



**UNIVERSIDAD
DEL AZUAY**

Universidad del Azuay

Faculty of Legal Sciences

School of International Studies

***Proposal for the management of health and safety at work
based on the ISO 45001: 2018 standard applied in the Tapitex
company.***

***Graduation work prior to obtaining a Bachelor's degree in International
Studies with a minor in Foreign Trade.***

Autor: David Alejandro Balcazar Granja

Director: Juan Manuel Maldonado Matute

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DEDICATION

Dedicated to my family, the health of all workers and whoever is interested in Health and Safety at Work.

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To all my family for the patience and support they have given me. I thank all my teachers, Juan Maldonado, Nicolay Espejo and the University of Azuay. Finally, I thank everyone who has contributed to this project.

RESUMEN

La Seguridad y Salud en el Trabajo (SST) es uno de los aspectos menospreciados por muchos sectores laborales en el Ecuador debido a que es muy reciente el concepto de un Sistema de Gestión de SST (SGSST). La norma ISO45001:2018 es un SGSST estandarizado a nivel internacional basado en el ciclo de Deming que se puede aplicar a cualquier organización. Debido a que los sistemas nacionales de SST en muchas empresas son de carácter reaccionario y no presentan sistemas de mejora continua, así es el caso de la empresa Tapitex M&B. Se cree que un SGSST basado en la ISO45001:2018 podría mejorar su control y seguimiento de la SST.

ABSTRACT

Occupational Safety and Health (OSH) is one of the aspects neglected by many labor sectors in Ecuador because the concept of an OSH Management System (OSH-MS) is very recent. ISO45001: 2018 is an internationally standardized OSH-MS based on the Deming cycle that can be applied to any organization. Because the national OSH systems in many companies are reactionary in nature and do not have continuous improvement systems, this is the case of the Tapitex M&B company. It is believed that an OSH-MS based on ISO45001: 2018 could improve their control and monitoring of OSH.

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CHAPTER 1 BACKGROUND AND ANTECEDENTS

History of Occupational Health and Safety (OHS)

Throughout history, the engine that has pushed humans to create today's world has been work. Work is the use of energy, whether physical or mental, to transform something; either for personal, third or collective benefit. The first jobs before the agricultural revolution had their risks; hunting, fishing, and foraging for food depended on venturing out of the social circle, exposing oneself to the elements, other wild animals, and other humans. What allowed the settling and the specialization of the labor were the primitive technological advances such as the housing of composite materials, cured clothing, armor, weapons and tools; that made prehistoric work safer and allowed more and more advanced work to be carried out.

The father of Western medicine Hippocrates de Cos was a Greek physician and philosopher who in the 4th century BC made a series of documents called The Hippocratic Treatises, these documents would be the basis of Western medicine that would focus on diseases being of a character natural or attributed to humors and not of divine cause, this philosophy and medical practices would influence health in the Hellenic era, spreading throughout the Mediterranean and permeating until around the fourteenth century when the first detractors of Hippocrates' ideas emerged since there were erroneous data in human anatomy and treatment but it can be rescued that certain medical procedures based on the descriptions of Hippocrates are still applied and the philosopher is credited with the creation of the Medical Oath applied in current Western medicine. (Tsiompanou & Marketos, 2013) In 1308 Arnau de Vilanova the Valencian physician, religious reformer and alchemist wrote his work called Health Regime which is based on translations of Greek, Islamic and Hebrew writings, above all it was based on his own experience since he was the physician of kings and potatoes of the time. Health Regime replaces the medical philosophies of the ancient Greeks and is installed for almost 300 years as the basis of Christian medicine, adds preventive medicine at work for the first time, its importance is due to the fact that maintenance stands out among its ideas. of good hygiene cleaning the body of dirt from the work carried out, his influence is due to the fact that he was the doctor of the Spanish royalty of the time and his alchemical practices were very famous, spreading

his writings throughout the ancient world, but he never developed an OSH management system at any scale.

The history of OSH is very recent, it can be analyzed by the most important milestones that change and continue to change OSH concepts today. They are the industrial revolution, the enlightenment and globalization that change the medieval concepts of job security. The ideas of the enlightenment in the workplace were very important, they gave way to the abolition of slavery, the end of forced labor, the separation of church and state, the appreciation of life and personal integrity; as well as the ideas of freedom to choose employment or social security and many other ideas that permeate to this day in the form of labor rights. One of the forerunners of these ideas was the Italian doctor Bernardino Ramazzini, father of industrial medicine, considered the "first preventor", who published in 1700 a work entitled "The treatise on the diseases of artisans."

Ramazzini had identified two main causes of illnesses, which were the poor quality of the substances worked on that produced "harmful exhalations" on the one hand and, on the other hand, the "violent and disorderly movements, in uncomfortable and extraordinary situations that many workers give to. their bodies". Ramazzini studied more than 52 professions and first highlighted the relationship between work and people, saying: "The arts are a source of disease for those who practice them and the unfortunate artisans are those who encounter the most serious diseases ...". Precursor of ergonomics, he already denounced at that time about bad postures and work organization. He advises copper workers to cover their ears with cotton to reduce continuous noise. He also highlights the relationship between standing work and the appearance of varicose veins and denounces the "vicious attitudes of sedentary workers". (Ramazzini, 1700) Ramazzini's writings became popular in Western academic circles and served as the basis for the nations of the time to restructure their policies regarding OSH during the 18th and 19th centuries.(Veiga-Cabo, 2014)

Industrialization, in addition to changing the production system in each of its iterations, also changed the way of life of those who began to inhabit the cities that were formed around the nascent factories. The risks became more complex at work; machines, noxious substances, structural hazards, and mental decline became a by-product of

industrialized life. During the beginnings of industrialization until the nineteenth century, factories and workplaces had autonomy over what was related to work. Social sectors demanded that the rights that the illustration raised but that were not applied be respected. The demands of the social struggles of the nineteenth century gave way to regularize and apply labor rights through the state. It is pertinent to mention the developments in the United Kingdom at that time in terms of OSH, since the English industrial model was the basis of the world current and was one of the first nations to create an OSH system for the benefit of the worker that is maintained until our days. Since 1802 the British Parliament begins to regularize the SST in a series of decrees called The Factory Acts, the last act was revised in 1979 and is constantly amended. The issues that were initially addressed with the Health and Morality of Apprentices Act of 1802 which regularized child labor, depending on the age of the child, the maximum number of hours that a child could work and the type of work was established. job he could do, this to reduce the high number of child accidents in factories. The minutes were later revised and new amendments were proposed that added more benefits, for example, in 1901 child labor was eliminated and a person could start working legally from the age of 13, later it was revised again. (British Parliament, 2020)

After the world wars of the early twentieth century, the nascent globalization and the industrial mentality of past centuries allowed the creation of standardized systems of international quality, as will be explained later. Another effect of globalization is the expectation of the application of OSH systems supranationally. The International Labor Organization (ILO) is the largest organization related to the better treatment of workers and social justice, started in 1919 by a Labor Commission established by the Peace Conference after the First World War, its objective has been the security considerations, humanitarian, political and economic causes. The founders of the ILO recognized the importance of social justice to guarantee peace, as workers were exploited in the industrialized nations of the time. Realizing global economic interdependence, the need arose to cooperate to provide similar working conditions to workers in countries competing for the same markets.

Thus, other supranational organizations have emerged in the last 101 years with more specific objectives. For example, we have the European Agency for Safety and Health at Work, which is a body of the European Union, who form panels focused on

regulations for all member countries or individual for each country depending on the need. (Agencia Europea para la Seguridad y la Salud en el Trabajo , 2020)

General Risk Theory

One of the most important works on risk in general is "The Risk Society" by Ulrich Bech in 1982. According to Bech the main problem of advanced and modern societies are the new global risks to which all people, animals are exposed and plants, and the one that produces the progressive machining of industrial society.

Because the new threats are, for example: from nuclear or chemical substances; These new risks are invisible by their nature. Ulrich argues that definitional struggles and controversy between experts and actors do not make it easier to assess the level of danger awareness. The discussion about pollutants and their threat to humans is technocratic and naturalistic. The question of who is responsible for the risks is complex because the causal chains are often non-linear and different actors are involved. Risks are also globalized and do not stop at state or national borders. For example, even the rich and powerful cannot escape the effects of an atomic bomb attack or a pandemic. Ulrich argues about the boomerang effect which is the risk that not only affects those who cause degradation, it simply affects everyone.

