is used for access, the fragile material next to it is covered at a minimum distance of 1 m to protect against falling from the fragile material.
- For buildings with brittle roofs, a warning sign that the roof is fragile is prominently hung near the roof.

7.9. Rescue Plan

The project includes a custom recovery plan and hardware that is regularly reviewed and updated. Rescue methods do not require a rescue worker who may be compromised. The appropriate equipment and methods for use in the rescue plan are defined. Specific rescue equipment and rescue systems specifically designed for rescue or evacuation are available.

During work at height, the worker may lose consciousness when suspended after a fall, or the blood circulation will slow down due to the pressure on his body and a situation may arise that requires immediate treatment. Therefore, all the team working at height should be equipped in this regard and trained in order to quickly evacuate the injured team member.

Post-Fall Evacuation: In case of an occupational accident, the necessary measures and equipment for evacuation are determined and who will do the rescue is determined. No work can be done alone. An employee may work alone at height, but at least one rescue-trained personnel is present on site.

The following considerations are considered in all recovery plans and recovery operations:

- Existing anchor points,
- Rescue Equipment
- Whether there are any obstacles in the rescue zone,
- The method used to attach the person to be rescued to the rescue equipment,
- The needs of the injured person rescued and the person's possible needs following the rescue,
- The risk of suspension trauma,
- The situation requiring lowering or raising the rescued person, as the case may be,
- Training and competencies of the personnel who will do the rescue work.

Particular attention is paid to existing anchor points, both in the planning phase and in the rescue operations. Anchor points are conveniently placed for planned operations, are extremely robust and are suitable for use by two people when necessary. Consideration is given to the possibility that the person to be rescued is dangling on the edge or is under the edge.

What to do in case of suspension;



- The injured person waiting to be rescued, suspended in the safety belt, is removed from the vertical sling as soon as possible. It is aimed to make the rescue within 10 minutes. This period is very important for the immobile casualty. In order to accelerate the blood circulation of the conscious casualty, he is encouraged to do the body / leg movements recommended by the expert.
- In the project, there will be a first aid kit, stretcher and a rescue team that can apply first aid.
- Only trained persons are involved in the rescue team and operations.

7.10. Storage of Fall Protection and Prevention Equipment

- Safety belts and safety ropes are stored in a dry place. Direct sunlight is avoided.
- Fall protection equipment is not contaminated. Contaminated and unmarked equipment shall not be used.
- All fall protection equipment is checked once a month and recorded with serial numbers. Visual inspection is done before each use.
- All fall protection equipment and systems are tested according to the manufacturer's recommendations. Any fall protection equipment that is damaged or activated by a fall is removed from operation.

7.11. Difficult Access Areas – Rope Access Requirements

It is used in situations where there is no collective protection measure in the working environment, and the techniques of working at height do not work (no possibility to stand on any ground). This method of operation is also applicable for temporary work where the installation of collective protection methods is difficult.

It is possible to reach difficult working environments via rope. Rope access techniques are applied by expert personnel who are trained and certified in this regard.

If there is a safe working environment above, the installation for rope access is done, and below, a double rope installation is carried out by a staff member using mountaineering techniques to set up the rope to the top.

Double rope is always used in rope access technique. 1. To advance on the rope, 2. The rope is used for secondary safety together with a fall arrest system.

7.12. Work Environment

7.12.1. Lighting

All access roads and all work areas used for entry and exit to work areas at height are adequately illuminated during the night. Lighting measurements are made at certain intervals, and its compliance with the relevant local legislation is inspected and recorded.

7.12.2. Wind

On mobile elevated work platforms (MEWP), work is not carried out at wind speeds of 45 km / h and above, unless otherwise specified on the vehicle. It is not possible to work on mobile piers at wind speeds of 27 km / h and above.

7.13. Control

All fall arrest systems used in working at height are checked by competent person(s) at regular intervals. Before each use, users; Visually inspects connections, anchors, anchor points and tie ropes. In addition to these controls, it is checked by competent / expert people (at least once a month) and control records are kept. These checks made by competent / expert persons are marked on the relevant hardware / equipment (color code, label system, etc.). Equipment suspected of being



damaged is not used. Lifelines are tested before use and the test is recorded. After the lifelines are checked, they are marked with a control tag that the lifeline has been checked, and the control records are tracked on a log chart.

The service life of fall arrest systems is checked within the scope of manufacturer's information and relevant standard requirements.

8. MONITORING, ASSURANCE AND VERIFICATION

Key success indicators (KPIs) of this procedure will be monitored, verified and evaluated by the relevant parties in accordance with their responsibilities set forth in the E&S Governance document, within the scope of the MAOG-RECU-GB-GNL-IS-PRG-0007-0 HSE Monitoring, Assurance and Verification Procedure.



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