

## **NOM-017-STPS-2008. Selection, use and management of personal protective equipment in work centers**

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### **Abstract**

This project disclosed the development of the importance that should be taken for the selection, use and management of personal protective equipment in the workplace to protect workers from any risk that may occur in your area work that could damage their health. NOM-017-STPS-2008 who by revising the format of documents required for inspection of general conditions and Safety mention the most important and auditable points where the opportunity areas that exist in the company to comply with recognized and avoid any kind of sanction. Aiming to develop the use and management of necessary personal protective equipment for workers in the company TRAJES INIGUALABLES S.A. DE C.V. The personal protective equipment not reduce the risk or danger, only protect the individual from the environment and the degree of exposure is so highly recommended the use of these teams in each activity performed by the worker in order to protect all your health .

### **Safety and Health, Personal Protection, Danger**

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## 1. Introduction

The main foundation to carry out this project is to provide knowledge on the subject of personal protection as well as its advantages with the purpose that the operator understands the positive consequences of using these equipment for the protection of their health, avoiding the risk of suffering a damage or loss as it serves us very useful to not have direct contact with surfaces, environment and any agent that may affect the body.

In this work the proposal of guidelines and recommendations is made to consolidate a good selection, use and management of personal protection in the company TRAJES INIGUALABLES S.A. DE C.V. In which there are areas, situations and activities of danger in the workers are exposed where it will seek to carry out some kind of solution, for this we gave ourselves the task of obtaining information to devise some form of how to help improve any situation that arises.

The safety and hygiene has a great impact on the development of the industry creating a good environment, safety and good working conditions where workers will feel comfortable at the time of their work.

### 1.1 Justification

The purpose of this project is to implement security measures and, in turn, to avoid sanctions in case of non-compliance with the requirements of NOM-017-STPS-2008. Through the growth that the company has had in recent years in machinery and number of workers, security measures are efficient but scarce. The operative needs of the company force to have a greater control of the security measures to guarantee the integrity of the workers generating a safe work environment inside the facilities.

So it is very important to make sure of the legal requirements applicable to SUITABLE DRESS S.A. DE C.V. remain permanently Benefit to be achieved:

- That the company is not fined and comply with the NOM-017-STPS-2008.
- Changes that are intended:
- That the personnel take into account the security measures and that all use the appropriate equipment as suggested by the standard.

### 1.2 Problem

Personal protective equipment is an important role for all workers providing greater safety and for the prevention of an accident that may cause harm to health. For this reason, in order to avoid major social consequences, an integral approach to protection against risks is necessary, including the implementation of measures whose development corresponds to areas of action that are not strictly environmental but have the capacity to perfect the defense and the fight against some risk.

The assets of the company TRAJES INIGUALABLES S.A. DE C.V. it is a little affected since not all the personnel that carry out risk activities do not use the full personal protective equipment or some do not carry the adequate equipment. The NOM-017-STPS-2008 PERSONAL PROTECTION TEAM-SELECTION, USE AND MANAGEMENT IN WORK CENTERS, shows the steps for the preparation of the study based on the guidelines that this requires.

### 1.3 Hypothesis

The importance of personal protective equipment is of paramount importance for the safety of each worker who is exposed to hazards within the company.

On the other hand, personal protective equipment is not very safe because it can only protect us from a severe risk but it does not ensure the life of each individual.

## 1.4 Objectives

### 1.4.1 General Objectives

Propose guidelines to implement safety and hygiene measures to the selection, use and management of personal protective equipment for the formation of a good prevention system for agents of the working environment that may damage their physical integrity and health.

