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PERSONAL PROTECTIVE EQUIPMENT PROCEDURES

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1.0 INTRODUCTION

This document has been developed to ensure the selection of the most suitable equipment according to relevant Standards as well as to help provide guidance on the use of Personal Protective Equipment (PPE) for specific tasks. Applicable British Standards are provided as a reference. Other equivalent European standards (EEC or Country - specific) are also acceptable.

As part of ALASALA CO. H.S.E Department Improvement Plan, an employee involvement approach has been formally introduced in the process of choosing and selecting the PPE. A newly established PPE Specifications Committee with an employee representation will ensure that the best choices are made when it comes to the acquisition of PPE.

The PPE Specifications Committee will be empowered to decide on which type and brand of PPE to order. Its decisions will be based upon agreed business principles such as conformity to approved standards, fitness for purpose, cost/benefit analysis, availability, etc.

Furthermore, the purpose of the Procedure is to provide a consistent and effective personal protective clothing & equipment procedure.

2.0 SCOPE

Personal Protective Equipment is required when there is a reasonable probability of injury that could be prevented by the use of such equipment. In such case, ALASALA CO. H.S.E Department will make available suitable protection for the work to be performed, and employees must use such protection.

Contractors, Vendors and Client personnel working within ALASALA CO. Fabrication Project must provide their employees with suitable Personal Protective Equipment. Such equipment must be up to an acceptable International/European standard.

No person shall knowingly be subjected to a hazardous environmental condition without suitable Personal Protection Equipment.

This procedure applies to all personnel working within the ALASALA CO. H.S.E Department facilities.

The Procedure is applicable to all situations where the ALASALA CO. H.S.E Department Management Team is responsible for the implementation of a HSE Management System.

3.0 RESPONSIBILITIES

3.1 PPE Specifications Committee

The PPE Specifications Committee is composed of:

- Procurement Department Representative (Chairman)
- Health, Safety & Environment Department Representative (Secretary)
- Construction Representative
- Maintenance Representative
- QA/QC Representative

The PPE Specifications Committee will not hold it's meeting unless all specified members are present.

The employee representatives will be replaced on a yearly basis or in case of their unavailability.



The PPE Specifications Committee may, at its discretion, invite other people whose expertise or experience based opinion is deemed useful.

The committee's role consists of the following:

- Reviewing the performance and quality of proposed types of PPE prior to the acquisition of any new stock.
- The committee should base its review upon actual field experience or test of the proposed PPE. A sufficient amount of samples should be tested in relevant work situations whenever new products/brands are considered. Enough time should be allowed for adequate quality data and feedback to be collected from the field tests.
- The committee should apply a cost/benefit approach before reaching its final decision. Parameters such as the risk, the degree of protection required, and expected lifetime (short, medium or long term) of the PPE should be considered.

3.2 Assistant General Manager (Procurement)

- It is the responsibility of the Assistant General Manager (Procurement) to establish the PPE Specifications Committee and convene it prior to ordering any PPE.
- The Assistant G.M. (Procurement) will ensure that a sufficient number of samples are acquired from the vendors to allow actual field tests of the new PPE products/brands.
- The Procurement Department representative will chair the PPE Specifications Committee.
- It is the responsibility of the Assistant G.M. (Procurement) to purchase the PPE as per the attached specifications and in accordance with the PPE Specifications Committee's choice whilst ensuring that this has been reached based upon agreed business principle.

3.3 Health, Safety and Environmental (HSE) sector Manager

The HSE sector Manager will participate or designate his representative to take part in the PPE Specifications Committee work.

The HSE Department representative will ensure the secretarial role within the Committee and will be, therefore, responsible for issuing and filing the committee's meeting minutes and action logs.

It is the responsibility of the HSE sector Manager to ensure that the PPE samples are tested in relevant work situations and that the resulting feedback is communicated to the Committee.

It is the responsibility of the HSE sector Manager to periodically review this procedure.

3.4 Assistant General Manager (Project Fabrication)

The Assistant General Manager (Project Fabrication) is responsible to designate one representative from the Construction staff to participate in the work of the PPE Specifications Committee.

