



**Escola Tècnica Superior
d'Enginyeria Química**



FINAL MASTER PROJECT

MASTER IN ENVIRONMENTAL ENGINEERING AND SUSTAINABLE ENERGY

**Implementation of an Environmental Management
System in SCHWARTZ-HAUTMONT S.A.**

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Tarragona, November 2021

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Nomenclature

SHCM: Schwartz-Hautmont Construcciones Metálicas S.A.

ISO: International Organization for Standarization.

EMS: Environmental Management System.

EMAS: Environmental Management and Audit System.

EMSM: Environmental Management System Manual.

SP: Specific Procedure.

TI: Technical Instruction.

IMS: Integrated Management System.

SWOT: Strengths, Weaknesses, Opportunities, Threats.

CAME: Correct, Adapt, Maintain, Explore.

HSE: Health, Safety and Environment

1. Introduction

This project develops the study, design and implantation of an Environmental Management System based on the ISO 14001: 2015 standard for the Spanish corporation Schwartz-Hautmont Construcciones Metálicas S.A.

This project has been elaborated from the study and learning of the theoretical and practical knowledge taught in the Environmental and Energy Management course directed by professors Julio Rodrigo and Pol Peralta, and as a student in practices in the company Schwartz-Hautmont Construcciones Metálicas S.A, carried out during the 2021-2022 academic year of the University Master's Degree in Environmental Engineering and Energy Sustainability at the URV.

All the images have been realized by Miquel Morales, including the modification of figures, maps and other illustrations.

2. Project justification

Schwartz-Hautmont Construcciones Metálicas S.A. is a Spanish private corporation dedicated to the steel construction business located in the province of Tarragona, Spain. In recent decades, the multinational has been consolidating itself as a leading company at a national and international level in a sector that over the years has been consolidating itself as one of the most important in the most developed regions and economies. Therefore, it is an organization that involves a large volume of personnel, resources, activities and different processes and that is not exempt from generating environmental impacts, some of great importance, associated with the processes and activities of a sector dedicated to construction in steel.

In order to improve the environmental performance of the organization, be able to access markets with more restrictive environmental requirements and solve or improve certain environmental problems such the poor hazardous waste management, comply with the environmental legal requirements and specifications, a better control of the atmospheric emission sources, control the high consumption of energy, natural resources and raw materials, among others, Schwartz-Hautmont Construcciones Metálicas S.A. has decided to implement an Environmental Management System based on the ISO 14001:2015 standard in the facilities located at the main headquarters which include the functions of the organization, departments and hierarchical structure developed and the activities, processes and products carried out there.

2.1. Environmental Management System

Regarding the Environmental Management System (EMS), it can be defined as a structured management system, which is integrated in the global activity of the organization and it is used to manage the environmental aspects, to comply with legal requirements and stablish possible risks and opportunities (Calso & Pardo, 2018).

As explained in García (2018), some of the benefits that can be highlighted from the implementation of an Environmental Management System are:

- Compliment with environmental legislation.
- Compliment with consumer demands.
- Improvement of the company's marketing image.
- Improvement in the use of resources.
- Indirect improvement of the quality of the product/service.
- Improvement of the image of the company in the community.
- Policy consistency.
- It facilitates the work of department/area directors.
- Reduction of the operating cost.
- Better communication between departments/areas.
- Consistency of relationships with suppliers.
- Organization and satisfaction of interest groups.

Nowadays all the organizations are obliged to comply with specific environmental legal requirements, regardless of the requirements and specifications established in the ISO 14001:2015 standard. There are two different types of Environmental Management System: based on the ISO 14001:2015 standard, at international level and the requirement of the Community Environmental Management and Audit System (EMAS) at the European level. Both includes the same requirements and offers the same benefits, but the EMAS only has recognition in Europe (García, 2008).

Finally, it should be noted that there is no doubt that there is a need to implement an Environmental Management System in organizations, being in our case the most intuitive decision the implementation of an Environmental Management System based on the international standard ISO 14001:2015 and its subsequent certification, allowing Schwartz-Hautmont S.A. to demonstrate its commitment to the environment.

