



REC ULUSLARARASI

Aziziye Mah. Portakal Çiçeği Sok. No:33 Çankaya / ANKARA

Phone: +90 312 441 31 41 Fax: +90 312 442 58 16

İşin Adı : Mersin-Adana-Osmaniye-Gaziantep Yüksek Standartlı Demiryolu Hattı  
The Name of : İnşaatı ile Elektromekanik Sistemlerinin Temini  
the Job : Construction of Mersin-Adana-Osmaniye-Gaziantep Hight Standard  
Railway Line With Supply Of Electromechanical Systems

Rapor Adı : PERSONAL PROTECTIVE  
Report Name : EQUIPMENT PROCEDURE

Doküman

Kodu

Document

Code

: MAOG-RECU-GN-GNL-IS-GNL-PRG-0019-0

| Revizyon<br>Revision | Tarih<br>Date | Rapor Adı<br>Report Name | PERSONAL<br>PROTECTIVE<br>EQUIPMENT<br>PROCEDURE |
|----------------------|---------------|--------------------------|--------------------------------------------------|
| 0                    | 16/09/2021    | Açıklama / :<br>Remarks  |                                                  |
|                      |               | Hazırlayan / Prepared by | Kontrol eden / Checked by                        |
|                      |               | Onur GÜL HSE Supervisor  | Hasan TAŞKAN HSE<br>Manager                      |
|                      |               | Açıklama / :<br>Remarks  |                                                  |
|                      |               | Hazırlayan / Prepared by | Kontrol eden / Checked by                        |
|                      |               |                          |                                                  |
|                      |               | Açıklama / :<br>Remarks  |                                                  |
|                      |               | Hazırlayan / Prepared by | Kontrol eden / Checked by                        |
|                      |               |                          |                                                  |



## TABLE OF CONTENTS

|                                                                     |    |
|---------------------------------------------------------------------|----|
| 1. PURPOSE .....                                                    | 4  |
| 2. SCOPE .....                                                      | 4  |
| 3. IMPROVEMENT .....                                                | 4  |
| 4. REFERENCES .....                                                 | 4  |
| 5. RESPONSIBILITY .....                                             | 5  |
| 5.1. Project Manager .....                                          | 5  |
| 5.2. Section Chiefs / Unit Managers.....                            | 5  |
| 5.3. Purchasing Manager / Responsible.....                          | 6  |
| 5.4. Project HSE Unit .....                                         | 6  |
| 5.5. Field / Manufacturing Engineers, Technicians and Foremen ..... | 7  |
| 5.6. Headquarter E&S Manager .....                                  | 7  |
| 5.7. Employees.....                                                 | 7  |
| 5.8. PIU (Project Implementation Unit) .....                        | 7  |
| 5.9. Executive Environmental and Social Management Committee .....  | 7  |
| 6. DEFINITIONS AND ABBREVIATIONS .....                              | 8  |
| 7. IMPLEMENTATION.....                                              | 9  |
| 7.1. Risk Management .....                                          | 9  |
| 7.2. General Requirements.....                                      | 9  |
| 7.3. PPE Requirement for Subcontractor and Supplier.....            | 10 |
| 7.4. Employee Training .....                                        | 10 |
| 7.5. Selecting of Personal Protective Equipment (PPE):.....         | 10 |
| 7.5.1. Employee Participation in PPE Selection .....                | 11 |
| 7.6. CE Mark, TS EN Standards and PPE Categories .....              | 11 |
| 7.7. Personal Protective Equipment .....                            | 11 |
| 7.8. Risk Based Personal Protective Equipment .....                 | 12 |
| 7.8.1.Face Protection .....                                         | 12 |
| 7.8.2.Eye protection.....                                           | 13 |
| 7.8.3.Body Protectors .....                                         | 14 |
| 7.8.4.Ear Protectors .....                                          | 16 |
| 7.8.5.Fall Protection.....                                          | 18 |
| 7.8.5.1 Parachute Type Safety Belts, .....                          | 18 |
| 7.8.5.2 Working Positioning Belt.....                               | 19 |
| 7.8.5.3 Lanyards (Extension ropes) .....                            | 19 |



|         |                                                                        |    |
|---------|------------------------------------------------------------------------|----|
| 7.8.5.4 | Energy Absorbers (Shock Absorbers).....                                | 20 |
| 7.8.5.5 | Retractable Fall Stoppers .....                                        | 20 |
| 7.8.5.6 | Periodic Inspection of PPE Used for Fall Protection .....              | 21 |
| 7.8.6.  | Respiratory Protective Equipment .....                                 | 21 |
| 7.8.6.1 | Filtering Devices Qualified as Dependent on Ambient Atmosphere .....   | 21 |
| 7.8.6.2 | Respiratory Apparatus Qualified Independent of Ambient Atmosphere..... | 22 |
| 7.9.    | Personal Protective Equipment (PPE) Registration List.....             | 23 |
| 7.9.1   | Personal Protective Equipment Matrix .....                             | 23 |
| 7.10.   | Control and Maintenance of Personal Protective Equipment (PPE) .....   | 23 |
| 7.11.   | Storage of Personal Protective Equipment.....                          | 23 |
| 8.      | MONITORING, ASSURANCE AND VERIFICATION.....                            | 24 |
| 9.      | RELATED FORMS .....                                                    | 24 |



## 1. PURPOSE

To ensure the safe management and control of personal protective equipment (PPE) used during the execution of the activities carried out in the Mersin-Adana-Osmaniye-Gaziantep High Standard Railway Project.

## 2. SCOPE

The content of this document has been developed to determine the minimum requirements for the Mersin-Adana-Osmaniye-Gaziantep High Standard Railway Project; It is developed according to the legal regulations of the working area, employer expectations and international standards.

## 3. IMPROVEMENT

Persons who detect ambiguity and inconsistency in this document can report their requests and suggestions using the “**Hata! Başvuru kaynağı bulunamadı.**” in APPENDIX 1.