### 1.4.2 Specific Objectives

- Search and create strategies to prevent and avoid accidents and / or work-related illnesses.
- Create additional formats and carry out activities or tasks to comply with NOM-017-STPS-2008 regarding safety and hygiene in the company TRAJES INIGUALABLES S.A. DE C.V.
- Establish minimum requirements for the employer to provide workers with the personal protective equipment they must use based on the work risks to which they may be exposed due to the activities they develop or the areas where they are located.
- Identify and indicate the areas in the work center the risks where the mandatory use of personal protective equipment is required, in addition to placing an instruction manual that must be followed by the operator.
- Train staff for the correct use, review at the end of cleaning, maintenance and protection of personal protective equipment.
- Supervise that workers use personal protective equipment during their work day.

- Establish a set of Safety Standards that must be adopted to prevent such risks.

## 2. Theoretical framework Personal protection equipment (PPE)

The EPP are elements of individual protection of the worker, very widespread and used in any type of work and whose effectiveness depends, in large part, on its correct choice and proper maintenance thereof, is designed to protect the person against the risks that may occur in work activities or contact with chemical, radiological, physical, electrical, mechanical or other hazards preventing the occurrence of accidents and personal injuries among employees of the organization (Mexicana, 2008).

The EPP is mandatory use and responsibility of each worker for which the company is required to provide free of charge the appropriate PPE to each of the employees corresponding to the work activities that are carried out in their facilities (Landa, 2017). It needs to be reviewed and inspected periodically to verify its validity, state of conservation and proper functioning (Granda, 2016). The people who perform a task must have a prior evaluation of the position that necessarily includes a survey of hazard identification and a risk assessment to establish which type of PPE is truly appropriate for each task.

The PPE required for each activity should be available in the operation areas so that the task can be initiated only if the staff has the appropriate PPE for their industrial task design. It is the responsibility of workers and supervision to ensure the correct use of PPE in the work areas of each organization (Montanares, 2016).

**Advantages:**

- It provides a barrier between a certain risk and the person.
- Rapidity of its implementation.
- Improve the protection of the physical integrity of the worker and reduce the severity of the consequences of a possible accident suffered by the worker.
- It is an indispensable element, because it will be comfortable for the worker since it counts as an important factor in the work environment and that its use will protect his physical and mental integrity.

**Proper equipment for their personal protection**

- **Eye protection:** Provides safety for the face and eyes in areas where its use is likely to prevent or reduce related injuries. These areas are typically located where the operation with the equipment presents flying particle hazard, direct or reflected brightness, hazardous liquids or any combination of these hazards.
- **Protection of the head:** It must be provided where there is danger of impact and penetration of objects falling or flying. Particularly dielectric safety helmets guarantee accidental contact with energized circuits head protection.
- **Protection of the feet:** The safety footwear must protect the foot of the workers against moisture and hot substances, against rough surfaces, against footprints on sharp objects, against falling objects, likewise it must protect against electrical risk.

- **Hand protection:** Hand protection must be provided when there is a danger of cuts, such as when handling blades or cutting tools; when contact or handling of materials at high temperatures, or when there is a danger of contact with power lines, corrosive materials and other dangerous chemicals and solvents.
- **Hearing protection:** Hearing protectors are personal protection elements used to reduce the noise perceived by a person in a noisy environment. It is mandatory that hearing protection be used when they are exposed to continuous daily equivalent levels greater than 90 db or 140 db.
- **Respiratory protection:** Respirators should be used to:
  - Reduce exposures while implementing other controls.
  - Provide protection during activities such as maintenance and repairs when other controls are not practical.
  - Provide protection during emergencies.
- **Safety belts for work at height:** Most fatal accidents in construction are due to falls from a certain height. When it is not possible to perform work from a scaffold or ladder, or from a mobile access platform, the use of safety harness may be the only means of preventing serious or fatal injuries.
- **Back protection girdle:** It serves to prevent injuries in jobs with lifting materials of more than 20 kg. Some concepts related to work must be considered.

- **Protective clothing:** It is the special clothing that should be used as protection against certain specific risks and especially against the handling of caustic or corrosive substances and that do not protect ordinary work clothes.