Risks are always possible events in the future; therefore, they are uncertain and unreal. In the name of progress, risks are suppressed, minimized, and negated. The logic of wealth production celebrates a Pyrrhic victory in the name of advancement and thus produces more than it denies, that is, new threats.(Beck, 1986)

Occupational Health and Safety Management System (OHS-MS)

According to the International Labor Organization (ILO), an OSH management system is a logical set of tools, characterized by its flexibility, which can be adapted to the size and activity of the organization, and focus on general or specific associated hazards and risks. with said activity. Their complexity can range from the basic needs of a small

business running a single product process where risks and hazards are easy to identify, to multi-hazard industries such as mining, nuclear power, chemical manufacturing or construction. (Organización Internacional de Trabajo, 2011)

The purpose of an Occupational Health and Safety System

The main objective of an OSH system is to organize and structure the prevention, in a systematic way, of risks, within the organization. It is important to note that the SST system does not include workplace injury claim management or SST financial management.

To achieve this, two main principles form the basis of any management system, namely:

1. Continuous improvement through the sustainability of OSH activities:

Continuous improvement does not require doing everything at the same time, but rather ensuring that what is being implemented will continue over time and that regular monitoring will take place to measure results and make improvements as needed. The high performance of SST cannot be purchased instantly; it is the result of the progressive improvement of our ways of doing things.

2. The distribution of responsibilities among all and the responsibility of each one, with respect to their obligations.

The responsibility for health and safety at work does not rest on the shoulders of one person; it's everyone's business. This means that everyone should have well defined OSH responsibilities, from the top manager to the worker, not forgetting the purchasing manager, technicians, laboratory manager, janitor, etc. This principle underscores the need to involve employees at every step of the process

The main elements of an OSH System are:

1. Hazard identification.
2. The management of risks present in the organization.
3. As well as the identification of legal obligations and other requirements to which the organization is subject.

It should be noted that the first two elements also contribute greatly to fulfilling the duty of anticipation of due diligence in the OSH. (Contreras Malavé & Gayo, 2019)

Organizational Health and Safety for Enterprises

In the vast majority of countries, it is the employer who has the responsibility and obligation to implement OSH and comply with the requirements derived from national laws and regulations. Applying a systemic approach to OSH management in the company ensures that the level of prevention and protection will be continuously assessed and maintained through appropriate improvements and will be carried out in a timely manner.

The level of advancement in OSH differs from company to company and even from sector to sector in large companies. The efforts required to configure an OH&S system or elements of an OH&S system vary for each. That is why the work environment and the types of danger and risks to which employees are exposed vary due to materials and products used, types of processes and operations, equipment and tools, hygiene data, etc. The location of the tasks and activities during the occurrence of these accidents, the legal obligations to which the company is subject, all are factors that must be identified before making a decision related to the prioritization of the actions to be carried out.

A complete risk analysis is certainly desirable. Such analysis requires time, resources, the use of specialists when modifying equipment or eliminating certain danger points. All this generates costs that are not available to all SMEs. Better to adopt a strategy that addresses the most important business needs and sets achievable goals. Therefore, the objective could be to carry out a risk analysis of a particular type of

equipment or its confined spaces. After the risk analysis, it is necessary to identify and implement prevention and mitigation measures. In this regard, several measures can be taken to reduce the risk. It is better to identify and integrate all prevention and mitigation measures for a given situation; This allows a continuous improvement process to be implemented by focusing on projects and proceeding gradually for SMEs.

Health and Safety at Work in Ecuadorian legislation

The Ministry of Labor in Ecuador dictates in its legal framework that worker health and safety is supported in Article 326, numeral 5 of the Constitution of Ecuador, in Andean Community Standards, International ILO Conventions, Labor Code, Health and Safety Regulations for Workers and Improvement of the Work Environment, Ministerial Agreements.

The Ministry of Labor lists and lists all the legal documents that address the issues of safety and health at work until February 2020:

- INTERNATIONAL AGREEMENTS
 - DECISIÓN 584. INSTRUMENTO ANDINO DE SEGURIDAD Y SALUD EN EL TRABAJO
 - RESOLUCIÓN 957. REGLAMENTO DEL INSTRUCTIVO ANDINO DE SEGURIDAD Y SALUD EN EL TRABAJO
- NATIONAL LAWS
 - CÓDIGO DEL TRABAJO
 - LEY DE COMERCIALIZACION Y EMPLEO DE PLAGUICIDAS
 - LEY DE DEFENSA CONTRA INCENDIOS
 - LEY DE MINERIA
 - LEY ORGANICA DE DISCAPACIDADES, LOD
 - LEY ORGANICA DE EMPRESAS PUBLICAS, LOEP
 - LEY ORGANICA DE PREVENCION INTEGRAL FENOMENO SOCIO ECONOMICO DROGAS
 - LEY ORGANICA DE SERVICIO PUBLICO, LOSEP

- LEY ORGANICA JUSTICIA LABORAL Y RECONOCIMIENTO DEL TRABAJO EN HOGAR
- LEY ORGANICA PARA PROMOCION DEL TRABAJO JUVENIL, CESANTIA DESEMPLEO
- REGLAMENTO A LA LEY ORGANICA DEL SISTEMA
- REGLAMENTO GENERAL A LA LEY DE MINERIA
- EXECUTIVE DECREES
 - DECRETO EJECUTIVO 860. SISTEMA NACIONAL DE CUALIFICACIONES Y CAPACITACION PROFESIONAL
 - DECRETO EJECUTIVO 2393. REGLAMENTO DE SEGURIDAD Y SALUD DE LOS TRABAJADORES
- ACUERDOS MINISTERIALES
 - AM 13. REGLAMENTO DE RIESGOS DE TRABAJO EN INSTALACIONES ELECTRICAS
 - AM 82. NORMATIVA ERRADICACION DE LA DISCRIMINACION EN EL AMBITO LABORAL
 - AM 135. INSTRUCTIVO PARA EL CUMPLIMIENTO DE LAS OBLIGACIONES DE EMPLEADORES
 - AM 174. REGLAMENTO DE SEGURIDAD PARA LA CONSTRUCCION Y OBRAS PÚBLICAS
 - AM 398. PROHIBIDO TERMINACIÓN DE RELACIÓN LABORAL A PERSONAS CON VIH-SIDA
 - AM 1404. REGLAMENTO DE LOS SERVICIOS MEDICOS DE LAS EMPRESAS
 - SETED-MDT-2016-001-A DIRECTRICES DESARROLLO PROGRAMA DE DROGAS EN LOS ESPACIOS LABORALES
- NORMATIVA TÉCNICA INEN
 - CPE INEN 0102013 – SEGURIDAD EN EL USO DE GRÚAS
 - CPE-20 – CÓDIGO DE PRACTICA PARA LIMPIEZA, DESINFECCIÓN
 - GPE-7 – GUÍA PARA LA PRESENTACIÓN DE LOS AVISOS SOBRE ACCIDENTES DE TRABAJO
 - NTE INEN 146 – CASCOS DE SEGURIDAD PARA USO INDUSTRIAL. REQUISITOS E INSPECCIÓN
 - NTE INEN 731 – EXTINTORES PORTÁTILES Y ESTACIONARIOS CONTRA INCENDIOS. DEFINICIONES Y CLASIFICACIÓN

- NTE INEN 733 – PREVENCIÓN DE INCENDIOS. VENTANAS CORTAFUEGOS. DETERMINACIÓN DE LA RESISTENCIA AL FUEGO
- NTE INEN 737 – EXTINTORES PORTÁTILES. MUESTREO
- NTE INEN 738 – EXTINTORES PORTÁTILES. MÉTODOS DE ENSAYO
- NTE INEN 739 – EXTINTORES PORTÁTILES. INSPECCIÓN, MANTENIMIENTO Y RECARGA
- NTE INEN 743 – PREVENCIÓN DE INCENDIOS. CLASIFICACIÓN DE LOS MATERIALES EXPLOSIVOS
- NTE INEN 744 – EQUIPO CONTRA INCENDIOS. VESTIMENTA RESISTENTE AL CALOR Y A LA LLAMA. MÉTODOS DE ENSAYO
- NTE INEN 745 – EQUIPO CONTRA INCENDIOS. DETERMINACIÓN DE LA RESISTENCIA A LA LLAMA DE MATERIALES TEXTILES Y LAMINADOS. MÉTODO DE ENSAYO
- NTE INEN 747 – PREVENCIÓN DE INCENDIOS. PUERTAS CORTAFUEGO. DEFINICIONES Y TERMINOLOGÍA
- NTE INEN 748 – PREVENCIÓN DE INCENDIOS. PUERTAS CORTAFUEGO. CLASIFICACIÓN
- NTE INEN 749 – PREVENCIÓN DE INCENDIOS. PUERTAS CORTAFUEGO. MUESTREO
- NTE INEN 750 – PREVENCIÓN DE INCENDIOS. ELEMENTOS CONSTRUCTIVOS DE VIDRIO. DETERMINACIÓN DE LA RESISTENCIA AL FUEGO. MÉTODO DE ENSAYO
- NTE INEN 751 – PREVENCIÓN DE INCENDIOS. DETERMINACIÓN DE LA SUSCEPTIBILIDAD DE IGNICIÓN DE LOS MATERIALES Y ESTRUCTURAS. MÉTODO DE ENSAYO
- NTE INEN 754 – PREVENCIÓN DE INCENDIOS. PUERTAS CORTAFUEGO. REQUISITOS GENERALES
- NTE INEN 756 – PROTECCIÓN CONTRA INCENDIOS. DETERMINACIÓN DEL ÍNDICE DE PROPAGACIÓN DEL FUEGO EN MATERIALES DE CONSTRUCCIÓN. MÉTODO DE ENSAYO
- NTE INEN 757 – PREVENCIÓN DE INCENDIOS. DETERMINACIÓN DEL POTENCIAL CALORÍFICO DE LOS MATERIALES DE CONSTRUCCIÓN. MÉTODO DE ENSAYO