3.5 Assistant General Manager (Maintenance)

The Assistant General Manager (Maintenance) is responsible to designate one representative from the Maintenance staff to participate in the work of the PPE Specifications Committee.



3.6 General Manager (QA/AC)

The General Manager (QA/QC) is responsible to designate one representative from the QA/QC staff to participate in the work of the PPE Specifications Committee.

3.7 Stores Manager

It is the responsibility of the Stores Manager to maintain an adequate stock of PPE. The approval of the PPE Specifications Committee must be obtained prior to any ordering of PPE.

3.8 H.S.E General Manager

The H.S.E General Manager is responsible to implement a system whereby all PPE purchase requests are automatically identified and the PPE Specifications Committee's approval is required before the requisition can be processed.

4.0 APPROACH

4.1 Dress Code

Some applications in the Fabrication & Construction Industry require fire retardant clothing to be worn as the outer garment for Welders in addition to other specialized Personal Protective Equipment. The following are guidelines for everyday dress for employees working on projects under the jurisdiction of the H.S.E Department.

4.1.1 Personal Protective Equipment "PPE"

Employees shall wear Personal Protective Equipment (PPE) as required for the specific tasks they perform. Specific requirements for PPE are further defined in this section.

It is the responsibility of contractors to supply PPE for their personnel. Manufacturer's recommendations, MSDS's and any applicable accompanying paperwork must be consulted to determine the type, standard and style of PPE to be used.

4.1.2 Clothing

Shirts shall have a flap type collar and at least half sleeves. Long sleeve shirts may be required on some tasks. T-shirts, tank tops and sleeveless shirts are prohibited.

Clothing shall be in good condition and loose fitting clothes are to be avoided. Trousers with large flared bottoms or with frayed hems at the leg are strictly prohibited.

Clothing made of synthetic materials is not recommended, as these materials are very easily ignited, readily support combustion and cause unnecessary sweating.

Shirttails shall be kept tucked inside the trousers. **EXCEPTION: WELDERS MAY WEAR THEIR SHIRTTAILS OUT UNLESS THEY ARE OPERATING ROTATING POWER TOOLS, SUCH AS GRINDERS AND THREADING MACHINES.**

4.1.3 Footwear

Safety toed shoes are mandatory.

Shoes or boots must be constructed of leather. Shoes or boots made of canvas or synthetic materials are not allowed.

Tennis shoes, athletic type shoes, sandals or open toed shoes are not allowed regardless of the type of



materials they are constructed of.

Employees operating paving breakers, jumping jacks, and sand tamps shall wear metatarsal guards.

4.1.4 Hair

Hair longer than shoulder length shall be restrained either by a hair net or by tucking it beneath the hard hat.

Employees required to use respiratory protective equipment to perform their duties must be clean-shaven in the respirator seal area of the face. **NOTE: SOME JOB DESCRIPTIONS REQUIRE THE EMPLOYEE TO BE CLEAN-SHAVEN IN THE RESPIRATOR SEAL AREA EVERY DAY.**

4.2 Personal Protective Equipment (PPE)

4.2.1 Head Protection

Employees shall wear an approved hard-hat at all times on work sites except in administrative office and lunch areas during non-work period. During breaks taken on the site all personnel must keep their hard-hat on. This is a non-negotiable condition for access to the Company Property.

Hard hats shall not be altered in any fashion and defective hard hats shall be replaced immediately.

Hard hats shall be worn with the peak facing forward unless signaling cranes or looking up to carry out effective work methods.

4.2.2 Eye/Face Protection

Safety Glasses (APPROVED) with side shields shall be worn.

Street wear impact resistant glasses are not approved.

Personnel who require prescription glasses to perform their daily work activities shall wear approved safety prescription eyeglasses with side shields or over-glasses.

Welders shall be required to wear safety glasses or goggles under their welding hoods.

4.2.3 Additional Protection for Specific Operations

4.2.3.1 Mono-goggles.

As a rule safety glasses will not provide adequate protection for operations which involve hazardous chemicals in liquid form, such as acids and caustics or operations which generate airborne particles, such as dust or insulation fibres which remain suspended in the air for considerable periods of time. For this reason employees involved in these operations shall be required to wear chemical splash type mono-goggles to obtain proper protection. Mono-goggles are required for, but not limited to, the following operations:

- Operators of power actuated tools (Hilti guns, Omark, Ramset, etc.).
- Operation of skill saws, table saws and other wood working tools.