## 4. REFERENCES

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

MAOG-RECU-GN-GNL-IS-GNL-PRG-00015-0 Procedure for Working at Height

Communiqué on Harmonized National Standards for Personal Protective Equipment

Personal Protective Equipment, AÇSGB, 2016

TS EN 361 – Personal Protective Equipment - Against Falling From a Certain Height - Full Body Belt Systems

TS EN 358 – Personal Protective Equipment - To Ensure Operating Safety at a Certain Height and Prevent Fall - Holding Systems, Belts and Ropes for Operating Position

TS 5560 EN 166 – Personal Eye Protection – Specifications

TS 6860 EN 175 – Personnel Protectors-Eye and Face Protection Equipment During Welding and Similar Operations

TS EN 379 + A1 – Personal Eye Protection - Automatic Welding Filters

TS EN 20471 – Clothing with High Visibility Warning - Experimental Methods and Features

TS EN 397 + A1 – Industrial Safety Helmets

TS EN 169 – Scale Number and Permeability Features for Filters Aimed at Protecting Employees in Hard Soldering, Opening Arc Welding Mouths and Plasma Melting Source Cutting Works in Welding Work

TS EN 170 – Protection Ratings and Permeability Of Filters That Protect Against Ultraviolet Imbuses

TS 8435 EN 171 – Scale Numbers and Permeability Features for Filters That Protect Against Infrared Glow

TS EN 172 – Scale Numbers of Sun-Blocking Filters for Industrial Use Permeability and Related Properties

TS En 388 + A1 – Protective Gloves Against Mechanical Risks

TS En 374/1 – Protective Gloves Against Hazardous Chemicals and Microorganisms - Part 1: Terms and Performance Rules for Chemical Risks



TS En 407 – Protective Gloves Against Heat Risks

TS En 511 – Cold Protective Gloves

Gloves to Protect Against Ionizing Radiation and Radioactive Pollution

TS En 1149-5 – Protective Gloves - Electrostatic Properties - Part 5: Material Performance And Design Features

TS En 420 + A1 – Protective Gloves - General Characteristics - Test Methods

TS En 12477 – Protective Gloves for Welders

TS En 352/1 – Hearing Protectors - General Rules - Part 1: Ear Concealers

TS En 352/2 – Hearing Protectors - Safety Features and Experiments -Part 2-EarPlugs

TS En 352/3 - Hearing Protectors - General Rules - Part 3: Protective Earmuffs Attached to Industrial Safety Helmet

Regulation on Personal Protective Equipment

Regulation on Usage of Personal Protective Equipment in Workplaces

## 5. RESPONSIBILITY

### 5.1. Project Manager

The responsibilities of the Project Manager are as follows:

- To establish the organizational structure necessary for the supply and use of personal protective equipment (PPE) in the workplace in accordance with this document.
- To ensure the will and authority to adopt the use of PPE in the project as the last step of the risk control hierarchy.
- To create the necessary infrastructure for all parties such as permanent and temporary employees of the project, subcontractors, suppliers, business or promotional visitors, guests, visitors and interns to use PPE that meets the procedural requirements.
- Allocating the necessary resources for the supply of PPE suitable for the work to be done.
- To create the resource and organizational structure to provide the PPE stock that will be required throughout the project activities.
- To establish the organization in accordance with the procedure for the supply of PPE, its replacement when necessary, usage training, control and maintenance.

### 5.2. Section Chiefs / Unit Managers

The responsibilities of Unit Managers are as follows:

- To ensure that the risks are reduced to an acceptable level with the measures taken in accordance with the control hierarchy and to give priority to collective protection measures over PPE.
- To determine appropriate PPE by assessing the relevant risks in the work area.
- Evaluating the notifications made by users about PPE, ensuring that they are taken into account in the selection of PPE.
- To ensure that employees who use special PPE get approval from the workplace doctor.
- To ensure that all users receive hands-on training on the use, maintenance and protection of PPE.



- To ensure that PPE suitable for the number of employees and the work to be done is available.
- To ensure that the units affiliated to him fully implement the procedure, to encourage employees in this regard.
- To inform the Rönesans HSE Unit about operations that require new PPE or activities that require revision of existing PPE.

### 5.3. Purchasing Manager / Responsible

The responsibilities of the Purchasing Manager / Responsible are as follows:

- To ensure that all personal protective equipment to be supplied and provided is checked for compliance with the procedure and requested standards.
- Establishing a suitable stock area where the supplied and stocked PPE will be protected from physical and chemical effects such as temperature, humidity, in line with the manufacturer's instructions.
- To ensure that the warehouse employee receiving the PPE receives training on receiving the appropriate product and proper storage.
- To ensure that the units subordinate to him fully implement the procedure.
- To provide PPE orders by making them on time.
- Maintaining and updating the standard documents and test documents of approved materials.
- Storing EC type examination documents, declarations of conformity and test reports of the supplied PPE.
- To keep track of the PPE stock and to provide the infrastructure that will ensure the timely supply of the PPE, which decreases according to the consumption situation.
- To ensure that the purchased material is stored in accordance with the stock life, that the stock life is deducted from the warehouse records and taken out of the warehouse.

### 5.4. Project HSE Unit

The responsibilities of the HSE Unit are as follows:

- Considering the risk control hierarchy in the risk assessment working groups for the activities; To provide direction and guidance for controlling risks with the precautionary groups at the top of the hierarchy.
- To develop a set of measures that enable the PPE controls to be activated in a way that supports the controls at the upper levels of the risk control hierarchy.
- Working in cooperation with the unit managers to determine the personal protective equipment (PPE) requirements according to the results of the risk assessment made in the workplace and to take the necessary precautions.
- To review and update the risk assessment on PPE, together with the Unit Managers, in the following cases:
  - In the change of working method,
  - In equipment change,
  - When the accident happens,
  - As a result of the inspection or if PPE replacement is requested by the user.
- Maintaining hazard assessment records related to PPE.



- To provide training and guidance to managers and employees on the selection, use, maintenance and disposal of PPE.
- To monitor the proper use of PPE in the field.
- To implement incentive programs to reduce violations in the use of PPE.

### 5.5. Field / Manufacturing Engineers, Technicians and Foremen

The responsibilities of Field Engineers, Technicians and Foremen are as follows:

- Ensuring the use of basic and job-specific PPE in the field.
- To make markings on the use of PPE at necessary points in the field.
- To monitor the use of PPE by employees, to warn against misuse, misuse and other use violations, to provide guidance on correct use and to take disciplinary measures when necessary.
- To replace worn-out or expired PPE.