- NTE INEN 758 – PREVENCIÓN DE INCENDIOS. TECHOS. DETERMINACIÓN DE LA RESISTENCIA A LA EXPOSICIÓN EXTERNA AL FUEGO. MÉTODO DE ENSAYO
- NTE INEN 801 – EXTINTORES PORTÁTILES. REQUISITOS GENERALES.
- NTE INEN 802 – EXTINTORES PORTÁTILES. SELECCIÓN Y DISTRIBUCIÓN EN EDIFICACIONES NTE INEN 803 – EQUIPO CONTRA INCENDIOS. VESTIMENTA RESISTENTE AL CALOR. REQUISITOS
- NTE INEN 804 – PREVENCIÓN DE INCENDIOS. DETERMINACIÓN DE LA RESISTENCIA AL FUEGO DE ELEMENTOS CONSTRUCTIVOS. MÉTODO DE ENSAYO
- NTE INEN 805 – PREVENCIÓN DE INCENDIOS. PUERTAS CORTAFUEGOS ABISAGRADAS. REQUISITOS
- NTE INEN 806 – PREVENCIÓN DE INCENDIOS. PUERTAS CORTAFUEGO CORREDIZAS. REQUISITOS
- NTE INEN 812- IDENTIFICACIÓN DE CILINDROS Y OTROS RECIPIENTES QUE CONTIENEN AGENTES EXTINTORES DE FUEGO
- NTE INEN 877 – ELEMENTOS DE PROTECCIÓN PERSONAL. BOTAS DE CAUCHO. REQUISITOS NTE INEN 972 – AGUA POTABLE. DETERMINACIÓN DEL RESIDUO SECO TOTAL
- NTE INEN 974 – AGUA POTABLE. DETERMINACIÓN DE LA DUREZA TOTAL POR TITULACIÓN CON EDTA
- NTE INEN 977 – AGUA POTABLE. DETERMINACIÓN DE CLORO RESIDUAL. MÉTODO DE LA DPD-FERROSO
- NTE INEN 980 – AGUA POTABLE. DETERMINACIÓN DE ARSÉNICO. MÉTODO DEL DIETILDITIOCARBAMATO DE PLATA
- NTE INEN 995 – AGUA. DETERMINACIÓN DE NITRÓGENO DE NITRATOS.
- NTE INEN 996 – RECUBRIMIENTOS METÁLICOS. DETERMINACIÓN DE LOS ENSAYOS DE POROSIDAD
- NTE INEN 1076 – PREVENCIÓN DE INCENDIOS. CLASIFICACIÓN E IDENTIFICACIÓN DE SUSTANCIAS PELIGROSAS EN PRESENCIA DE FUEGO
- NTE INEN 1104 – AGUA POTABLE. DETERMINACIÓN DEL MANGANESO TOTAL

- NTE INEN 1105 – AGUAS. MUESTREO PARA EXAMEN MICROBIOLÓGICO
- NTE INEN 1106 – AGUAS. DETERMINACIÓN DE OXÍGENO DISUELTO
- NTE INEN 1107 – AGUAS. DETERMINACIÓN DEL CALCIO. MÉTODO EDTA
- NTE INEN 1108 – AGUA POTABLE. REQUISITOS
- NTE INEN 1202 – AGUAS. DEMANDA BIOQUÍMICA DE OXÍGENO (DBO5)
- NTE INEN 1203 – AGUA. DEMANDA QUÍMICA DE OXÍGENO (DQO)
- NTE INEN 1204 – AGUAS. DETERMINACIÓN DE NITRÓGENO ORGÁNICO
- NTE INEN 1205-1 – AGUA. DETERMINACIÓN DEL NÚMERO TOTAL DE BACTERIAS EN PLACAS
- NTE INEN 1467-1 – TARJETAS DE SEGURIDAD PARA PREVENCIÓN DE ACCIDENTES. REQUISITOS
- NTE INEN 1473-1 – PREVENCIÓN DE INCENDIOS. MARCOS PARA PUERTAS CORTAFUEGO. REQUISITOS}
- NTE INEN 1474-1 – PREVENCIÓN DE INCENDIOS. PUERTAS CORTAFUEGO DE MADERA REVESTIDAS DE LÁMINAS DE METAL. REQUISITOS
- NTE INEN 1526-C – AGUA PARA BATERÍAS PLOMO-ÁCIDO. MÉTODOS DE ENSAYO
- NTE INEN 2040 – PRODUCTOS ABSORBENTES DESECHABLES. PAÑALES PARA INFANTES. REQUISITOS
- NTE INEN 2068 – HIGIENE Y SEGURIDAD. EQUIPOS DE PROTECCIÓN RESPIRATORIA. DEFINICIONES
- NTE INEN 2071 – PRODUCTOS QUÍMICOS INDUSTRIALES. CAL VIVA Y CAL HIDRATADA PARA TRATAMIENTO DE AGUAS. REQUISITOS E INSPECCIÓN.
- NTE INEN 2073 – PRODUCTOS QUÍMICOS INDUSTRIALES. CAL VIVA Y CAL HIDRATADA PARA TRATAMIENTO DE AGUAS. MUESTREO
- NTE INEN 2148 – AGUA. PERMANGANATO DE POTASIO PARA TRATAMIENTO DE AGUAS. REQUISITOS E INSPECCIÓN
- NTE INEN 2149 – AGUA. MEDIOS FILTRANTES GRANULARES UTILIZADOS EN EL TRATAMIENTO DE AGUAS. REQUISITOS

- NTE INEN 2169 – AGUA. CALIDAD DEL AGUA. MUESTREO. MANEJO Y CONSERVACIÓN DE MUESTRAS
- NTE INEN 2176 – AGUA. CALIDAD DEL AGUA. MUESTREO. TÉCNICAS DE MUESTREO NTE-INEN-1533 – PREVENCIÓN DE INCENDIOS. REQUISITOS PARA EL TRANSPORTE DE GAS LICUADO DE PETRÓLEO (GLP) EN CARROS CISTERNA (TANQUEROS)
- NTE-INEN-1534 – PREVENCIÓN DE INCENDIOS. ALMACENAJE DE CILINDROS PARA GAS LICUADO DE PETROLEO (GLP). REQUISITOS
- NTE-INEN-1535 – PREVENCIÓN DE INCENDIOS. REQUISITOS PARA EL TRANSPORTE Y DISTRIBUCIÓN DE CILINDROS DE GAS LICUADO DE PETRÓLEO (GLP) EN VEHÍCULOS AUTOMOTORES
- NTE-INEN-1536 – PREVENCIÓN DE INCENDIOS. REQUISITOS DE SEGURIDAD EN PLANTAS DE ALMACENAMIENTO Y ENVASADO DE GAS LICUADO DE PETRÓLEO (GLP)
- NTE-INEN-1537 – PREVENCIÓN DE INCENDIOS. REQUISITOS DE SEGURIDAD PARA OPERACIONES DE TRASVASE DE GAS LICUADO DE PETRÓLEO (GLP)
- NTE-INEN-1545 – AGUA PARA BATERÍAS PLOMO-ÁCIDO. REQUISITOS
- NTE-INEN-1646 – DEFINICIONES Y DISPOSICIONES ANTROPOMÉTRICAS GENERALES PARA EL DISEÑO DE MUEBLES
- NTE-INEN-1882 – AGUA. DEFINICIONES
- CONVENIOS INTERNACIONALES
 - CVN 024 SEGURO DE ENFERMEDAD DE LOS TRABAJADORES
 - CVN 029 TRABAJO FORZOSO Y OBLIGATORIO CVN 045 MUJERES EN TRABAJOS SUBTERRANEOS DE MINAS
 - CVN 077 EXAMEN MEDICO APTITUD PARA EMPLEO DE MENORES EN INDUSTRIA
 - CVN 078 EMPLEO DE MENORES EN TRABAJOS NO INDUSTRIALES
 - CVN 081 INSPECCION DEL TRABAJO EN LA INDUSTRIA Y COMERCIO
 - CVN 113 EXAMEN MEDICO DE LOS PESCADORES
 - CVN 115 PROTECCION CONTRA LAS RADIACIONES IONIZANTES