3. General and specific objectives definition

In this chapter it will be exposed the general objective which briefly explains the aim of the final master's project and the specific objectives definition which will define sequentially the phases established to comply with the general objective.

The general objective of this project is to develop and formalize an Environmental Management System in the facilities located at the main headquarters based on the ISO 14001:2015 standard for the company Schwartz-Hautmont Construcciones Metálicas S.A, with the aim of reducing the impact generated on the environment by the activities and processes of the company, implementing the phases of the Environmental Management System itself based on the context and needs of the multinational.

Regarding the goals definition, some of them are the phases of the Environmental Management System itself, among others:

- Formalize an Environmental Management System based on the ISO 14001:2015 standard and the characteristics and needs of the company.
- Determine the company's risks and opportunities and perform the actions to face it or profit it and define the needs and expectations of the interested parts and its scope.
- Design an Environmental Management System Manual which will include all the necessary phases and components that make up the system's manual in compliance with the ISO 14001:2015 requirements.
- Establish all the necessary documented information required and in compliance with the ISO 14001:2015 requirements.
- Establish the implementation phases of the Environmental Management System including an implementation schedule.
- Establish the work methodology to integrate the ISO 14001: 2015 Standard with the Quality (ISO 9001:2015) and Safety and Health at Work (ISO 45001:2018) standards in order to conform to an Integrated Management System.

4. Company description and context analysis

The context of an organization is used to establish, implement, maintain and continuously improve the Environmental Management System with the aim to delimit the important issues that may affect the way in which the organization manages its environmental responsibilities defining the strategic objectives and planning of the system to be implemented (Calso & Pardo, 2018).

However, it is necessary to mention that the ISO 14001:2015 standard does not specify a methodology to carry out this context analysis and it will depend on the characteristics and needs established of our organization (Valdés, Alonso, Calso, & Novo, 2016).

In the following chapters it will be presented a brief company description and the analysis context of Schwartz-Hautmont S.A. and the implemented strategies.

4.1. Company description

Schwartz-Hautmont Construcciones Metálicas S.A. (SHCM) is a private Spanish corporation founded in 1963 with facilities in different locations distributed and located in the province of Tarragona, Spain. The company is dedicated to the steel construction business, developing various processes and offering a wide range of related products and services. Although the firm's history is short, Schwartz-Hautmont S.A has been establishing as a leading company nationally and international in a sector that during the last decades has been consolidating as one of the most important sectors in the most developed regions and economies.

4.2. Context analysis: the SWOT matrix

The SWOT analysis or the SWOT matrix (Strengths, Weaknesses, Opportunities and Threats) is a strategic methodology applicable to any type of organization that allows a detailed analysis of the current situation of the organization, considering both internal factors (strengths and weaknesses) and external factors (opportunities and threats) that affect it with the aim of identify and establish the transcendental points of the company in order to have a basis to be able to make decisions to contribute with the continuous improvement (Gürel, 2017).

As it was mentioned, the SWOT analysis is based in the following four factors based on Gürel (2017), description:

- **Strengths:** considered as an internal factor, it represents those characteristics, capacities and resources of the organization itself that add value or are more advantageous which are helpful to achieve the organizational objectives.
- **Weakness:** considered as an internal factor, it represents those characteristics, capabilities, elements and actions of the company itself that are negative or unfavorable and that are considered detrimental to achieving the organizational objectives.
- **Opportunities:** considered as an external factor, it represents those situations or positive factors of the organization's environment which have the possibility of being exploited and are helpful to achieve the organizational objectives.
- **Threats:** considered as an external factor, it represents those disadvantageous situations or conditions that jeopardizes the actualization of an activity and that are considered detrimental to achieving the organizational objectives.

Then, in the following table (Table 1) it is shown the SWOT analysis table of Schwartz-Hautmont S.A.:

Table 1: SWOT Analysis. Source: based on Gürel, 2017.