### 5.6. 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.

### 5.7. Employees

Field workers use the PPE delivered in line with the information, training and instructions given. Firstly, take collective protection measures related to their work. At the point where they cannot produce a solution, they ask for technical support from the supervisor. Do not use PPE for any other purpose. Protect the delivered PPE, store it in accordance with the instructions, maintain and clean it. In case the PPE is damaged or has elements that cause discomfort during use, they apply to the necessary places for replacement or other feedback.

### 5.8. 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.

### 5.9. 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

**Accreditation** Formal acknowledgment by the national accreditation body that a conformity assessment body meets the requirements set by relevant harmonized standards to perform a specific conformity assessment activity and, where applicable, additional requirements stipulated in relevant sectoral regulations.

**Cross Contamination:** It causes pollution by passing from a surface with harmful effects such as bacteria and viruses to a surface that is not exposed.

**CE Marking** A mark showing that the personal protective equipment complies with all relevant rules of the legislation providing for the affixing of the "CE" mark by the manufacturer.

**dB (A):** A unit indicating the A-weighted sound level (the sound level that the human ear can hear) used in sound pressure level measurement in accordance with international standards (IEC 61672:2003).

**Energy Absorber (Shock Absorber):** Equipment used in a fall arrest system designed to remove kinetic energy from falling from a height.

**Manufacturer:** A natural or legal person who manufactures or designs personal protective equipment and markets it under its own name or trade mark.

**Personal Protective Equipment (PPE):** Personalized to protect against one or more health and safety hazards; any device, tool or material designed to be worn, worn or carried.

**Commissions:** European Commission.

**Lanyard** A specially designed rope, sling, or thick woven tape that attaches to a body harness, anchor, deceleration device, or safety rope.

**Expert Person for Periodic Inspection:** Person familiar with the applicable periodic inspection rules, recommendations and instructions applicable to the component or system distributed by the manufacturer.

**Basic Personal Protective Equipment** Minimum personal protective equipment, which is not specific to any job and mandatory to use in the workplace.

**Conformity Assessment Body:** Body that performs conformity assessment, including calibration, testing, inspection and certification.

**Conformity assessment,** The process that indicates whether the PPE fulfills the essential health and safety requirements set out in the relevant local Regulations.

**Harmonized Standard** A European Standard adopted at the request of the Commission in order to implement harmonized European Union legislation.

**Authorized Representative:** A natural or legal person residing in Turkey authorized by the manufacturer with a written contract to fulfill some of the manufacturer's obligations under this Regulation (KKD Regulation) on his own behalf.

**Working at Height:** Work carried out in any area where there is a difference in level and where the possibility of injury may occur as a result of falling.

## 7. IMPLEMENTATION

### 7.1. Risk Management

For Personal Protective Equipment (PPE), a risk assessment is made according to the MAOG-RECU-GN-GNL-IS-GNL-PRG-0002-0 Hazard and Risk Management Procedure.

Risks are controlled according to the risk control hierarchy. It is aimed to eliminate the need to use PPE. If a single control is not sufficient to reduce business risks to the lowest reasonably practicable, a combination of controls is used.

Based on the result of the risk assessment, the following risk control hierarchy is applied until the use of PPE.

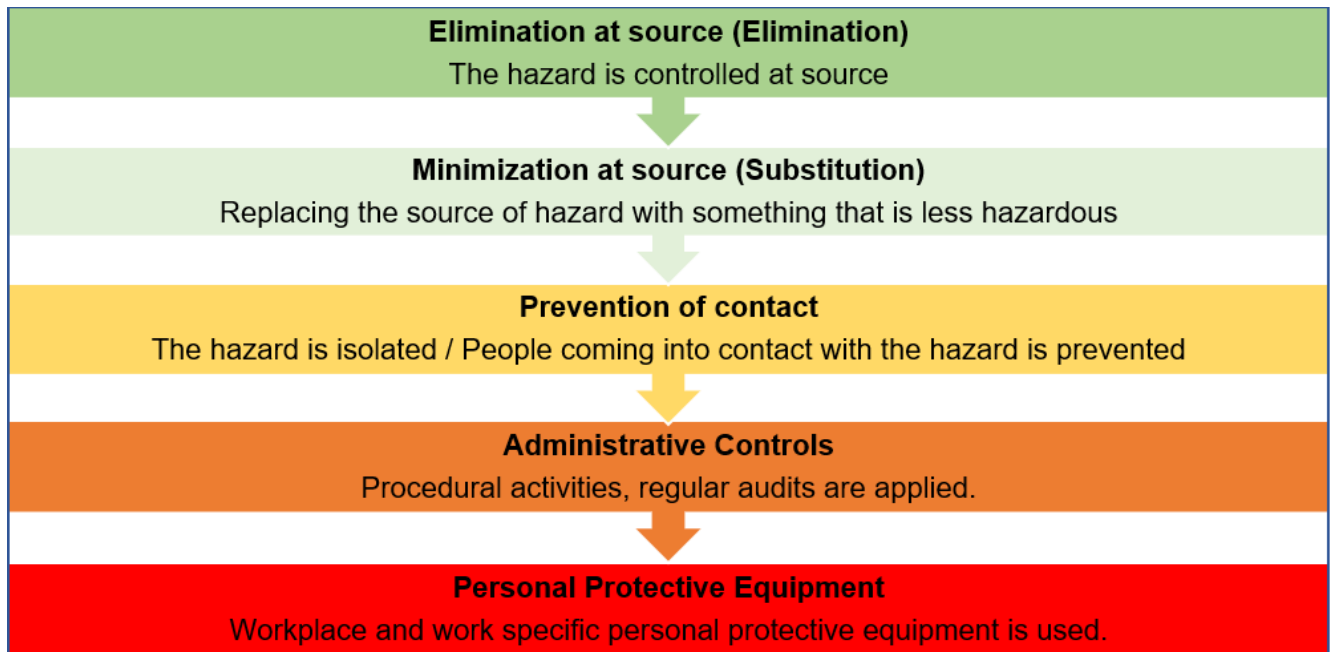


**Figure1:** Hierarchy of Risk Controls

### 7.2. General Requirements

In order to protect the employees in the project from hazards, first of all, relevant measures are taken in accordance with the risk control hierarchy, other than PPE. If there is still a risk after the risks have been reduced to an acceptable level and become feasible, the use of PPE is applied. PPE is not applied as a basic protection measure, it is used in support of other measures.