- CVN 119 PROTECCION DE LA MAQUINARIA
- CVN 120 HIGIENE EN EL COMERCIO Y OFICINAS
- CVN 121 PRESTACIONES EN CASO DE ACCIDENTES DE TRABAJO
- CVN 123 EDAD MINIMA DE ADMISION AL TRABAJO EN LAS MINAS
- CVN 124 EXAMEN MEDICO DE MENORES PARA EL EMPLEO DE TRABAJO EN MINAS
- CVN 127 PESO MAXIMO QUE PUEDE TRANSPORTAR UN TRABAJADOR
- CVN 130 ASISTENCIA MEDICA, PRESTACIONES MONETARIAS DE ENFERMEDAD
- CVN 136 PROTECCION CONTRA DE INTOXICACION POR BENCENO
- CVN 139 PREVENCION Y CONTROL DE RIESGOS PROFESIONALES
- CVN 148 PROTECCION DE LOS TRABAJADORES CONTRA RIESGOS PROFESIONALES
- CVN 149 EMPLEO Y CONDICIONES DE TRABAJO
- CVN 152 SEGURIDAD E HIGIENE EN LOS TRABAJOS PORTUARIOS
- CVN 153 LA DURACION DEL TRABAJO EN LOS TRANSPORTES DE CARRETERA
- CVN 159 READAPTACION PROFESIONAL Y EMPLEO DE PERSONAS INVALIDAS
- CVN 162 LA RECOMENDACION SOBRE LOS TRABAJADORES DE EDAD
- CVN 189 TRABAJO DECENTE PARA TRABAJADORAS DOMESTICAS

(Ministerio del Trabajo del Ecuador, 2020)

Of these documents, the following can be highlighted that are relevant to this work:

Decisions of the Andean Community

The Andean Community of Nations in 2004 when finding gaps in the laws of different nations, and with the purpose of establishing similar fundamental standards in matters of safety and health at work that serve as a basis for the harmonization of the laws and regulations that regulate the particular situations of the labor activities that take place in each of the Andean countries, through various discussions, Decision 584 of the CAN was reached, creating the "Andean Instrument for Safety and Health at Work". be a guideline for the implementation of occupational health and safety management systems. (Comunidad Andinas de Naciones, 2004)

The Constitution

Within the constitution of Ecuador in 2008, OSH is mentioned in article 326, paragraph 5, which emphasizes: "Everyone shall have the right to carry out their work in an adequate and conducive environment, which guarantees their health, integrity, safety, hygiene and well-being. (Constitucion de la Republica del Ecuador, 2011)

Regulation of Health and Safety of Workers and Improvement of the Work Environment

In 1986, Decree 2393 was issued by President León Febres Cordero, in this decree the "Regulation of Health and Safety of Workers and Improvement of the Work Environment" is created. Thus, paraphrasing the regulation, it is created with the aim of coordinating the executive actions of all public sector organizations with attributions in the prevention of occupational hazards. Composed of the Ministry of Labor, IESS and the Ministry of Health

This regulation also defines the obligations of employers and workers. It establishes the guidelines that regulate the Health and Safety Committees, the Occupational

Safety and Hygiene Unit; For companies with more than 100 workers and for high-risk companies, a Health and Safety Technician will be necessary.

It establishes the general conditions of the work centers: buildings and premises; floors, ceilings and walls; hallways; ladders; platforms, doors and exits; permanent services; households; dining rooms; sanitary facilities; Nursing; of the environment and occupational risks due to physical, chemical and biological factors; protection equipment

In the following titles the regulation describes the risks and prevention with devices, machines and tools; handling and transportation of personnel and dangerous goods; storage; cargo and transport vehicles; on dock work; collective protection: fire prevention. Local; safety signage; types of signs, colors, etc.; personal protection: PPE and incentives; responsibilities and sanctions. (Decreto Ejecutivo 2393, 1986)

Labor Code

It is the labor code that, as its name explains, regulates everything related to work, as well as occupational hazards and OSH. On the occupational risk in this code is regulated in the Fourth Title called "Of the risks in the work". Comprising a series of articles ranging from article 347 to 439 divided into 5 chapters that address from general definitions of SST, determination of responsibilities in accident cases to tables of compensation values for different types of accidents:

Chapter I: Determination of the risks and the responsibility of the employer

Chapter II: Accidents

Chapter III: Of occupational diseases

Chapter IV: Compensation

Chapter V: Of the prevention of risks, of the safety and hygiene measures, of the aid stations, and of the reduction of the capacity for work

It is pertinent to mention the following articles in Chapter 1:

"Art. 347.- Work risks. - Occupational risks are the harmful eventualities to which the worker is subject, on the occasion or as a consequence of his activity.

For the purposes of the employer's responsibility, occupational diseases and accidents are considered occupational risks.

Art. 348.- Work accident. - Work accident is any unforeseen and sudden event that causes the worker a bodily injury or functional disturbance, on the occasion or as a consequence of the work carried out as an employee.

Art. 349.- Occupational diseases. - Occupational diseases are acute or chronic conditions caused directly by the exercise of the profession or work carried out by the worker and that produce disability.

Art. 350.- Right to compensation. - The right to compensation includes all kinds of workers, except as provided in article 353 of this Code.

Art. 351.- [...] The employees and workers of the health and public health services will also enjoy the right granted in the previous article. "

(Codigo del Trabajo del Ecuador, 2012)

The Ecuadorian Standardization Service (INEN)

The Ecuadorian Standardization Service (INEN), The Ecuadorian Standardization Institute, INEN, was created on August 28, 1970, through Supreme Decree No. 357 published in Official Gazette No. 54 of September 7, 1970 and since its inception It has been acting as the national entity in charge of formulating the Ecuadorian Technical Standards, having as a basic concept satisfying local needs and facilitating national and international trade. (INEN, 2020)

INEN is a qualified entity in its practices and has actively participated in the development of the International Standard ISO 45001 since 2016 when the document

was in the draft stage of the International Standard (DIS). In September 2017, INEN attended the fifth plenary meeting of ISO / PC 283, in Malaysia, where the second Draft International Standard was approved, moving to the Final Draft International Standard (FDIS) stage, the same as it was approved in January 2018.

Currently, INEN is part of the ISO translation group, the Spanish Translation Task Force or STTF, in order to develop the official translation into Spanish of this Standard in conjunction with the standardization bodies of other countries such as the Spanish Association for Standardization (Ecuadorian Standardization Service, 2018).

CHAPTER 2 THE ISO 45001: 2018 STANDARD

International Standards Organization (ISO)

The International Standards Organization (ISO) emerged in 1926 from the International Federation of National Standardization Associations (ISA). This organization at first focused on the standardization of mechanical engineering products and processes. But it was the basis of what ISO would be because of its focus on the management of standardized production and engineering processes, it could be applied to other fields, so the ideas were promising, but that was ISA committees were dissolved years in 1942 during World War II. Subsequently, the United Nations Standards Coordination Committee in 1944 due to the lack of control in the quality of products, services and working life that occurred up to that time, reorganized the ISA committees to start the work that would later be formed. to the current ISO. (AAAS, 1944).