- Operators of impact wrenches and employees holding back-up wrenches during impacting operations
- Employees performing a task or working in areas where operations create large amounts of suspended airborne particles such as dust or fibers. Examples of these operations are: -
 - Insulation installation or demolition
 - Abrasive (grit)-blasting operations
 - De-scaling or de-coking operations
- Handling any chemical liquid or solid which is an eye irritant such as acids, caustics, solvents, etc.

4.2.3.2 Mono-goggles and Face shield.

Many operations we perform generate high velocity flying particles which can injure the face and which can rebound off of other objects and enter the eye from the side. In these conditions safety glasses do not provide adequate protection. For such operations, employees shall use mono-goggles and a face shield. Examples of these type of operations include, but are not limited to, the following:

- Use of grinders, hand held and pedestal mounted, regardless of the type of attachment
- Use of powered chipping devices such as chipping guns, rivet busters, pavement breakers, etc.
- Any employee involved in concrete breaking operations including the operators of equipment mounted breakers
- Use of high pressure air or water for cleaning purposes such as blowing out concrete forms prior to a pour
- While performing battery charging operations or while jump starting equipment

4.2.3.3 Burning/Welding Goggles

Approved burning/welding goggles with a minimum of a Number 4 filter lens shall be worn by all employees operating gas fired cutting and welding equipment which include:

- Cutting equipment, hand held or track mounted and including beveling machines.
- Rose buds, brazing and welding torches.
- Employees performing arc-welding operations shall wear an approved welding helmet with an appropriate filter shade for the type of welding they are performing. **SAFETY GLASSES MUST BE WORN BENEATH WELDING HELMETS WHILE PERFORMING ARC WELDING OPERATIONS.**

4.2.4 Hearing Protection

Employees involved in high noise level operations and/or working in high noise level areas shall wear approved earplugs or other approved hearing protectors.

As a rule, if the surrounding noise level makes conversation at normal levels impossible with persons within approximately 3 feet (1m.) of your hearing protection is needed.

Individual contractors on the job site for their employees' use shall maintain hearing protection in the form of earplugs (minimum).

4.2.5 Respiratory Protection



Employees, who in the course of employment are or may be exposed to real or potential respiratory hazards including, but not limited to, the following shall wear respiratory protective equipment appropriate to the hazard:

- Airborne contaminants such as dust, fibers and particles.
- Hazardous or toxic fumes, mists, vapours or gases.
- Oxygen deficient atmosphere.

Employees required to wear respirators shall be trained in the use, care, and limitation of the particular respirator they must use. Employees shall be pulmonary function tested prior to use of any respirator.

Employees required to wear respirators shall be clean-shaven in the respirator seal area of the face.

4.2.6 Hand Protection

Employees shall obtain and wear gloves, where they do not pose a hazard, to prevent hand injuries.

Employees should avoid wearing gloves when operating drill presses and like power tools as the gloves can become entangled in the tools causing injury.

Employees handling materials or chemicals that are toxic or skin irritants shall wear impervious gloves applicable to the hazard present.

4.2.7 Impervious Clothing

Employees involved in work activities which will or may expose them to chemicals and/or toxic or irritating substances which will cause harm on skin contact (e.g., caustics, acids, phenol, etc.) shall wear impervious clothing applicable to the exposure. This clothing shall include gloves and footwear.

4.2.8 Fall Protection

Employees exposed to falls from a height in excess of 2 metres shall wear and correctly use an approved harness/lanproject.

An employee will be considered exposed to a fall if not protected by a complete deck and standard guardrail system.

Employees working on permanent structures such as concrete floors, grating platforms or catwalks which are free of floor openings or open sides, and all fall protection devices such as guardrails and safety gates on ladders are in place are not required to wear harnesses.

Employees working on any structure in which fall exposures have been created such as open holes in the floor or removal of guardrails shall wear harnesses. Employees working within 2m. (6 feet) of said fall exposures shall secure the safety lanproject properly to the highest point possible which allows full movement during work.