The general requirements for the use, maintenance and supply of PPE are listed below:

- PPE that does not have the European Norm (EN) or the equivalent valid norm in the country of work cannot be used. Compliance with the relevant norm is absolutely proven in accordance with legal regulations.



- When PPE is not used, it is stored in accordance with the manufacturer's instructions.
- It is given to the employee free of charge.
- Maintenance, repair and periodic controls of the PPE are carried out in accordance with the user manual to be provided by the manufacturer, and they are stored under appropriate conditions.
- Hands-on training is provided on the use of PPE.
- The PPE can be adjusted for full compliance with the user.
- If more than one PPE is used together, PPEs are chosen in harmony with each other.
- Drying is not done in high temperature conditions.
- Cross contamination is avoided during storage.
- Personal PPEs are stored individually.
- Appropriate replacement PPE is provided.
- Different sizes of clothing are available.
- Worn or damaged PPE is replaced at the earliest opportunity.
- The PPE delivered is recorded.
- PPE is provided for visitors.

### 7.3. PPE Requirement for Subcontractor and Supplier

In the activities to be carried out within the scope of the subcontractor and supplier in the project, the conditions related to PPE are fully applied as specified in this document.

### 7.4. Employee Training

Use is allowed after the employees are given practical training on PPE. Trainings are renewed as updates are made on job-related application changes.

Training on PPE covers the following topics as a minimum:

- Information on legal regulations and procedure regarding PPE,
- Basic and job-specific PPE selection, use, storage, maintenance and disposal information in the workplace,
- Informing about workplace-specific hazards,
- Where and when it is necessary to use PPE in the workplace,
- Information on appropriate PPE.

### 7.5. Selecting of Personal Protective Equipment (PPE):

The selection of PPE is made depending on the results of the risk assessment carried out and it is selected taking into account the national and international standards (EN norms for European Union countries) in the country of study. It is suitable for working conditions and does not cause additional risks. It is user-friendly, ergonomic and suitable for needs.

The following points are taken into account in the selection of PPE:

- Individual protection capability of personal protective equipment (PPE),
- suitability for use,
- suitability for work,
- Compliance with standards,



- The suitability of PPE to prevent risks without creating additional risks.

#### 7.5.1. Employee Participation in PPE Selection

Field workers; Opinions are sought on the selection of PPE in order to improve the habits of using PPE, to reduce violations in this area, and to increase and support participation in HSE management processes. The selection of PPE is carried out in the light of feedback from the employees.

#### 7.6. CE Mark, TS EN Standards and PPE Categories

PPEs are evaluated in four categories to be used in their certification and their category numbers are "Cat." are indicated next to the abbreviation and shown above the relevant PPE. These categories are decisive in determining the level of protection compatible with the potential hazard.

The presence of the "CE" (Conformite European) mark on a PPE indicates that the product has been produced by the manufacturer in accordance with the mandatory requirements of the European Union regarding employee health, safety and environment.

The European Standard (European Norm - EN) numbers that it is compatible with are also included on the PPE. Whether a product complies with the EN standard is tested by authorized institutions and a certificate of conformity is given to products that comply with the standards. Based on this document, the CE mark is placed on the product and the four-digit code of the institution giving the approval is written next to it. These standards have been accepted as harmonized Turkish Standards (TS) by the Turkish Standards Institute.

The features described by the category numbers carried by PPE are briefly as follows:

Category 0: Personal protective equipment not covered by the Personal Protective Equipment Regulation.

Category - I: Personal protective equipment of a simple nature that is accepted by the designer to be self-assessable by the user, that provides protection against low-level risks that arise gradually and can be noticed in a timely manner.

Category - II: All personal protective equipment other than category - I and category - III

Category III : Group III: Complex personal protective equipment that protects against harmful risks which may cause grave and irreversible damage to health. Such equipment is designed to protect the user against critical risks that may not be foreseen and emerge in an instant.

#### 7.7. Personal Protective Equipment

Basic personal protective equipment (PPE) in the project consists of the following. In addition to these PPEs, different PPE usage is evaluated depending on the results of the work-related risk assessment.

**Table1** Basic PPE Table

| Personal Protective Equipment | Standards                            |
|-------------------------------|--------------------------------------|
| Reflective clothing           | TS EN ISO 20471                      |
| Helmet                        | TS EN 397 + A1                       |
| Foot Protectors               | TS EN ISO 20344, 20345, 20346, 20347 |
| Eye protectors                | TS 5560 EN 166                       |

|                                     |             |
|-------------------------------------|-------------|
| Protections from electrical hazards | TS EN 60903 |
|-------------------------------------|-------------|

## 7.8. Risk Based Personal Protective Equipment

Personal protective equipment (PPE) required for special work is determined according to the results of the risk assessment. It is used after training is given about the determined PPE.

Below are risk-based PPEs with specific jobs in mind.

### 7.8.1. Face Protection

The face shield protects the worker's eyes and face from impacts such as sparks, splashes and debris, chemicals, particles, molten materials, welding gases and fumes. Face shields that can be mounted on helmets are used in Renaissance workplaces.

Face shields are used in the following activities including but not limited to:

- Screening / grinding works
- Wire machine work
- Scrub
- Machining works
- Chemical usage
- Working with water jet

Face shields are also used when:

- If deemed necessary in the risk assessment,
- If it is obligatory in the instruction of the work done,
- If the chemical that can be used in the study is required in the material safety data sheet,
- If working with caustic chemicals and machinery lines and equipment containing them,
- When cleaning machinery, equipment, instruments or compressed air pipes,
- If there is a risk of splashing or spraying hot or high pressure dust, particles or chemicals in the work environment or equipment,
- If sanding, brushing, grinding, drilling and polishing works are carried out with an electric motor,
- If a stone or disc is used for cutting,
- If power-operated hammer tools are used,
- If washing and cleaning works are carried out with high pressure water or chemicals.