In 1946, committees made up of 25 countries and groups of experts were organized with the aim of creating a unified body to guarantee that products and services are safe, reliable and of good quality. In 1947, ISO officially came into existence with 67 technical committees (groups of experts that focus on a specific topic). (Markgraf, 2019) (International Standards Organization, 2019)

Currently ISO is an independent, non-governmental organization with 164 member states, maintaining its purpose of developing and providing international standards in response to market needs. These needs have led the organization to publish 22,676 quality standards to date, as well as adapting to the evolution in paradigms both in technology and in society, many standards have been supplanted or modified over time. (International Standards Organization, 2019)

The ISO 45001: 2018 Standard

The ISO 45001: 2018 standard was published on March 12, 2018. The standard specifies the requirements for an OH&S Occupational Health and Safety system. It provides one orientation of use to allow organizations provide places safe and healthy

work by preventing injuries, illnesses and deaths related to work and by proactively improving the performance of OHS. (International Standards Organization, 2019)

Unlike OHSAS 18001, ISO 45001 requires the incorporation of health and safety in the general management system of the organization, which requires that Management be the one who assumes a stronger leadership role in OSH. Similarly, employee training and education is needed to identify hazards and help create a successful safety program, which requires hazard risks to be assessed and remedied before they cause accidents and injuries, unlike OHSAS. 18001, which focused only on hazard control. (Rippe, 2018)

The standard a more than being based on the different versions of OHSAS 18001 also takes aspects of the standards ANSI / AIHA Z10-2012 and ANSI / ASSE, A10.38–2013 from the USA, CAN / CSA-Z1000-06 from Canada, or ILO-OSH 2001; Other documents published by the European Agency for Safety and Health at Work (EU-OHSA) have also been considered (Contreras Malavé & Gayo, 2019).

Due to the sui-generis characteristic that risk has, it is present in many places. The International Labor Organization estimates that some 2.3 million women and men worldwide succumb to work-related accidents or illnesses each year; this corresponds to more than 6000 deaths every day. Globally, there are around 340 million occupational accidents and 160 million victims of work-related diseases annually (International Labour Organization, 2017).

The standard introduces some new concepts or that have been reinforced by the greater emphasis on the responsibility of the organization, it must not only take care, it must promote the physical and mental health of workers and third parties due to their work. Similarly, it must preserve the reputation of the company, demonstrating its corporate commitment and compliance with the main requirements:

- Greater emphasis on risk-based thinking that is underpinned by increased senior management engagement and the importance of context analysis.

- The reinforcement of evidence of compliance, without representing a change or increase in legal requirements, being mandatory to comply with the law.
- Integration of processes in the management of the organization, developing indicators to demonstrate the continuous improvement of the processes carried out, planning the advance management of changes, and ensuring control and coordination of the purchase of goods and services.
- Generate a preventive culture in the organization through senior management leadership, which supports the expected results of the management system, assuming its accountability.
- Promotion of participation and the use of consultation at all levels, supporting committees and those in charge of safety and health, eliminating barriers and protecting against reprisals.
- Consultation and participation, including the assignment of functions of the workers' representatives.
- The contribution of personal protective equipment or training of workers on their job.
- Actions in the face of a serious and imminent risk. (Contreras Malavé & Gayo, 2019)

Requirements to obtain ISO 45001

For the ISO 45001 certification it is necessary to satisfy a set of requirements called Annex S L or L. As can be seen in Table 1, there are all the annexes that the ISO 45001 standard requires.

Table 1 Table of annexes of ISO45001

Description	Annexed
Understanding of the organization and its context.	4.1
Understanding the needs and expectations of workers and other stakeholders	4.2
Determination of the scope of the OSH management system	4.3
Leadership and worker participation	5.1
OSH policy	5.2
Roles, responsibilities and authorities in the organization	5.3
Hazard identification and assessment of risks and opportunities	6.1.2

Determination of applicable legal requirements and other requirements	6.1.3
Action planning	6.1.4
OSH objectives and planning to achieve them	6.2
Resources	7.1
Awareness	7.3
Communication	7.4
Eliminate hazards and reduce risks to OSH	8.1.2
Change management	8.1.3
Purchases	8.1.4
Preparation and answer to the emergencies	8.2
Compliance assessment	9.1.2
Internal audit	9.2
Management review	9.3
Incidents, non-conformities, corrective actions	10.2
Continuous improvement	10.3

Made by: ISO

Source: (International Standards Organization, 2019)

To make more sense of these, it is requested that there be a documentary record of certain annexes, as a reference to the act of the standard, for audits, internal evaluations or training.

Table 2 ISO45001 document management table

Description	Annexed
Scope of the OH&S management system	4.3
OSH policy	5.2
Roles, responsibilities and authorities in the organization	5.3
Evaluation of risks to OSH and other risks to the OSH management system, as well as its methodology and criteria to develop the evaluation	6.1.2
Determination of legal and other requirements	6.1.3
OSH objectives and planning to achieve them	6.2
Competence	7.2
Communication	7.4
Planning and operational control	8.1

Preparation and answer to the emergencies	8.2
Performance monitoring, measurement, analysis and evaluation	9.1.1
Compliance assessment	9.1.2
Internal audit: program and results	9.2
Management review	9.3
Incidents, non-conformities and corrective actions	10.2
Evidence of the results of continuous improvement	10.3

Made by: ISO

Source: (International Standards Organization, 2019)

These annexes can be summarized in a table of processes considered by ISO certified auditors; In the table you can see a summary of the annexes and their application, if these processes are fulfilled within the OSH system, the system would be very similar to the ISO 45001 standard, fulfilling the objective of this work:

Table 3 Table of descriptive processes of ISO45001

PROCESS	PROCESS ASPECTS TO BE CONSIDERED BY ISO
Consultation and participation of workers.	It is one of the key success factors for an OSH management system and therefore should be encouraged, for example, through two-way communication.
Hazard identification.	It must be continuous and proactive, and it must also have the participation of all those involved
Risk assessment for OSH and other risks for the OSH management system	It exceeds the mere evaluation of risks for the safety and health of workers. The Standard requires an analysis of the context in which the management system will be developed and assess the risks that may affect its development.
Identification of opportunities for OSH and other opportunities.	The system requires the search for possibilities of improvement, both in the safety and health of the workers, as well as that of the system itself.
Determination of applicable legal requirements and other requirements.	The system must ensure that the legal requirements and other requirements of the organization with an impact on health and safety are identified and known.

Communication	It covers both internal and external communication, including what, when, to whom and how to communicate.
Eliminate hazards and reduce risks to OSH.	In those cases, in which the hazards cannot be eliminated, you should seek to improve the degree of minimization of the assessed risks.
Change management.	It requires a proactive approach, so that, when foreseeing a change of any kind, it is also considered how it affects health and safety, being recommended the application of a process that ensures it.
Purchases	Health and safety must be integrated into the purchasing process, determining, evaluating and eliminating potential hazards, prior to the introduction of the product or service in the workplace.
Contractors	Provide for the incorporation of criteria related to occupational health and safety in awards and contracts
Preparation and response to emergencies.	Regarding this requirement, the Standard does not add essential aspects other than what is contemplated in Ecuadorian legislation
Monitoring, measurement, analysis and evaluation of performance.	An analysis of the effectiveness of all the processes that determine the health and safety management system must be carried out to identify weak points and aspects for improvement.
Compliance evaluation	It will cover legal compliance and the rest of the requirements identified for the management system.
Incidents, non-conformities and corrective actions.	Depending on the characteristics of the organization, they can be grouped into one or more processes. Determines the treatment of deviations observed in the implementation of the system.

Made by: ISO

Source: (International Standards Organization, 2019)

The Deming Cycle and ISO 45001

The Deming Cycle

Deming's continuous improvement cycle, also known as the PDCA circle (for its acronym in English: *plan-do-check-act*. In Spanish PHVA Plan-Do-Verify-Act) is a strategy of continuous improvement widely used in systems management that is based on scientific method, which focuses on a hypothesis that leads to one experiment and the result is evaluated to re-form a hypothesis based on the result of it.

Table 4 shows the Deming cycle applied to a general OSH management system graphically. This model is on which the ISO45001 standard is based.

The parts of the Deming cycle are four phases that, summarized, are understood as follows:

1. Planning: It is the beginning of the cycle, where all the pertinent information is collected, projections are made, the objectives and methodology of what you want to analyze are proposed.
2. Do: Supported by all necessary resources, policies and action plans will be implemented to seize opportunities, eliminate hazards, reduce risks, and achieve positive health and safety performance:
3. Verify: confirm that the expected results are achieved by monitoring and measuring the processes and actions taken to achieve the established objectives and the policy:
4. Current and continuous improvement: implement the necessary actions to continuously improve the effectiveness and efficiency of the management system, improving the performance of health and safety in the organization in each period of time (Henshall, 2017)

Annex L

An annex or clause in the ISO standard is a process, these have a sequential numbering that shows the phase in which the process is located. Annex L is a system

of clauses that address all the steps of the management system to be used in ISO standards, with the aim of making it easy to apply and standardize different standards within a single company.