**3. Methodology**

The method that was used was the field research method because a solution to a problem was given within the company Costumes Inigualables S.A de C.V. in the lack of personal protection equipment analyzing the place and the risk points to which they can be presented for the safety of the worker, the correct equipment was selected for each area and at the same time informing each worker their importance to use the equipment during their operations with the purpose of creating a habit of occupying them for the security of each one.

**3.1 Kind of investigation**

Within the elaborated project it is considered that the type of research that was used was that of Investigation-action since it is a type of applied research and destined to solutions to problems that have within a group, area or an organization as it is in this In this case, the problem of the lack of personal protection equipment, in addition to having used participatory research which is a study that arises from the problem that originates in the same organization with the aim that in the search of the solution the level of life of the people involved taking into account their participation of each one to achieve the desired objective.

**3.2 Theoretical Methods**

Personal protective equipment constitutes safety in the workplace and is necessary when the hazards have not been completely eliminated or controlled by other means.

They must be for personal use and not interchangeable and for their proper maintenance, they should be washed with soap solution after each use. Never store them near hot surfaces and ask for change when you notice any deterioration.

**3.4 Development of Selection, use and management of personal protective equipment in work centers**

Identification of activities by work position

For the identification of the activities by job position in the company Trajes Inigualables S.A. of C.V. The following table is prepared taking into account the number of workers, the areas, the place of work and the activities: as an important point it is worth mentioning that not all the areas and activities carried out in the work center require personal protection equipment. (See table 1).

Area	Activity	Workplace	Number of people
Offices	Accounting Human Resources Security and Hygiene Area Engineering Reception Management	Offices	12
Maintenance	Mechanics Cleaning	Mechanical workshop	20
Raw material warehouse	Delivery of Raw Material (threads, buttons, closures, etc)	Raw material warehouse	10
Diseño	Patterns DesignCortar	Diseño	6
cut	Fabric cut	cut	47
Fusioning	Fabric binding	Production	35
Small pieces	Pants production	Production	40
Front section	Pants production	Production	33
Rear Section	Pants production	Production	38
Assembly Section	Pants production	Production	36
Finished Section	Pants production	Production	34
Final Ironing Section	Pants production	Production	26
First section	Sack production	Production	56
Second section	Sack production	Production	53

Third section	Sack production	Production	51
Ironing	Sack production	Production	29
Finished Product Warehouse	Finished Garments	Finished Product Warehouse	14

**Table 1** Table of identification of activities by job.

### Identification of potential risks according to activities that are developed

The risk is the possibility of suffering a damage to health, elements or dangers. It can be defined as the value of the losses to which companies are exposed due to the occurrence of harmful events, which generates risk causes that refer to the possible means or alternatives that generate each of the risks.

In the activities carried out by the workers, there are risks to the operations, which is why the risks derived from the activities of the jobs were identified, these risks were evaluated considering the areas and activities they perform, the determination of the protection was made considering the "table 2" with which the equipment required to protect the worker was selected from the potential risks identified in each step of the execution of a task; as well as the agents and health risk factors identified in the performance of their activities or in the work area.

Determination of personal protective equipment		
Key and anatomic region	Key and e.p.p.	Type of risk depending on the activity of the worker
1.- head	A) helmet against impact. b) dielectric helmet. c) hoods	A) hit by something, which is a possibility of continuous risk inherent in its activity. B) risk of electric shock (consider high or low voltage, helmets are different). C) exposure to low temperatures or exposure to particles. Protection with a hood that can go under the helmet of personal protection.