Employees working from temporary work platforms (scaffolds) shall wear a safety belt/harness if the platform is 2m. (6 feet) or more tall. If the platform has a completed deck and guardrail system, the safety lanproject need not be secured. If any portion of the decking is missing or the guardrail system is incomplete all employees working from the incomplete platform shall secure their lanproject properly to a robust part of the structure or taught lifeline. This should be at the highest point possible, which allows full movement during work.

4.2.8.1 Correct Use of Harnesses/Lanprojects.



The following points will be adhered to:

- Employees shall inspect their safety belt/harness/lanproject for defects or signs of deterioration each day
- Harnesses shall not be altered in any way such as the punching of additional holes
- Harnesses used for fall protection shall not be used for work positioning. Any belt/lanproject subjected to any load other than testing shall be removed from service.
- Employees shall secure their safety lanprojects when required in the following way: -
 - i) Place the D-ring in the middle of the back. Secure the shock absorber end of the lanproject to this d-ring.
 - ii) Secure the lanproject to a lifeline or structure capable of supporting 5400 lb. (2450 Kg).
 - iii) Secure the lanproject as far above the point of operation as possible, but always limit the potential fall distance to less than 6' (1.8 metres).
 - iv) When the lanproject is secured the safety latch on the lanproject snap shall be fully closed in order to prevent accidental dislodgment.
 - v) **HOOKING THE SNAP OVER THE FLANGE OF A BEAM IS NOT CORRECT AND SHALL NOT BE ALLOWED.**

4.2.9 Lifelines

Vertical lifelines shall be made of 5/8 polypropylene rope and be attached to a structure capable of supporting 5,400lb. (2450 Kg).

Lanprojects shall be attached to lifelines by means of approved rope grabs such as the LAD-SAF 58 or equivalent. Lanprojects shall not be attached to lifelines by means of loops or knots in the lifeline.

If Horizontal lifelines are to be used for fall protection by attachment of lanprojects, they shall be constructed of materials and supporting structures capable of supporting 5400lb.

4.3 Respiratory Protection Equipment (RPE)

This program provides the procedures for proper use, and care of respiratory equipment.

This program shall not be used as a substitute for generally accepted ALASALA control measures against air contaminants.

4.3.1 RPE General Notes

Respirators shall be worn at all times where work is necessary in contaminated or oxygen deficient areas.

The employee shall use the provided respiratory protection in accordance with instructions and training received.

Persons shall not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work when utilizing the equipment.

4.3.2 Selection of RPE

Contact the Safety Department for the selection of respirators.

Air Line Masks or Self Contained Compressed Air Breathing Apparatus Units rated for at least 30



minutes service time shall be used for routine entry into an atmosphere that is rated or has the potential for toxic and low oxygen level.

Fifteen minute units shall be used only for emergency egress and not for rescue work or re-entry.

Only the following respiratory protective apparatus shall be used in oxygen deficient atmospheres or where the contaminant is or might be immediately dangerous to life.

- Self contained breathing apparatus, of 30 minutes or greater capacity with 5 minute warning alarm.
- Combination air line respirator and self-contained breathing apparatus. (You are connected to a separate air source plus an escape bottle such as a Scott SKA-Pak).
All self-contained breathing apparatus shall have a "remaining service life" indicator and alarm for low breathing air (except units rated only for escape).

When the device is a combination self-contained breathing apparatus and air line respirator, either a manual or automatic valve shall be provided to change to the self-contained air supply, if the air line supply fails. **(Know its operation)**

4.3.3 RPE Precautions

An effective seal between the face piece and face to prevent inward leakage must be obtained. Demand type respirators operate under negative pressure when the wearer inhales; thus some inward leakage of contaminant may be possible. If the temple bars of eyeglasses extend through the sealing edge of full-face mask, a proper seal cannot be obtained. The wearer's use of spectacles or goggles should not interfere with the use of a half mask.

A heavy beard or sideburns may interfere with obtaining a proper seal. Where the use of respirators is required, restrictions on facial hair shall be established.

Respirators usually provide a satisfactory pathway for speech transmission over short distances in relatively quiet areas. An alternate form of communication between workers shall be established where respirators are used in noisy areas.