In the past applying multiple ISO standards simultaneously in an organization resulted in redundancies and confusion. Since the ISO standards handled similar terms and processes, but in the details of the annexes they were very different, likewise, there were cases that generated repeated processes, the problem was becoming more noticeable with the introduction of new standards. In 2011, for the update of the ISO9001 standard, "Guide 83" was introduced, which was a standardization model of standards to improve the aforementioned shortcomings and its vision was to be based on the ISO9001 standard to be implemented to other standards without problems. Guide 83 continued to be developed theoretically until 2018 when it was introduced together with the ISO 45001 standard as an example of implementation to all future standards (International Register of Certificated Auditors, 2011).

In 2019 guide 83 changes its name to Annex L to maintain a sequential order for future improvements to it. The vision of Annex L is that future regulations are based on this and on the PDHV cycle for the order and compatibility of their processes. (The British Standards Institution, 2015)

The applicative annexes of Annex L are:

4. Scope.
5. Normative references.
6. Terms and definitions.
7. Context of the organization.
8. Leadership.
9. Planning.
10. Support for.
11. Operation.
12. Performance evaluation.
13. Improvements.

The Deming Cycle in Annex L

The ISO 45001: 2018 standard uses the Deming cycle as the basis of the management system as can be seen in tables 4 and 5, where it can be seen that the standard uses the Deming cycle in a cyclical way where each iteration is renewed seeking to improve. The annexes of the standard are 10, of these the first 3 annexes are introductory, giving historical references and introduction to the standard. As we can see in Table 5, it is from Annex 4 that the management system begins. The following can be divided into the 4 parts of the Deming cycle:

- **Planning:** From annexes 4 to 7 are planning processes, in these the context of the company is known, the scope of the standard, the responsibilities that the members of the company, available resources and everything necessary to prepare to implement the rule.
- **Make:** In Annex 8 is related to "do". In this clause called operations, the plans to be followed, the day-to-day of the organization will be generated and it is the execution of how to act in case of an emergency or the preventive actions to be taken.
- **Verify:** For annex 9 Performance evaluation, as its name indicates within the Deming cycle it has to do with "Verify", in this annex all control activities are carried out, both as auditing and data analysis.
- **Act:** Finally, Annex 10 has to do with responding with the results of the previous annex; This annex interprets the data obtained, seeks to correct the shortcomings and seek continuous improvement through control documents that must be reviewed by those in charge of OSH.

Table 4 Deming cycle OHS



Made by: Soledad Contreras Malavé y Sonia Cienfuegos Gayo

Source: (Contreras Malavé & Gayo, 2019)

Table 5 of the Deming cycle and Annex L



Made by: Soledad Contreras Malavé y Sonia Cienfuegos Gayo

Source: (Contreras Malavé & Gayo, 2019)

CHAPTER 3 SYSTEM BASED ON THE ISO 45001: 2008 STANDARD

Tapitex M&B Health and Safety at Work

The administration of OSH at Tapitex is the responsibility of management and human resources who enforce emergency plans, designate those responsible for and manage OSH resources. It is through these departments that historical documents and records of the company were accessed. These departments have been kept up to date and updated with the law, in addition to the latest events on signage, adequate security and informative posters of prohibition, warning, obligation, information, which serve so that all personnel have knowledge and assume commitment to the security system.

The company actively participated in the conversations of the Cuenca Chamber of Commerce for the formation of the 2020 Protocol on Basic Biosafety to Reactivate the Commercial Sector in The Cuenca Canton Against the Covid-19 Pandemic and in March participated in the pilot plan of this with a success in the preventive program. Prior to this, the company remained closed and the quarantine was complied with, since then it complies with the established protocols and following the regulations of the World Health Organization

Proposal for a manual based on the ISO45001 standard for the Tapitex company.

This study began by reviewing all the documents related to OSH at Tapitex. To obtain the pertinent documents, several meetings were held with the human resources department and with the heads of each department. An understanding of the operation of the company with respect to OSH was obtained, such as access to the platform of the Ministry of Labor where the manuals for the workers, the emergency plan and the approvals of the safety inspectors of the Ministry of Labor are found. and the firefighters of the city of Cuenca.

From the documents on the ministry's platform, the emergency action plans that have been carried out from 2012 to 2019 were obtained. These documents are part of the set of mandatory documents to have by the labor ministry, the emergency action plans

were performed by a certified labor management systems technician. These action plans are the documents most similar to an OSH system within the company since they detail certain points of what a continuous improvement system has, such as annexes 4.

The current documentation complies with the guidelines presented by the Ministry of Labor in its Internal Hygiene and Safety Regulations. Thus, complying with the law, but these plans do not present a system of continuous improvement; They serve as manuals on how to react to emergencies and include studies of areas and processes, as well as the appointment of managers, but the document, as mentioned, lacks quantifiable control methods, therefore the company presents an opportunity for improvement.

Analysis before Annex L

Annex 4.1 Context of the Organization

Table 6 Company file

Business name:	Tapitex M&B
Parent address:	Av. Hurtado de Mendoza and Jose Joaquín de Olmedo
Winery address:	El Vecino, calle del toril and Carapungo
Telephone:	072 861 861 ext. 1001 - 1020 - 1010 - 1057
Activity:	Wholesale of textile products
RUC:	0190383229001
Number of workers	56 people

Made by: David Balcazar

Source: (Espejo, 2019)

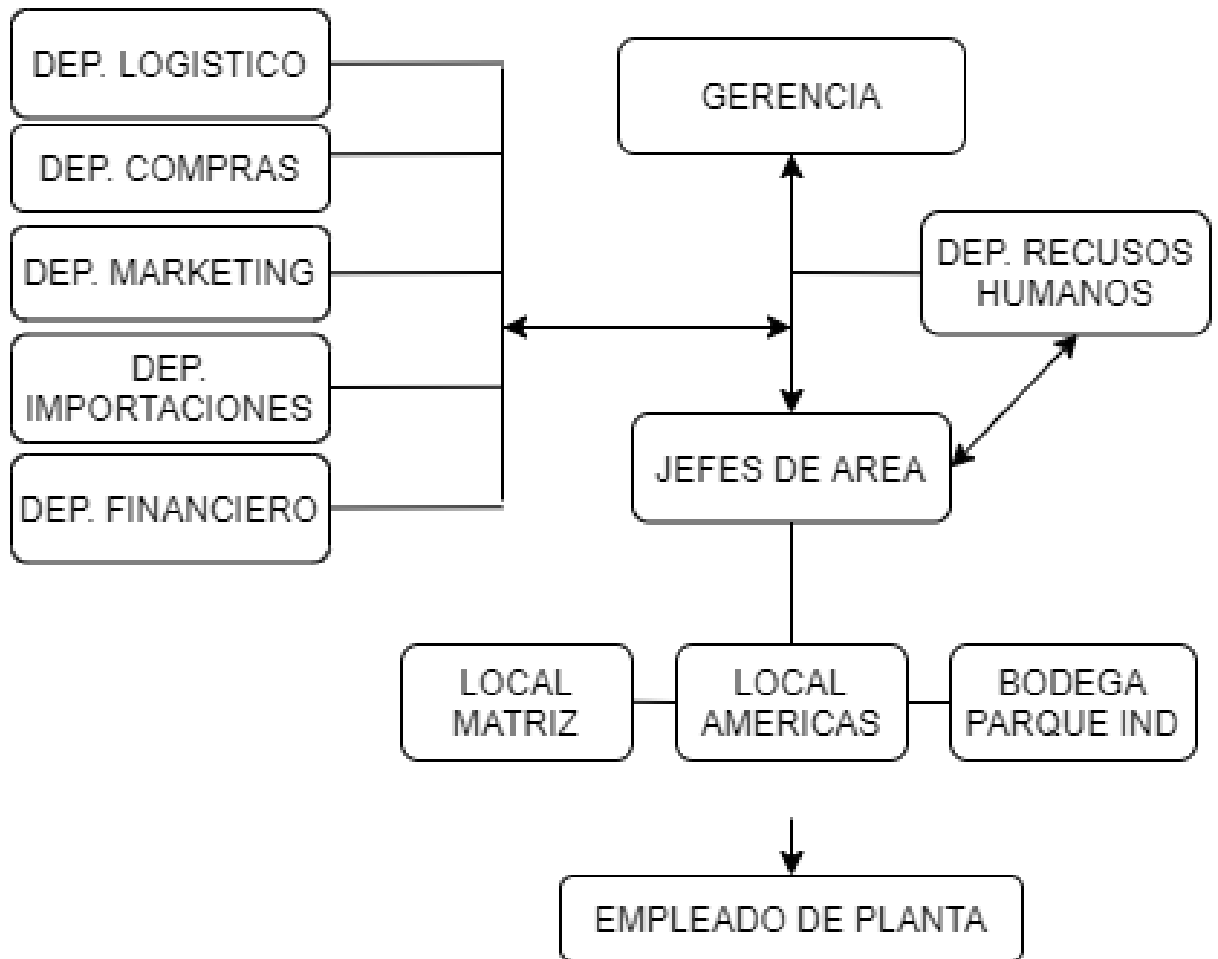
Company context

The Tapitex M&B company founded in 1991 in Cuenca, Ecuador. The company is dedicated to the distribution of materials for upholstery, carpentry and construction finishes to the major and minor. The company has 5 active facilities, these are divided

into 3 management areas known as Local Headquarters, Local Americas and Industrial Park Warehouse. Its areas of operation are all of Ecuador, mainly southern Ecuador.