**Table2** Harmonized Standard Number and Protection Feature for Face Visor

| Harmonized Standard Number | Protection Feature                                                                                           |
|----------------------------|--------------------------------------------------------------------------------------------------------------|
| TS 6860 EN 175             | Protection against harmful optical radiation and certain hazards during weld cutting and similar operations. |
| TS EN 379+A1               | Changes the light permeability value to a lower predefined value when the arc source is fired.               |

### 7.8.2. Eye protection

Goggles and face shields should be used together to protect the eyes and face when working with particles, contact with chemicals, contact with irritating steam or smoke, and electromagnetic rays of different wavelengths.

In studies where eye and face protection must be used together, goggles are used to prevent the entry of air and dust sticking around the eyes.

Work requiring eye and face protection:

- Concrete breaking and separation works that will cause fragments to fly
- Drilling metals, shaping metal and cleaning the metal surface with a wire brush
- Hot work such as welding, cutting, grinding
- Metalworking with press and heat
- Bolting work
- Working with chipping machines
- Stone shaping and stone cutting works
- Studies involving acids, bases and their solutions
- Work that may cause contact with irritating vapor and smoke
- Studies that will create exposure to electromagnetic rays
- Separation and fragmentation studies of residues
- Spraying of abrasive substances

Eye and face protection methods:

- Use of goggles, glasses and visors sticking around the eyes
- Use of goggles and welder's visor sticking around the eyes

Work that requires eye and face protection together is done with goggles that prevent the ingress of air and dust sticking around the eyes. Eye protection is done with glasses that completely cover the eye area and are in full contact with the face. Eye protection has the EN 166 standard.

Dark glasses are not used at night and indoors.

Those who wear personal glasses use safety glasses with fixed front and side visors that are attached to the glasses.

**Table3** Harmonized Standard Number and Scope for Eye Protection

| Harmonized Standard Number | Scope                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TS 5560 EN 166             | Function-related features of different types of personal eye protectors.                                                                                                |
| TS EN 169                  | Scale number and permeability characteristics for filters intended to protect workers in brazing in welding work, opening arc welds, and cutting plasma fusion welding. |
| TS EN 170                  | Protection ratings and permeability of filters that protect against ultraviolet radiation.                                                                              |

|                |                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------|
| TS 8435 EN 171 | Scale numbers and permeability features related to filters that protect against infrared radiation. |
| TS EN 172      | Permeability and related properties of solar protective filters for industrial use.                 |

### 7.8.3. Body Protectors

Body protection includes the protection of hands, feet and skin against the following effects:

- Damages by abrasive and dermatitis-producing substances
- Absorption through the skin
- Radiant heat and cold
- Ionizing and non-ionizing rays
- Physical Damages

Special measures are taken to prevent the body temperature from falling below normal, depending on the climatic conditions in the working area. For this purpose, thermal underwear and thermal pants, thermal shirt and jacket or thermal overalls are used. Gloves, a thermal hat that will not prevent the use of a helmet, boots that are resistant to slipping and suitable for working conditions, a neckband that will prevent heat loss from the neck area are used.

Covering the whole body is used in the conditions and requirements of the project / operation or during the testing and commissioning phases. Coverall provides the standards required by the relevant work.

Fireproof glove providing fireproof standards during welding work; apron and leggings made of leather that is resistant to fire, radiant heat and hot metal strikes; Toe protection with long sleeves is used to prevent the entry of hot burrs.

If the work is to be done on the head, leather head and shoulder brace are used under the helmet. Welder clothes are made of dark, thick and wool, subject to EN ISO 11611 standard. The sleeves of the dresses and the legs of the trousers are buttoned or elasticated and without pockets against dust accumulation.

Gloves have descriptive or cautionary markings and numbers related to health and safety. By looking at these numbers, information about the protection level of the glove is obtained.

Clothing that covers the arms is used in the work area. The glove, which is impermeable to liquids, has long sleeves. Latex gloves are not used except for short-term and cleaning works.

General purpose gloves will protect from non-hazardous liquids, cuts and abrasions and provide a good grip.

For working under voltage, Class 4 insulating gloves made of plastic or derivative materials complying with the TS EN 60903 standard are used. Gloves are manufactured from insulating and elastic materials such as natural, synthetic or a mixture of rubber, elastic or latex (rubber raw material) There are no seams, cracks, holes, tears, mold marks, wrinkles, bubbles and patches on the insulating glove. Right and left hands are produced separately. During contact with energy-containing places, it is not enough to use insulating gloves alone, it is necessary to use an extra protective material.

Clothing and accessories such as watches, rings, earrings, tag, bracelets, chains, necklaces that provide energy transmission and cause consequences such as clinging, entanglement, and entanglement are not used during electrical work.



It is not allowed to enter medium voltage installations except the officer.

The following equipments are kept ready to be used for working in the medium voltage facility.

**Table4** Minimum PPE Table for Medium Voltage Plant Operation

| Personal Protective Equipment and Other Equipment | Standards     |
|---------------------------------------------------|---------------|
| Insulated Gloves                                  | EN 60903:2003 |
| Stanka                                            | TS EN 60855-1 |
| Helmet                                            | TS EN 397     |
| Isolated Shoes                                    | TS EN 20344   |
| Insulated Carpet                                  | TS EN 61111   |
| Isolated Stool                                    | TS EN 60243-1 |

**Table5** Glove Standards and Protection Features

| Harmonized Standard Number    | Protection Feature                                                                              |
|-------------------------------|-------------------------------------------------------------------------------------------------|
| TS EN 388                     | Mechanical Protection                                                                           |
| TS EN 374                     | Protection in Chemical and/or Microorganisms                                                    |
| TS EN 407                     | Hot Protection                                                                                  |
| TS EN 511                     | Cold Protection                                                                                 |
| TS EN 421                     | Protection from Ionized Radiation and Radioactive Transmission                                  |
| TS EN 407                     | Protection Against Heat Risks (Heat and/or Flame)                                               |
| TS EN 1149-5                  | Protective Gloves - Electrostatic Properties - Part 5: Material Performance And Design Features |
| TS EN 420+A1                  | Protective Gloves-General Characteristics-Test Methods                                          |
| TS EN 12477<br>TS EN 12477/A1 | Protective Gloves for Welders                                                                   |

Below these pictograms are numbers showing the level of protection. The following are the four criteria that determine the mechanical resistance and the numerical explanation showing the protection level for each criterion.