Pure oxygen shall not be used in supplied air respirators. Although self-contained breathing apparatus have no concentration limit, many toxic gases are flammable. Working in or near the flammable range of a gas or vapor is prohibited. The SWM for Confined Space Entry and/or "Hot Work" procedures shall be observed.

4.3.3.1 Respirator Care

A centralized maintenance, cleaning and storage station shall be used to care for RPE. Procedures applicable to all respirators are as follows:

- Inspections of self-contained breathing apparatus shall be carried out and recorded monthly. This is to be done before each use and during periods of storage. (A separate form is used).
- When replacing worn or deteriorated parts, only those made specifically for the device shall be used and the repair work shall be recorded.
- Respirators issued for the exclusive use of one worker should be cleaned after each day's use, or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and



disinfected after each use. Documented cleaning records shall be kept.

- Respirators shall be stored in a convenient, clean and sanitary location; preferably airtight protective plastic bags.

4.3.4 Issuance of Respirators

Respirators shall only be issued by trained personnel and in accordance to these procedures.

Personnel selected to wear respirators shall be physically suited to such work. Employee's physical eligibility/ineligibility testing, including pulmonary function tests, shall be documented in the employee's individual Medical Record before their initial respiratory training. Respirators shall be logged out using the Respirator Issuance Log.

4.3.5 Special Procedures for Maintenance, Cleaning, Disinfecting, and Storage of Respirators.

The following procedures apply to the equipment specified.

- **Self-Contained Breathing Apparatus (SCBA)** - Cylinder pressure should be checked at least monthly and brought to rated pressure if necessary. SCBA shall be recharged after each use.
- **Pressure Demand Regulator** - If any air line mask uses a pressure demand regulator, it must be serviced by a qualified technician after every use.
- **Airline Respirators** - The complete system should be checked after each use.
- **Escape BA Sets** - Frequent inspection is the most important phase of the maintenance program with this type of equipment, for it must always be ready even though seldom used.
- **Mechanical Filter Respirators** - Filters of the "throw-away" type should be discarded when the breathing resistance becomes bothersome to the wearer.

Some mechanical filter respirators use filters that can be cleaned, in which case the filters are cleaned at the same time the respirator is being serviced.

- **Training** - The worker shall be instructed and trained in the proper use of respirators and their limitation. For safe use of any respirator, it is essential that the worker be properly instructed in its selection, use and maintenance.

Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator shall be worn and how to determine if it fits properly.

- **Air Quality** - Air supply shall be free of harmful quantities of contaminants.

Compressed Oxygen shall not be used in supplied air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen must never be used with airline respirators.

Breathing air may be supplied to respirators from cylinders or air compressors. Cylinders must have a sticker stating "Certified Breathing Air" and dated.

The compressor that is supplying the air shall be equipped with necessary safety and standby devices. An alarm shall also be installed to indicate imminent compressor failure and/or over heating.

A breathing air type compressor shall be situated so as to avoid entry of contaminated air into the system.



If an oil-lubricated compressor is used, it shall have a high temperature or carbon monoxide alarm to insure that the air supply meets the specifications.

Air purifying absorbent filters (water traps) shall be installed between the compressor and user.

Carbon monoxide monitoring should be by in line, continuous audio/visual alarm. However, if this is not possible then manual CO testing (Draeger Hand Pump, "Dead-stop Detector," etc.) must be done twice daily, at beginning of job and also after lunch or break. Users must be instructed to stop operations when anything unusual is detected or if they experience headaches.

- **Air Receivers**

General Requirements - All new air receivers installed shall be constructed in accordance with the 1988 edition of the A.S.M.E. Boiler and Pressure Vessel Code Section VIII, Div. 1.

Installation - Air receivers shall be so installed that all drains, hand holes and manholes therein are easily accessible. Air receivers should be supported with sufficient clearance to permit a complete external inspection and to avoid corrosion of external surfaces. Under no circumstances shall an air receiver be buried underground or located in an inaccessible place. The receiver should be located as close to the compressor or after-cooler as is possible in order to keep the discharge pipe short.

Drains and Trap - A drainpipe and valve shall be installed at the lowest point of every air receiver to provide for the removal of accumulated oil and water. Adequate automatic traps may be installed in addition to drain valves. The drain valve on the air receiver can be completely drained to prevent the accumulation of excessive amounts of liquid in the receiver.