	Strengths	Weaknesses
Internal Factors	<ul style="list-style-type: none"> • National and international coverage. • Ability to adapt to changing products and markets. • Experience and knowledge of the national and international market. • Fixed clients and continually new clients. • Constant business growth. 	<ul style="list-style-type: none"> • Order, maintenance and cleaning that can be improved in warehouses and outdoor areas. • Poor training and environmental awareness of the workers. • Absence in the criterion of waste segregation by the workers. • Breaches of legal requirements. • High consumption of energy and raw materials. • Sources of atmospheric emissions.
External Factors	Opportunities	Threats
	<ul style="list-style-type: none"> • Increased environmental awareness by society. • New trends in the national and international market. • New cleaner technologies. • Company committed to the environment. 	<ul style="list-style-type: none"> • Added costs for mismanagement and waste treatment. • Legal requirements and strict environmental regulations.

4.2.1. Implemented strategies: the CAME matrix

In order to complement the definition of the company's strategic plan and based on the aspects identified through the analysis of the previous SWOT matrix, the CAME analysis will be carried out.

The CAME analysis or CAME matrix (Correct, Adapt, Maintain, Explore) is a strategic methodology that allows establishing the strategic plan of the company based on the factors identified in the initial SWOT analysis, so it is considered as a complementary methodology to maintain the intrinsic strengths, correct the organization's own weaknesses, exploit the external opportunities and face the external threats (Betancourt, 2018).

The CAME analysis will be based on the following four strategies according to Betancourt (2018):

- **Offensive strategies:** these actions are focused on improving the current situation of the company by exploiting opportunities and maintaining and/or reinforcing strengths.
- **Defensive strategies:** these actions are focused on avoiding a worst current situation of the company by facing threats and maintaining strengths.
- **Re-orientation strategies:** these actions are focused on transforming the situation by making changes that eliminate our weaknesses and create new strengths by correcting weaknesses and exploiting opportunities.
- **Survival strategies:** these actions are focused on eliminating the negative aspects that harm the company, correcting the weaknesses and facing threats.

Finally, in the following table (Table 2) it is shown the CAME analysis table of Schwartz-Hautmont S.A.:

Table 2: CAME Analysis. Source: based on Betancourt, 2018.

Offensive Strategies	Defensive Strategies
<ul style="list-style-type: none"> • Increase the number of customers. • Opening up to markets with higher environmental requirements. 	<ul style="list-style-type: none"> • Invest in waste management (new containers, containers relocation studies, upgrade containment measures, etc). • Provide services in accordance with the needs, requirements and expectations of customers in environmental terms.
Re-orientation Strategies	Survival Strategies
<ul style="list-style-type: none"> • Implement training plans on proper waste management and environmental legislation. • Implement measures to improve savings in the consumption of resources and energy efficiency. • Implementation of a new technologies more efficient and cleaner. 	<ul style="list-style-type: none"> • Establishment of an EMS to strengthen, define and delimit all environmental initiatives of the organization. • Ensure environmental legal requirements. • Train and raise awareness of environmental issues among employees. • Train company members and stakeholders on environmental issues.

5. Stakeholder's identification

The stakeholders (or interested parts) are defined as any organization, person or group of people that may affect or may be affected by the processes, activities and decision-making carried out in our company (ISO 14001:2015). Consequently, an organization is expected to have a general understanding of the needs and expectations expressed by internal and external stakeholders which the organization determined as relevant (Calso & Pardo, 2018).

The requirements of the interested parties should not necessarily be requirements of the organization, being imperative to consider which of these should be incorporated into the environmental management system to comply with them and then use them as input information for the identification of risks and opportunities (Calso & Pardo, 2018).

In our case, based on what was considered above, the established criterion has been to consider and understand the interests and expectations of the possible stakeholders and how these can be integrated into the design of the Environmental Management System. In this way, in the following table (Table 3) it is established that interested parties that can influence the organization, classified as internal and external and with their respective needs and expectations and the EMS integration requirements, based on the procedure described by Calso & Pardo (2018).

Table 3: Interested parts identification. Source: based on Calso & Pardo, 2018.