Organization chart of company roles:

Table 7 Organization chart of the company.



Made by: David Balcazar

Description of the production process.

As an introduction and in a general way to form a diagram of the most important process of the company that is the sale and distribution where all the departments intervene to satisfy the client's needs.

Table 8 Organization chart of company processes.



Made by: David Balcazar

SWOT of the SST in Tapitex

Table 9 SWOT SST Tapitex.

ANÁLISIS FODA DE LAS SST EN LA EMPRESA TAPITEX

Internas	FORTALEZAS <ul style="list-style-type: none">-La empresa cuenta con un "Plan de Emergencia" compatible con varios anexos de la norma.-El departamento de Recursos Humanos con el apoyo de los bomberos de cuenca realizan capacitaciones a todo el personal.-Compromiso con la cultura de SST.	DEBILIDADES <ul style="list-style-type: none">-El seguimiento a la seguridad se realiza 2 veces al año.- El departamento de Recursos Humanos maneja todo lo relacionado a la seguridad y no esta complementado en el resto de departamentos.-Experiencia y conocimiento de los directivos en SST
	OPORTUNIDADES <ul style="list-style-type: none">-Apertura a nuevas fuentes de conocimiento-Facilidad de acceso a la tecnología.-Políticas de seguridad y salud.- Participación ciudadana.	AMENAZAS <ul style="list-style-type: none">-Amenazas ambientales y naturales.-Inestabilidad del sector.-Tasa de desempleo.-Crisis/recesión
Externo		

Made by: David Balcazar

Annex 4.2 Understanding the Needs and Expectations of Stakeholders

For Annex 4.2 to understand the needs of everyone involved, he made one a series of meetings with different departments, the results were reflected in Table 10 where the common denominator is the need for secure environments s an expectation of control and communication from the SST to the rest of the staff

Table 10 Table of Needs and Expectations regarding OSH in Tapitex.

Concerned parties		Needs and Expectations	Consultation Date
Internal	Retail Workers	Safe environments.	01/19/2020
		Well labeled products	
		Rapid response to emergencies	
		Video security network	
		Lockers	
		Dangerous Products Trainings	
		Hangers well stacked to prevent falls	
		Dry spaces	
		OSH control and communication	
	Office workers	Safe environments.	01/20/2020
		Being able to stretch the body.	
		Rapid response to emergencies	
		Video security network	
		Lockers	
		Dangerous Products Trainings	
		LED screens	
		Dry spaces	
		OSH control and communication	
	Warehouse Workers	Well-sealed toxic materials	01/20/2020
		Safe environments.	
		Well labeled products	
		Rapid response to emergencies	
		Video security network	

		Lockers	
		Dangerous Products Trainings	
		Hoists and functional elevators	
		Dry spaces	
		OSH control and communication	
External	Contractors	Safe environments.	01/19/2020
		Well labeled products	
		Rapid response to emergencies	
		Video security network	
		Lockers	
	Sellers of other companies	Safe environments.	
		Well labeled products	
		Rapid response to emergencies	
		Video security network	
		Lockers	
	Customers	Safe environments.	01/21/2020
		Well labeled products	
		Rapid response to emergencies	
		Video security network	
		Lockers	
Ability to act in emergencies			

Prepared: David Balcazar

Annex 4.3 Scope

The company has always focused its efforts on OSH to the development of Occupational Health and Safety (OSH) that allows people who are in the facilities of "TAPITEX M&B CIA. LTDA. " A proposed manual would continue this trend.

Annex 4.4 ISO45001 Management System

This annex does not apply to the company since it only applies to organizations that already apply an ISO45001 standard and it is where the work of past auditors is reviewed.

Annex 5.1 Leadership

It is the responsibility of the company's senior management to establish the OH&S policy and related OH&S objectives and are consistent with the strategic direction of the organization. It should also form a working group that supports people, to contribute to the effectiveness of the OSH management system. This group made up of Human Resources personnel, department heads, and company coordinators

Annex 5.2 OSH Policy

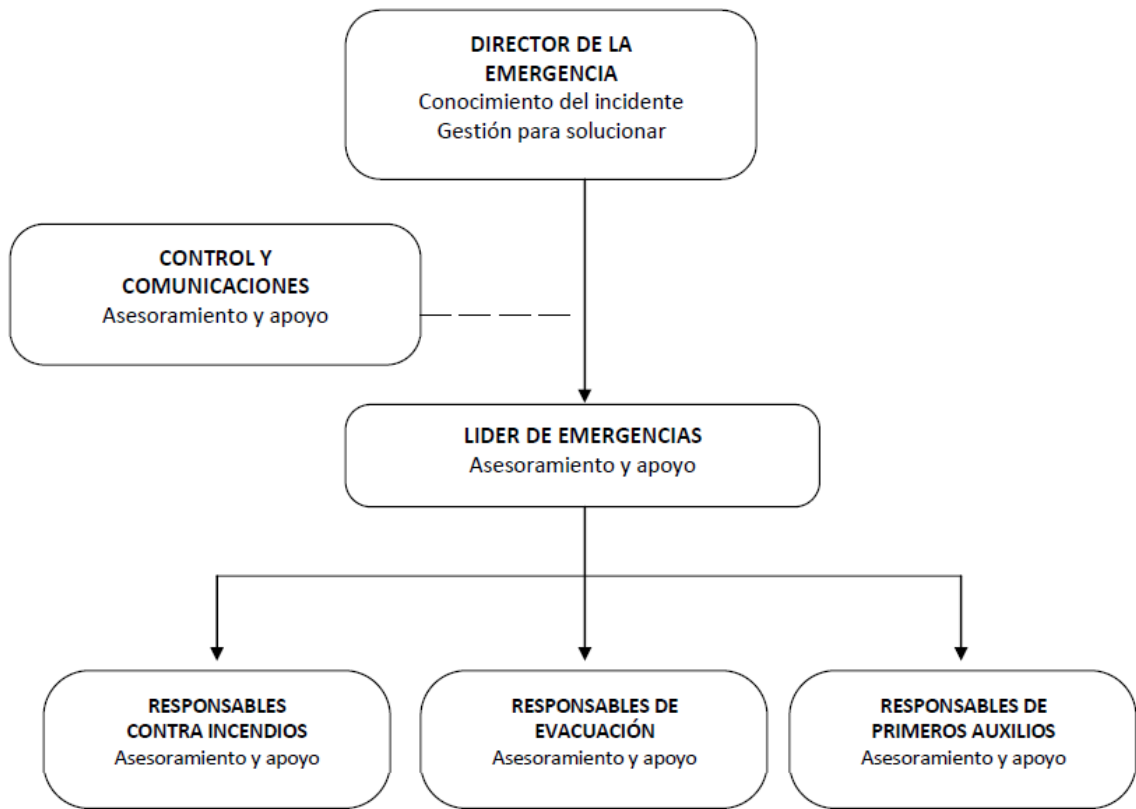
The OSH policy for the company. This policy is not written in a formal document, the closest thing to a company policy of the OHS is in the "Internal Work Regulations" in its Art 55, numeral 20 "Subject to occupational risk prevention measures that dictated by the Company, as well as complying with the sanitary, hygienic prevention and safety measures such as the use of devices and means of protection provided by them. "

The rule calls for the policy to be an independent document.

Annex 5.3 Roles and Responsibilities

The roles and responsibilities that were designed in the "Emergency Action Manual" as can be seen in table 11:

Table 11 Roles in an emergency at Tapitex.



Made by: Nicolay Espejo.

Taking this structure would restructure the departments in charge of OSH, thus a suggestion is presented in Table 10 from where the personnel who will be responsible for OSH should come from.

Table 12 Suggestion of Change in Responsibilities at Tapitex.