Gauges and Valves - Every air receiver shall be equipped with an indicating pressure gauge readily visible and with one or more spring-loaded safety valves. This is to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by no more than 10%.

No valve of any type shall be placed between the air receiver and its safety valves. Safety appliances, such as safety valves, indicating devices and controlling devices, shall be constructed, located, and installed so that they cannot be readily rendered inoperative by any means, including the elements.

All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition.

4.3.6 RPE Fit Testing

In a hazardous toxic atmosphere, it is imperative that a proper fitting respirator be worn. To assure a proper fit, there are three different types of fit tests that can be performed. Based on the toxicity and concentration of the hazardous substance, the appropriate test is used.

4.3.7 Quantitative Fit Test.

The purpose of the quantitative fit test is to determine the proper fit and degree of integrity of the face fit under actual wearing conditions. It is intended to provide the best method of fitting the respirator to the individual, using sensitive methods of detection for leakage or malfunction.

Quantitative respirator fit tests involve exposing the respirator wearer to a test atmosphere containing an easily detectable, relatively non toxic aerosol, vapour or gas as the test agent and then measuring the penetration of the test agent into the respirator. There are a number of test



atmospheres, test agents, and exercises to perform during the tests. Manufacturers' recommendations should be followed for specific tests.

ANSI Z88.2-1980 describes a typical test protocol and exercise for performing quantitative fit testing.

4.3.8 Qualitative Fit Test.

Qualitative fit tests involve a test subject's responding (either voluntarily or involuntarily) to a chemical released outside the respirator face-piece. These tests are fast, easily performed, and use inexpensive equipment. Because they are based on the respirator wearer's subjective response to the test chemical, however, reproducibility and accuracy may vary. Three of the most popular methods are an irritant smoke test, an odorous vapor test and a taste test. The following represents a brief summary of each of these tests.

- **Irritant Smoke Test-** The irritant smoke test is performed by directing an irritant smoke, usually either stannic chloride or titanium tetrachloride, from a smoke tube towards the respirator being worn. If the wearer cannot detect the irritant smoke, a satisfactory fit is assumed to have been achieved.

The respirator wearer will react involuntarily, usually by coughing or sneezing, to leakage around or through the respirator. Since this is a qualitative test, the tester is interested in any response to the smoke. The degree of response is not important.

NOTE: The test substances are irritants to the eyes, skin and mucous membranes. Therefore, the respirator wearer should keep his/her eyes protected during testing.

4.3.9 Field Test Measures

There are two tests that can be used in the field to check the seal of the respirator: positive and negative pressure sealing tests. Each should be performed every time a respirator is donned, or else the procedures recommended by the manufacturer should be followed. Neither field test may be substituted for quantitative or qualitative tests. Adequate training of respirator users is essential for satisfactory field tests. ANSI Z88.2-1980 recommends the following procedures: -

- **Negative Pressure Test.** This test may be impossible to carry out on valve-less respirators and on many disposable (single-use) respirators. However, this test can be used on air-purifying respirators equipped with tight fitting respirator inlet coverings and atmosphere-supplying respirators equipped with tight fitting respirator inlet coverings and breathing tubes which can be squeezed or blocked at the inlet to prevent the passage of air.

The inlet opening of the respirator's canister(s), cartridge(s), or filter(s) is closed off by covering with the palm of the hand(s), by replacing the inlet seal on canister(s), or by squeezing a breathing tube or blocking its inlet so that it will not allow the passage of air.

The wearer is instructed to inhale gently and hold his breath for at least 10 seconds.

If a face-piece collapses slightly and no inward leakage of air into the face-piece is detected, it can be reasonably assured that the respirator has been properly donned and the exhalation valve and face-piece are not leaking.

- **Positive Pressure Test.** A positive pressure test can be used on respirators equipped with tight fitting respiratory inlet coverings which contain both inhalation and exhalation valves. This test



may be impossible to carry out on valve-less respirators and on many disposable respirators. The exhalation valve or breathing tube, or both, is closed off and the wearer is instructed to exhale gently.