Interested parts	Needs and Expectations	EMS Requirements
General Management (internal)	<ul style="list-style-type: none"> • Compliance with current environmental legislation and applicable regulations for the activities and processes developed by the company. • Seek the continuity and reasonable growth of the organization based on sustainability and correct environmental performance. 	<ul style="list-style-type: none"> • Compliance with current environmental legislation and applicable regulations. • Periodic meetings with managers of the production centers and with the directors of operational areas for the control of works/projects for their correct environmental performance. • Approval of the monitoring of the environmental objectives plan.
Employees (internal)	<ul style="list-style-type: none"> • Work in a company committed to environmental performance. • Work in spaces free of contamination. • Access to information on the environmental performance of the organization. • Contribute to the improvement of the environmental company's image. 	<ul style="list-style-type: none"> • Compliance with current environmental legislation and applicable regulations. • Environmental training for employees. • Access to information on the environmental performance of the organization.

<p>Service providers (internal/external) and Material providers (external)</p>	<ul style="list-style-type: none"> • Receive periodically and/or access to information on the environmental performance of the organization. • Maintain the commercial relationship with the company and expand the offer of its products and/or services. • Offer products and/or services that meet high standards of quality, safety and Environmental protection. 	<ul style="list-style-type: none"> • Compliance with current environmental legislation and applicable regulations. • On-line platforms to coordinate the commercial relationship activities. • Access to both required information and information on the environmental performance of the organization. • Products and services offer that comply with environmental legislation and contribute to environmental protection and sustainability.
<p>Public administration and Environmental authorities (external)</p>	<ul style="list-style-type: none"> • Compliance with current environmental legislation and applicable regulations for the activities and processes developed by the company. • Maintain adequate environmental conditions for the surrounding communities. • Periodically receive and/or access information on the environmental performance of the organization. • Maintain the commercial relationship with the company. 	<ul style="list-style-type: none"> • Compliance with current environmental legislation and applicable regulations. • On-line platforms to coordinate, control and compliance with environmental the legislation. • Access to both required information and information on the environmental performance of the organization. • Offer of products and services that comply with environmental legislation and contribute to environmental protection and sustainability.
<p>Customers (external)</p>	<ul style="list-style-type: none"> • Receive a service and/or products at affordable prices that meet high standards of quality, safety and protection of the environment. 	<ul style="list-style-type: none"> • Offer of products and/or services that comply with environmental legislation and contribute to environmental protection and sustainability.
<p>Adjacent communities and neighborhood associations (external)</p>	<ul style="list-style-type: none"> • Seek to maintain the appropriate environmental conditions for the activities and/or processes developed by the company. 	<ul style="list-style-type: none"> • Compliance with current environmental legislation and applicable regulations.

6. Environmental Management System Manual

The Environmental Management System Manual (EMSM) can be defined as a reference tool of the core elements and documentation of the system necessary for the maintenance and control the Environmental Management System (Nueva ISO 14001, 2022).

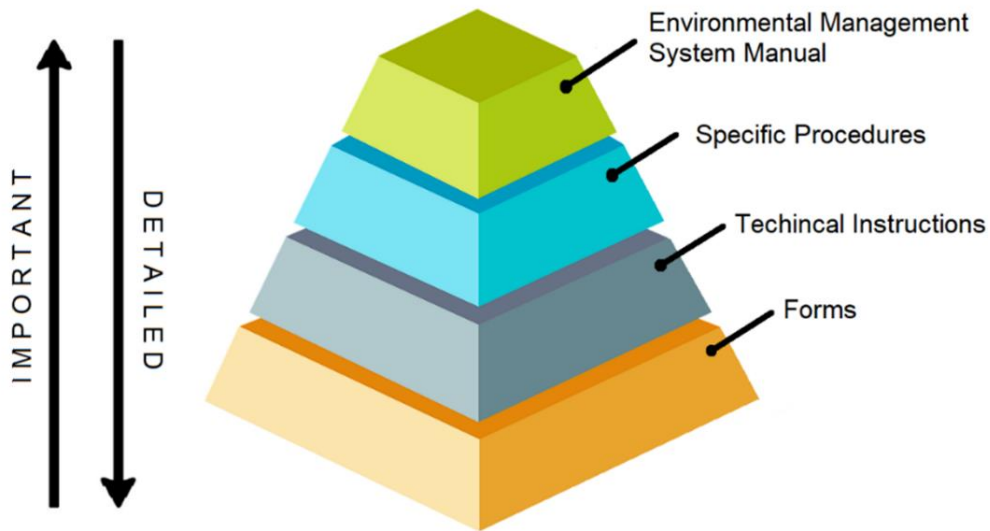
On the other hand, it is necessary to emphasize that the ISO 14001:2015 standard does not specify the Environmental Management System Manual as a requirement, but it is necessary to establish the documented information that it contains (ISO 14001:2015, 2015). In this way, the design of the company's Environmental Management Manual aims to contain all the core documentation of the Environmental Management System, which is intended to be concise and easy to understand.