**Table6** Identification of Mechanical Resistance in Gloves

| TS EN 388 Mechanical Resistance                                                        |                        |   |                   |   |                 |
|----------------------------------------------------------------------------------------|------------------------|---|-------------------|---|-----------------|
| A: Rub resistance<br>B: Cut resistance<br>C: Tear resistance<br>D: Puncture resistance |                        |   |                   |   |                 |
|                                                                                        | Lightweight Protection | ← | Medium Protection | → | High Protection |
| A: Rub resistance                                                                      | 1                      | 2 | 3                 | 4 | -               |
| B: Cut resistance                                                                      | 1                      | 2 | 3                 | 4 | 5               |
| C: Tear resistance                                                                     | 1                      | 2 | 3                 | 4 | -               |
| D: Puncture resistance                                                                 | 1                      | 2 | 3                 | 4 | -               |

#### 7.8.4. Ear Protectors

Ear protectors are sleeve-type ear protectors that cover the ear and its surroundings, and earplugs that provide protection by placing them in the outer ear canal and closing this way.

Hearing protection is provided in an environment with noise of 80 dB and above. Ear protection is used when the noise level reaches 85 dB. Ear protectors are available for use in high noise areas (technical room, etc.).

Commonly used ear protectors are given in Table 6.

**Table7** Ear Protection Features

| Ear Protector Name                       | Specifications:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Photograph                                                                                                                                                                     |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard disposable earplugs             | It is disposable, which can be shaped by hand in soft spongy appearance, made of polymer, foam, quality plastic, silicone-like material. They provide an average of 15 - 30 dB of protection.                                                                                                                                                                                                                                                                                                                                                    |                                                                                             |
| Two or three flanged earplugs            | They are similar to standard earplugs. It has two or three nodes. It is used in environments where there is pressure effect as well as noise. The level of protection is the same as other spigots. Plugs used for a long time are washed and cleaned after use. Stored in a clean place.                                                                                                                                                                                                                                                        |                                                                                             |
| Individual earplugs                      | They are earplugs produced by measuring the external ear canal of the person who will use it in workplaces where the noise level is high and stable. It is made of silicone or biopor material. They provide protection between 20 - 35 dB.                                                                                                                                                                                                                                                                                                      |                                                                                            |
| Earplug suitable for external connection | Ear protectors suitable for external connection (speaker, receiver) are used when the noise level in the environment is high but it is necessary to hear external warnings.                                                                                                                                                                                                                                                                                                                                                                      |                                                                                           |
| Earmuff type headphones                  | <p>Earmuff type ear protectors that completely cover the ear, are ear protectors that provide protection from the noise that can reach the ear through the bone in environments where the noise is very high, by covering the ear and the bone structures around the ear.</p> <p>There are also helmet mounted ones and those with buttons for adjusting high and low frequency sounds.</p> <p>In places where the noise level is very high, combined use of earplugs and sleeve type ear protectors or helmet type ear protectors are used.</p> | <br> |

The protection level of the ear protection used is related to the correct use of the ear protection. For this reason, employees who wear ear protection are provided with training on the correct placement and use of the ear protection, and training records are kept.

All ear protectors are selected in accordance with EN 352 standard.

Earplug Insertion:



1. After the hands are thoroughly cleaned, the earplugs are rolled between two fingers and thinned thoroughly.
2. The ear canal is opened by pulling the ear with the other hand. The thinned earplug is pushed well into the ear canal.
3. The earplug, which is completely placed in the ear canal, is pressed for 30 seconds and allowed to swell inside and take the shape of the ear folds.
4. Having all the earplugs inside is essential for full protection.

#### 7.8.5. Fall Protection

In order to provide fall protection in the project, collective protection measures are applied first in accordance with the requirements of the MAOG-RECU-GN-GNL-IS-GNL-PRG-00015-0 Working at Height Procedure, and personal fall protectors are used in cases where the risk of falling cannot be brought to an acceptable level with collective protection measures.

Parachute type safety belts are used as personal fall protection in the project. Parachute type harnesses include lugs, fasteners, fasteners and other elements suitably assembled and arranged to support a person's entire body and hold the wearer during a fall and after fall prevention.

Parachute type seat belts alone are not sufficient for personal fall protection. Parachute type harnesses are used as a system with attachment equipment (different types of lanyards, positioning belts, retractable fall arresters, shock absorbers if needed, etc.) and anchor points or lifelines. It is ensured that all components are compatible with each other for the safe and efficient use of personal fall protection systems. Necessary information, controls and inspections in this regard are carried out by the project HSE Units. All components of this system are provided and shown to the employees along with the parachute type seat belt.

Personal fall protection systems can be used for fall arrest and fall prevention purposes.

##### 7.8.5.1 Parachute Type Safety Belts,

The most basic parachute type safety belts to be used for fall arrest purposes comply with the EN 361 standard. In addition, it is recommended to have the EN 358 standard in order to reduce the degree of injury in case of falling and to provide the opportunity to be positioned at a height. The marking on the parachute harness system includes the following:

- A pictogram on the full body harness system indicating that users should read the information provided by the manufacturer
- The letter "A" on each fall arrest fastener
- Model / type designation mark of the full body belt system
- The number of the standard; EN 361
- CE mark and the 4-digit code of the approved body granting this conformity
- Batch Number

In the case that parachute type safety belts are used for rope access and rescue purposes as well as for fall arrest purposes, it is ensured that they comply with EN 358 and EN 813 standards in addition to the EN 361 standard.

Before the parachute type safety belt is used, a visual control is carried out by the employees, including the following elements. Appendix - 2 Safety Belt Visual Control Form can be used for visual controls.

If any of the following is detected, the belt is not used.



- Change in the natural color of the belt,
- Wear of perlon (cuts, tears, thinning, melting, wear, chemical substance contact),
- Removing the belt seams,
- Inability of the buckles to fulfill their functions,
- Deformation of metallic parts,
- Cracks, cracks, corrosion, material losses and rough layers on metallic parts and
- Color code/label etc. of the relevant month. absence.

If there is a possibility of falling from a height due to the work and working environment of the employee, personal fall protection systems are definitely used.

Anchor points, one of the components of personal fall protection systems, are not considered a part of PPE, but they are important in preventing falls. It is the point where the employee can securely attach himself. It is so high that it does not come into contact with the lowest level that the employee can fall. Anchor points or lifelines are chosen above the employee's shoulder level.