2.- Eyes and Face	A) Protective glasses. B) Googles. C) Facial Screen. D) Welder's mask. E) Glasses for Soldering Iron.	A) Risk of particle or liquid projection. In case of be exposed to radiation, glasses are used protection against radiation. B) Risk of exposure to vapors or fumes that could irritate eyes or larger particles or at high speed. C) It is also used when it is exposed to the projection of particles in processes such as grinding or processes Similar; to protect eyes and face. D) Specific for electric welding processes. E) Specific for processes with autogenous welding.
3.- Ears	A) Hearing Plugs. B) Acoustic Shells.	A) Protection against noise risk; according to the maximum specified in the product or by the manufacturer. B) Same case of paragraph A.
4.- Respiratory Apparatus	A) Respirator against particles. B) Respirator against gases and vapors. C) Disposable mask. D) Self-contained breathing apparatus	In this type of products it is important to verify the recommendations or specifications of equipment protection, made by the manufacturer of the product. A) Protection against dust or particles in the working environment and that represent a risk to the worker's health. B) Protection against gases and vapors. Consider that there are different types of gases and vapors for which different types of respirators also apply, including for toxic gases or vapors. C) Simple masks for protection against dust. D) Used when the worker enters confined spaces or when a respirator does not provide the required protection.

**Table 2** Identification of potential risks according to the activities that are developed.

## 4. Results

For the identification of the workplaces and the personal protection equipment required in each area, it was decided to supervise by means of a table with the purpose of ensuring that the workers used the appropriate protection equipment.

It should be noted that in TRAJES INIGUALES, S.A. of C.V. all personnel entering their facilities (production, offices) must do so with footwear, men with long pants and women, preferably pants, without jewelry; entering with flip flops, open footwear, jewelry and shorts, represents a risk for the staff, which will affect the interests of the company. Personnel that perform work as maintenance or warehouse, must have at least industrial footwear with cap and girdle, in addition to the equipment required for the development of their functions.

Today in the company TRAJES INIGUALABLES S.A. DE C.V. workers make proper use of personal protective equipment due to the knowledge of each of their functions, making workers observe the importance of wearing personal protective equipment for their safety in accordance with NOM-017-STPS-2008 , as well as different activities that are carried out within the workplace.

## 5. Conclusions

The content of the project, developed together with the information obtained, led to the conclusion of the activities that are carried out at TRAJES INIGUALABLES S.A. DE CV, are diverse, so each category must use personal protection equipment, which are necessary for the best human protection in the industrial environment and must be used correctly to achieve the highest possible safety, since a protective equipment Personnel that is not used in the right way is a team that does not keep our protection and therefore can expose people to a danger with the possibility of causing an accident or damage to our health. That is why it is very important to be aware of the use of personal protective equipment in industrial tasks and the responsibilities involved in its proper use and maintenance.

The company today, has an internal work regulation that provides for provisions on Safety and Hygiene for the prevention of work risks and protection of workers. In addition, the working conditions of the workers within the facilities of TRAJES INIGUALABLES S.A. DE C.V. thus contributing to the conservation of the life of each of the workers, taking care of their health and physical integrity.

## 6. References

- Granda, J. (29 de Noviembre de 2016). Trajes Inigualables. (A. Victoriano, Entrevistador)
- Landa, A. (28 de Enero de 2017). Trajes Inigualables. (A. Victoriano, Entrevistador)
- Mexicana, N. O. (9 de Diciembre de 2008). NOM-017-STPS-2008, Equipo de protección personal-Selección, uso y manejo en los centros de trabajo. *Diario Oficial*, págs. 1--11.
- Montanares, J. (22 de Diciembre de 2016). *La seguridad, la prevención y la salud ocupacional de Chile*. Obtenido de [https://www.paritarios.cl/especial\\_epp.htm](https://www.paritarios.cl/especial_epp.htm)
- NOM-004-STPS-1999 Sistemas de protección y dispositivos de seguridad en la maquinaria y equipo.
- NOM-017-STPS-2008 Equipo de protección personal-Selección, uso y manejo en los centros de trabajo.
- NOM-026-STPS-2008. Colores y señales de seguridad e higiene, e identificación de fluidos conducidos en tuberías.
- NOM-113-STPS-1994. Calzado de protección.
- NOM-115-STPS-1994. Cascos de protección – especificaciones, métodos de prueba y clasificación.

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