In the Annex 0 is designed the Environmental Management System Manual of the company which will include the core elements of the system and their interaction, including all the necessary phases and components that make up the system's manual in compliance with the ISO 14001:2015 requirements.

7. Documented information

Previously to the establishment of the documented information, it is convenient to know which will be these documentations are and how we should organize them. In order to define how the format of these documents should be, the following figure (Figure 1) shows the documentation in a hierarchical manner as it has been decided to be established and designed, so that it is clear, easy to use and consistent with the purpose that it seeks and that complies with the requirements of the regulations (Gisbert & Contreras, 2015).

Figure 1: Documented information hierarchy. Source: own elaboration.



As established in Valdés, Alonso, Calso & Novo (2016), efforts have been made to establish a minimum documentation that must be included in the preparation of the Environmental Management System, in addition to the pertinent information required based on the documentary needs that the company requires. Thus, in the following table (Table 4) it is shown the summary of the documented information of the organization which specifies the register code, the project chapter reference and the document title.

Table 4: Documented information summary. Source: own elaboration.

Chapter	Ref. Code	Document Title
6.5	-	Environmental Management System Scope
6.6	-	Environmental policy
4	-	Risks and opportunities
ANNEX 0	EMSM-01	Environmental Management System Manual
ANNEX I	SP-01	Documented information control

ANNEX II	SP-02	Environmental Aspects identification and evaluation
ANNEX III	SP-03	Legal and other requirements
ANNEX IV	SP-04	Environmental objectives plan
ANNEX V	SP-05	Operational planning and control procedures
ANNEX VI	SP-06	Emergency preparedness and response procedure
ANNEX VII	SP-07	Internal auditory procedure
ANNEX VIII	SP-08	Nonconformities control procedure
ANNEX 0	EMSM-01-01	Personal job file
ANNEX 0	EMSM-01-02	Personal experience and training acquired
ANNEX 0	EMSM-01-03	Toolbox
ANNEX 0	EMSM-01-04	Measurement equipment record
ANNEX 0	EMSM-01-05	Measurement record
ANNEX 0	EMSM-01-06	Requirements record evaluation
ANNEX I	SP-01-01	Documented information control and maintenance
ANNEX II	SP-02-01	Environmental aspects evaluation in normal conditions
ANNEX II	SP-02-02	Environmental aspects evaluation in emergency conditions
ANNEX III	SP-03-01	Legal requirements and other applicable requirements
ANNEX IV	SP-04-01	Environmental objectives plan
ANNEX VI	SP-06-01	Emergency response plan
ANNEX VI	SP-06-02	Emergency drill plan
ANNEX VII	SP-07-01	Audit program
ANNEX VII	SP-07-02	Audit plan
ANNEX VII	SP-07-03	Finding's report
ANNEX VII	SP-07-04	Audit report
ANNEX VIII	SP-08-01	Nonconformity informs and corrective action
ANNEX V	TI-01	Waste Management
ANNEX V	TI-02	Natural resources consumption
ANNEX V	TI-03	Soil and water discharges control
ANNEX V	TI-04	Noise control
ANNEX V	TI-05	Atmospheric emissions control

Then, in the following chapters, all the necessary documented information will be established in compliance with the requirement of the ISO 14001: 2015 standard, in addition to including all references to the location of the relevant documentation.