TITLE OF THE RESPONSIBLE FOR THE OSH	DEPARTMENT
EMERGENCY DIRECTOR	MANAGEMENT
CONTROL AND COMMUNICATIONS	HUMAN RESOURCES
EMERGENCY LEADER	AREA SUPERVISOR
RESPONSIBLE AGAINST FIRE	DESIGNATED STAFF
RESPONSIBLE FOR EVACUATION	AREA SUPERVISOR
RESPONSIBLE FOR FIRST AID	AREA SUPERVISOR

Made by: David Balcazar

Annex 6.1.2 Risk Assessment AND COVID -19

Through the risk assessment carried out in 2019 for the company using the OHSAS 18001 method, it was found that the present risks carried out by an Engineer endorsed for their measurement for the legal compliance of safety at work presented to the Ministry of Labor. For the current risk assessment study, we must add the arrival of COVID-19, which was a fundamental factor in making a change to this table by adding a new entry as Pandemic.

Table 13 Probable threats at Tapitex.

THREAT IDENTIFICATION	
TYPE OF RISKS	PROBABILITY OF OCCURRENCE
EARTHQUAKES	SHORT
FIRE	HIGH
DELINQUENCY	HALF
RISK AREAS	SHORT
PANDEMIC	HIGH

Made by por: David Balcazar

Source: (Espejo, 2019)

The risks are interpreted as follows:

- Simple emergency (Level 1). Situation in which the risk or accident can be managed in a simple way, using the resources of the company and local relief.
- Local Emergency (Level 2). Situation of risk or accident that requires the intervention of teams designated and explicitly instructed for them. They affect the facility of occurrence and require evacuation.
- General Emergency (Level 3) Situation of risk or accident that puts the safety and integrity of people at risk, immediate eviction is necessary and the activation of alarms that warn of the emergency and external help.

Since the operation of the company until 2020, no level 2 or 3 outbreaks or significant emergencies had occurred. Until 6 members of the company were infected with COVID-19 in April 2020. This led to the application of a Local Emergency plan of level 3, which was successful in avoiding more early infections together with the Ministry of Health and reaching the recovery of personnel without claims to third parties.

Annex 6.1.3 Legal Requirements

The Company TAPITEX M&B CIA. LTDA, is a legally constituted legal entity, with its main domicile at Ave. Hurtado de Mendoza 2-17 and José Joaquín de Olmedo in the city of Cuenca, in application of the provisions of article 64 of the Labor Code and with the purpose that it has the legal effects provided for in numeral 12 of article 42; letter a) of article 44; and numeral 2 of article 172 of the same Body of Laws, will apply, in a complementary way to the provisions of the Labor Code, the following internal regulations in its headquarters and agencies at the national level and with the character of mandatory for all executives, employees and company workers.

Annex 6.2 Objectives and Planning.

The company has objectives independent of the standard, these included in its 2019 Emergency Action Manuals. These objectives cannot be measured as the standard

requires, because they must be quantifiable, the current objectives are only qualitative. The objectives for the standard can be interpreted in a calendar document of the objectives to be achieved that has a monitoring table that must be periodically reviewed.

Annex 7.1 Resources

The organization shall determine and provide the necessary resources for the establishment, implementation, maintenance and continuous improvement of the OH&S management system.

Within the analysis, it was found that the resources allocated to OSH are administered by Management and the Human Resources Department.

There is no document that focuses purely on OSH expenditures.

Annex 7.2 Competences

It is intertwined with Annex 5.3 where it is shown here in the individual manuals for roles and this can be seen in the company in the Employee Manual where it specifies the responsibilities that each employee also has in terms of OSH.

Annex 7.3 Awareness

During the drills and training carried out by the fire department in 2019 and endorsed by the Engineer and Environmental Consultant Nicolay Espejo; Courses were given with the objective of socializing the importance of continuing to comply with OSH, the benefits to personal integrity were communicated by being trained to act in the event of risk and emergencies.

Annex 7.4 Communication

The communication processes established by the organization should allow the collection, updating and dissemination of information. You should ensure that relevant information is provided to all relevant workers and stakeholders and that they receive it and that it is understandable.

Internal communication

Multidirectional face-to-face:

- Committees or working groups.
- Early meetings.
- Induction or training activities.

External Communication

Remote multi-directional:

- WhatsApp groups or smartphone applications.

Directional mono

- Manuals or guides (reception manual, emergency guides).
- Procedures or work instructions (contractors, temporary agencies).

Annex 8.1.3 Change Management

The organization shall establish processes for the implementation and control of temporary and permanent planned changes that impact OH&S performance, including changes to existing products, services, and processes, including:

1. The organization of work.
2. The working conditions.
3. The teams.
4. The workforce
5. Changes in legal requirements and other requirements;
6. Changes in knowledge or information about OH&S hazards and risks.

The standard within its instructions offers several examples of a file for change management, this model can be easily applied by those in charge of OSH.

Annex 8.1.4 Purchases

Procurement processes should be used to identify, assess and eliminate hazards and reduce OSH risks associated with, for example, hazardous products, substances or

materials, raw materials, equipment or services, prior to their introduction into the workplace.

In the company, the purchases of materials for OSH are made by both Management and Human Resources, operating in oral agreements, the company should bring a document destined to the expense in OSH for its control.

Annex 8.2 Emergency Preparedness and Response

In the event of an emergency in the face of the aforementioned risks, an emergency action manual was prepared and has been updated since the company was founded.

Likewise, as a response to the health emergency of COVID-19, the company participated jointly with other companies and especially the collaboration of the Cuenca Chamber of Commerce in the development of a Biosafety Protocol to return to commercial activities.

Annex 9.1 Performance Monitoring, Measurement, Analysis and Evaluation

The company does not have mechanisms compatible with the standard to carry out its monitoring. The monitoring mechanisms within Tapitex are empirical and not documentary. While the standard requires that the results can be taken qualitatively and quantitatively

Annex 9.2 Internal Audit

The company has had external audits since its constitution, presented in its "Emergency Action Manuals" in which the company was analyzed. There has never been an internal control of the company, so the standard provides a model that can be used by the entire population of the company. The selection of these personnel must be when the norm designated by the Emergency Director is reviewed. Preferable randomly and from different departments

The company does not have a guide document for the Internal Audit

Annex 10. 1 Incidents, Non-Conformities, Corrective Actions

The organization shall establish, implement, and maintain processes, including reporting, investigating, and taking actions to determine and manage incidents and nonconformities. The organization shall establish, implement, and maintain processes, including reporting, investigating, and taking actions to determine and manage incidents and nonconformities.

The company does not have a document on accidents and what has been done to mitigate them. Due to the fact that emergencies have been almost nil, it has led to the company not having a follow-up document.

Conclusions of the manual proposal based on the ISO 45001 standard for the Tapitex company.

As a result of the investigation of the information collected, it was found that the company had annexes that are partially approved by the standard and which only need to be further developed. As can be seen in table 14 where the Annexes that the company complies with are outlined. But the main finding is that the company does not comply with the annexes related to Verify and Act. Which means that the company is only reactionary and not preventive, since lacking these annexes, it is not possible to speak of a cyclical system as feedback is hindered and it does not present a continuous improvement system that can be easily applied.

Fortunately, another of the analyzes shows that the company has not presented serious accidents or injuries since consultations and worker participation are carried out. This is not a reason not to improve the OSH system. This is how the Proposal for a manual based on the ISO45001 standard was created for the Tapitex company. A document that is not intended to be the OSH management system, but rather a basis for improving the current system. For this, the incomplete and missing annexes were added suggestions directed to the company so that it can change its situation and form internal documents that can control, monitor and standardize processes; thus, complying with the missing annexes in order to have a true process manual based on the ISO 45001: 2018 standard, annex L and continuous improvement.

Table 1 4 Annexes that the standard complies with.

Description	Annexed	Complies
Understanding of the organization and its context.	4.1	YES
Understanding the needs and expectations of workers and other stakeholders	4.2	YES
Determination of the scope of the OSH management system	4.3	YES
Leadership and worker participation	5.1	YES
OSH policy	5.2	NOT
Roles, responsibilities and authorities in the organization	5.3	PARTIALLY
Hazard identification and assessment of risks and opportunities	6.1.2	YES
Determination of applicable legal requirements and other requirements	6.1.3	YES
Action planning	6.1.4	NOT
OSH objectives and planning to achieve them	6.2	PARTIALLY
Resources	7.1	NOT
Awareness	7.3	YES
Communication	7.4	YES
Eliminate hazards and reduce risks to OSH	8.1.2	YES
Change management	8.1.3	PARTIALLY
Purchases	8.1.4	PARTIALLY
Preparation and answer to the emergencies	8.2	YES
Compliance assessment	9.1.2	NOT
Internal audit	9.2	NOT
Management review	9.3	NOT
Incidents, non-conformities, corrective actions	10. 1	NOT
Continuous improvement	10.3	NOT

|Made by: David Balcazar

Source: (Espejo, 2019)

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