The connection equipment is the element between the parachute type seat belt and the anchor connection. Lanyard, shock absorber, retractable fall arresters are examples of attachment equipment. In case of connection to a fixed anchor point, that point must be resistant to the impact of the fall.

#### 7.8.5.2 Working Positioning Belt

It serves to keep the employee fixed in a certain position and at a certain distance from the work area. It supports the employee, making him/her feel safe in the hanger and using both hands comfortably. Working positioning belt complies with TS EN 358 standard. The work positioning belt is designed to ensure the safety of the user in his/her workplace position or to prevent (hold) the user from taking a position where a fall could occur. The positioning system is adjusted at a point above the employee's waistline and at the appropriate tension for positioning. The positioning system is not a fall arrest system. For this reason, the employee must always secure himself with a fall arrest system.

#### 7.8.5.3 Lanyards (Extension ropes)

Lanyards, one of the components of personal fall protection, are considered as personal protective equipment. Lanyards comply with EN 354 standard.

Lanyards are equipment that connects the user's seat belt and attachment point as an interconnecting element. Freedom of movement is important when choosing a lanyard. In terms of material structure, there are varieties in the form of fiber, braided rope and wire rope. Lanyards can be attached to the Safety belt alone or used as a system with an energy absorber. The total length of the subsystem combined with the lanyard containing the energy absorber, ends and fasteners should not exceed 2 meters. However, the length of the lanyard is determined depending on the result of the risk assessment to be made.

The model / type identification mark on the lanyard must be the number of the relevant standard (EN 354). The types of lanyards according to the place to be used are as follows:

- Double arm shock absorbing lanyards: During the work done at height with the parachute type safety belt, it absorbs the energy that will occur with the first impact force on the personnel who have fallen, by gradually opening them, thus minimizing the damage to the person's body. Thanks to its double arm feature, it provides safe passage and working opportunity from one connection point to the other connection point. The purpose of using a double lanyard is to ensure that the system is always connected. Ensuring that the lanyard is always taut will reduce the fall distance.

Adjustable lanyards; Used for positioning and delimitation.

- Lockable adjustable lanyards; It is used for working on poles and concrete poles.



**Figure2:** Lanyard Types

#### 7.8.5.4 Energy Absorbers (Shock Absorbers)

Shock absorbers are personal protective equipment designed to reduce the impact on the body of the person who falls during a fall from a height. Shock absorbers are tested according to EN 355 standard. It reduces the shock effect that the worker falling from a height will be exposed to. Although there are different types, it generally consists of a single piece of perlon sewn on top of each other. While the load is imposed, these stitches open in turn, absorbing the incoming energy and reducing the person's fall speed. If the total length of the system is greater than the working height when the shock absorber is opened, it creates additional risk for the worker and causes the worker to hit the ground. Therefore, in case of using a shock absorber, it is important to calculate the possible fall distance in order to avoid contact with the ground in case of a fall. For detailed information see MAOG-RECU-GN-GNL-IS-GNL-PRG-00015-0 Procedure for Working at Height section 7.2.2. See the section on Fall Arrest Equipment.

During the use of shock absorber, the manufacturer's instructions are taken into account, the working place and conditions are taken into account. The braking force of the shock absorber containing the coupling device will be less than 6 KN. Braking force is the maximum force measured during falls and falls from height.

The use of shock absorbers is mandatory whenever the total length of the system is less than the working height. In these cases, deactivation of the shock absorber is not allowed.



**Figure3:** Shock Absorber

#### 7.8.5.5 Retractable Fall Stoppers

It is a fall arrester with a self-locking function and an automatic tensioning system and a rewind fastening device. Tested according to EN 355 standard. The lashing device to be used with the retractable fall arrester is wire rope, braid or synthetic fiber rope. It is used in work done in mobile cranes and in work at height in industrial areas.



**Figure4:** Retractable Fall Stoppers

#### **7.8.5.6** Periodic Inspection of PPE Used for Fall Protection

PPE used for fall protection purposes has instructions for use, maintenance and periodic inspection in the official language of the country where it is offered for sale. Periodic inspection is carried out by a trained and assigned specialist.

Periodic inspection follow-up “Annex 4: Periodic Inspection and Maintenance Log” is recorded and followed up.

#### **7.8.6.** Respiratory Protective Equipment

Risk assessment results are taken into account in the selection of respiratory protective equipment. However, in the presence of hazardous dust, gas, vapor, spray as chemical or particulate in the working environment and/or in case the oxygen ratio in the air falls below 19.5%, it uses respiratory protection.

Respiratory devices fall into two basic groups:

##### **7.8.6.1** Filtering Devices Qualified as Dependent on Ambient Atmosphere

They are designed according to the principle of breathing existing air. It is divided into unsupported and assisted systems.

Unassisted systems: Filters to be used with full face mask, half mask and quarter mask or mouthpiece assembly are divided into three basic subgroups as face shield parts and self-recovery device. Grouping was made according to the type of face protection systems.

Assisted systems: Air-assisted filter devices including a full-face mask, half-mask, or quarter-mask are included in the scope of assisted systems. Although there is no oxygen deficiency in the ambient atmosphere, there is a situation arising from the need for fresh air supply support due to the density of pollutants.

Assisted and unassisted filtration device systems provide protection only for limited concentration ranges of known contaminants in the worker's breathing zone. The filters contained in these respirators may be intended to protect against particles, gases/vapours, or both. Such respirators do not protect against oxygen deficiency.

### 7.8.6.2 Respiratory Apparatus Qualified Independent of Ambient Atmosphere

These types of respirators are systems in which the supply of fresh air to the worker is essential instead of existing exhaled air. These systems are classified as “Closed circuit breathing apparatuses”. Closed circuit breathing apparatuses are divided into 6 groups.

**Rescue device:** It is often used by rescue teams in underground mines and fire brigades. The working principle of the device is that the exhaled breath first absorbs the vapor and carbon dioxide while passing through the filter (alkaline cabin), then the oxygen that is lost while the breath passes into the bag is completed through the tube and then passes through the cooler and enters the mask.

**Device with chemical reaction (oxygen generating):** It is used in cases where toxic gases are present or the oxygen rate in the atmosphere is below 19.5%. The working principle of the device is that the clean air passing through the canister, which absorbs the carbon dioxide and vapor in the exhaled breath and gives oxygen to the mask as a result of chemical reaction, enters the mask after cooling in the breathing bag.