The respirator has been properly donned if a slight positive pressure can be built up inside the face-piece without the detection of any outward leakage of air between the sealing surface of the face-piece and the wearer's face.

For some respirators, this test method requires that the respirator wearer first removes the exhalation valves cover from the respirator and then replace it after completion of the test.

These tasks often are difficult to carry out without disturbing the fit of the respirator to the wearer.

4.3.10 RPE Use During Non-Hazardous Welding Procedures

General welding, cutting and heating, involving unconfined spaces or metals of toxic insignificance, can normally be performed without mechanical ventilation or respiratory protective equipment.

General mechanical or local exhaust ventilation shall be provided whenever welding, cutting or heating is performed in a confined space. When adequate ventilation cannot be obtained without blocking access, air line respirators will be used.

A confined Space Entry Permit, issued by the Safety Department, will specify these requirements.

4.3.11 RPE Use When Welding, Cutting or Heating Metals of Toxic Significance.

Welding, cutting or heating in **any enclosed space**, involving the metals listed below, will be performed with either general mechanical or local exhaust ventilation: -

- Zinc bearing base or filler materials, or metals coated with Zinc-bearing materials.
- Lead base materials.
- Cadmium bearing filler materials.
- Chromium bearing metals or metals coated with chromium-bearing metals.

Welding, cutting or heating in **any enclosed space**, involving the metals listed below will be performed with effective local exhaust ventilation or employees shall be protected with air line respirators: -

- Metals containing lead, other than an impurity, or metals coated with lead-bearing materials.
- Cadmium-bearing or cadmium coated based metals.
- Metals coated with mercury-bearing metals.

Because of its high toxicity of **beryllium** containing base or filler metals, **both** local exhaust and air line respirators are required.

Welding, cutting or heating of toxic metals (as described in the previous three paragraphs) done in unconfined spaces (open air) can be performed using 3M#9920 filter type respirators, or any approved toxic fume dust filter type respirator.

Inert gas metal-arc welding shall not be performed within 200 feet (60 m) of where any chlorinated solvent is being used.

- Zep Safe/Solve is a chlorinated solvent and will release toxic fumes and gases when exposed to ultraviolet radiation.



- When inert gas metal-arc welding is performed on stainless steel, Part (2) (b) shall apply to protect against dangerous concentrations of nitrogen dioxide.

In enclosed spaces, all surfaces covered with toxic preservative coatings shall be stripped a distance of at least four (4) inches from the area of heat application, or air line respirators used. In open air, filter type respirators may be used.

For respiratory protection training and air quality standards refer to the previous procedure - General Respiratory Protection Program.

4.4 Abrasive (Grit) Blasting and Spray Painting Operations

For RPE during sand blasting, grit blasting or shot blasting and for spray painting operations refer to specific procedures contained within the HSE Procedure Manual.

	PERSONAL PROTECTIVE EQUIPMENT	
SECTION:	HEAD PROTECTION	
TITLE:	SAFETY HELMETS	
NOTE: SAFETY HELMETS SHALL BE WORN WHENEVER THERE IS A REQUIREMENT OR A FORESEEABLE RISK OF HEAD INJURY.		
STANDARD: BS EN 397 OR EQUIVALENT		
DESCRIPTION:		
<ol style="list-style-type: none"> 1. PLASTIC OR POLYCARBONATE SHELL. 2. REPLACEABLE, FULLY ADJUSTABLE HARNESS, SWEAT BAND AND TEXTILE CRADLE STRAPS. 3. SLOTTED ACCESSORY MOUNTING POINTS. 4. ACCESSORIES INCLUDE: CHIN STRAP, EAR DEFENDERS, FACE SHIELDS. 		
TYPES OF USE:		
<ol style="list-style-type: none"> 1. IMPACT FROM FALLING OR FLYING OBJECTS. 2. HEAD BUMPING OR LACERATION. 3. CHEMICAL DRIPS OR SPLASHES. 4. AVOID LEAVING HELMET LYING BY THE CAR REAR WINDOW. 		
Note - SAFETY HELMETS HAVE A REALISTIC LIFE SPAN OF 3 YEARS IRRESPECTIVE OF ANY SIGN OF WEAR OR DAMAGE.		