**Pressurized oxygen cylinder device:** It has the same usage area as the chemical reaction (oxygen generating) device. It can be used for ½ hour in the environment where there is no oxygen, harmful, toxic gas and vapor. The device assembly consists of a pressurized oxygen cylinder, a regulated oxygen flow regulator, and a full face mask with a flexible hose at the end. During exhalation, the oxygen flow is cut off, preventing the oxygen in the tube from being consumed quickly, thus providing a longer lifespan of the oxygen tube.

**Compressed clean air cylinder device:** Device; flexible hose, airflow regulator and full face mask. It is used in the atmosphere where there is a risk of explosion against oil vapors and where the oxygen used may increase the danger.

**Mask with hose connected to compressed air network:** It is generally used in places where the atmosphere is polluted or oxygen deficient (tankers, silos, sewers, sewers). Filtered compressed clean air from the compressor comes to the mask of the employee using a durable and flexible hose.

**Mask with tube without air transmitter:** It consists of a full-face mask and a flexible hose long enough to provide clean air in harmful and toxic environments from a maximum distance of 7.5 meters. Fresh air enters the mask through the hose with normal breathing.

**Table8** Masks and Protection Features

| FF: Face Filter (face mask) |                                                                                                                                                                                                                                                             |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mask                        | Protection Features                                                                                                                                                                                                                                         |
| P1                          | Powders without toxic particles                                                                                                                                                                                                                             |
| P2                          | All dusts that can cause cancer, aerosols, iron dust, sawdust dust, chipboard dust, mdf dust                                                                                                                                                                |
| P2 (Private)                | It is used against water and oil-based toxic dust, moisture and smoke, acid gases, harmful organic leaks. They are designed to get rid of the irritating effects of certain gases and vapors at low levels in the environment as well as harmful particles. |
| P3                          | All toxic dusts, viruses, bacteria, enzymes                                                                                                                                                                                                                 |



## 7.9. Personal Protective Equipment (PPE) Registration List

In the project, it is essential to record and follow up category - III personal protectors. The critically important PPEs are recorded separately in the Annex 3 - Personal Protective Equipment Record List with the following details as each sub-component that can be separated and added, and the existing inventory is kept regularly every 3 months, except for the supply of new equipment, when any equipment is out of use and apart from these. updated periodically.

- Product model, type / identity and trade name,
- Manufacturer or authorized representative name and contact information,
- Identity information (lot or serial number)
- Where applicable, date of manufacture or expiration
- Date of purchase
- Other required information (example maintenance and frequency of use)
- Usage start date.

### 7.9.1 Personal Protective Equipment Matrix

In the project, it creates a PPE matrix to guide the selection of work-related Personal Protective Equipment (PPE). If the source of the hazard is a chemical, the safety precautions included in the chemical's safety data sheet in the matrix are also taken into account. Required PPE is added to the matrix according to the manual of the equipment used.

The PPE matrix enables the definition of workplace-specific minimum PPE and guides the selection of PPE against potential business risks. With the PPE matrix, it is ensured that more than one work-related hazard is taken into account.

## 7.10. Control and Maintenance of Personal Protective Equipment (PPE)

Manufacturer or supplier with personal protective equipment in Turkish or in the official language of the working country; Provides operating, maintenance and inspection manual. Care instructions are clear, legible and understandable. It contains the necessary details. Defective or damaged PPE is kept out of use and recorded.

The maintenance instructions contain the following information:

- Disinfection and cleaning processes that will not harm the material used and the user,
- Whether it will be used in case of getting wet and how it should be dried if it will be used,
- Storage conditions (humidity, sharp edge, vibration, etc.)
- Other hardware-related maintenance.

Maintenance and cleaning of PPE is carried out as and as often as specified in the manufacturer's or supplier's manuals.

### 7.11. Storage of Personal Protective Equipment

Personal protective equipment is stored in accordance with the manufacturer's or supplier's instructions. Stored clean and fully operational. PPE is stored in such a way that it is not exposed to physical and chemical damage. Storage is done in such a way that information about the continuous PPE stock amount can be obtained. It is disposed of when the use and shelf life of PPE is exceeded.



The manufacturer prepares usage, maintenance and periodic inspection instructions for each piece of PPE and hardware in Turkish or in the official language of the country of operation, and if repair permits, a repair instruction is prepared. These instructions are stored with the PPE for use when needed.

## 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.

## 9. RELATED FORMS

APPENDIX A – Feedback Form

APPENDIX 2 – Safety Belt Visual Control Form

APPENDIX 3 – Personal Protective Equipment Registration List

APPENDIX 4 – Periodic Inspection and Maintenance Log

## APPENDIX 1– FEEDBACK FORM

| User Feedback Page                                                                                                                                                                                                                                                                                |                                                                        |             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------|--|
| <p>When the user identifies an inaccuracy, error or uncertainty in the document, he notifies the person responsible for the document so that the necessary action can be taken. The user is asked to clearly state the changes he proposes and to return by filling out this page completely.</p> |                                                                        |             |  |
| <b>User Name</b>                                                                                                                                                                                                                                                                                  |                                                                        |             |  |
| <b>Document No</b>                                                                                                                                                                                                                                                                                |                                                                        | <b>Date</b> |  |
| <b>Page Ref.</b>                                                                                                                                                                                                                                                                                  | <b>Brief Description of Required Changes / Corrections and Reasons</b> |             |  |
|                                                                                                                                                                                                                                                                                                   |                                                                        |             |  |
|                                                                                                                                                                                                                                                                                                   |                                                                        |             |  |
|                                                                                                                                                                                                                                                                                                   |                                                                        |             |  |
|                                                                                                                                                                                                                                                                                                   |                                                                        |             |  |
|                                                                                                                                                                                                                                                                                                   |                                                                        |             |  |
|                                                                                                                                                                                                                                                                                                   |                                                                        |             |  |
|                                                                                                                                                                                                                                                                                                   |                                                                        |             |  |
|                                                                                                                                                                                                                                                                                                   |                                                                        |             |  |
| <b>Submit this Page:</b>                                                                                                                                                                                                                                                                          | <b>Person in Charge or Corporate OHS – E Management Department</b>     |             |  |