7.1. Documented information control

As established by the standard, the organization has the obligation to have, control and maintain all the necessary documented information which has tangible evidence within the organization's Environmental Management System (ISO 14001:2015).

However, it is worth mentioning that the regulations do not specify a nomenclature, terminology or a specific format for this documentation. In this way, through the documented information control, the typology, formats, coding and, in general, the common patterns for all the documents referenced as information will be specified for Schwartz-Hautmont S.A. Environmental Management System.

The specific procedure which is controlled this information is established in the annex I. The purpose of describe the methodology used in Schwartz-Hautmont S.A. to develop, control and maintain the required documented information by the standard and the necessary information to ensure the Environmental Management System implantation.

In addition, below is the documented information attached to the Annex I:

- SP-01: Documented information control.
- SP-01-01: Documented information control and maintenance.

7.2. Identification and evaluation of environmental aspects

The implementation of an Environmental Management System allows the organizations to identify those environmental aspects derived from its activities which can generate an environmental impact and consequently take the measures to eliminate or minimize their effects (Sociedad Pública de Gestión Ambiental, 2009).

In this way, the processes carried out to be able to act on environmental impacts will be developed, initially with an identification of environmental aspects, to then evaluate and value them and, consequently, establish the pertinent actions to act on them and minimize their impact.

The specific procedure which is controlled this information is established in the annex II. The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to identify and evaluate the environmental aspects originated as a consequence of the activities and processes carried out in the company, in order to determine those that have significant impacts on the environment.

In addition, below is the documented information attached to the Annex II:

- SP-02: Identification and evaluation of environmental aspects.

- SP-02-01: Environmental aspects evaluation in normal conditions.
- SP-02-02: Environmental aspects evaluation in emergency conditions.

7.3. Legal and other requirements

As is defined in Calso & Pardo (2018) the organization must establish a methodology or procedure by which the legal requirements and other requirements applicable and/or adopted by the organization can be accessed, consulted, updated and evaluated.

Likewise, the person responsible for the access and management of legal requirements must be detailed, in addition to determining the applicability of the requirements within the activities carried out in the organization, the frequency of searching for the legislation, as well as the sources consulted and the place or registry where they will be incorporated. (Calso & Pardo, 2018).

The specific procedure which is controlled this information is established in the annex III. The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to identify and evaluate the environmental legal requirements and other requirements which affect the company as a consequence of its activities and processes.

In addition, below is the documented information attached to the Annex III:

- SP-03: Legal and other requirements.
- SP-03-01: Legal requirements and other applicable requirements.

7.4. Environmental objectives plan

As it is defined in Valdés, Alonso, Calso & Novo, (2016) the process of establishing objectives in a management system is essential to achieve the improvement of the results ensuring that the Environmental Management System is effective in advancing a process continuous improvement.

In order to set the environmental goals, the organization shall establish the objectives for the levels and functions that are relevant, considering the significant environmental aspects, the legal requirements and other requirements and the and considering its risks and opportunities established of the organization, in addition to keeping its documented information (Valdés, Alonso, Calso, & Novo, 2016).

The specific procedure which is controlled this information is established in the annex IV. The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to identify, develop, plan and implement the environmental objectives of the Company in order to ensure that the Environmental Management System is effective in advancing a process continuous improvement.

In addition, below is the documented information attached to the Annex IV:

- SP-04: Environmental objectives plan.

- SP-04-01: Environmental objectives plan.

7.5. Operational control process

The standard states that the methods defined to ensure the minimal operational control shall be dependent on the organization's activities and processes, the significant environmental aspects, the risk and opportunities and the legal requirements and other requirements adopted (ISO 14001:2015).

The main objective of the operational control of the processes is to achieve the expected results by complying with the requirements established by the Environmental Management System. Therefore, the organization must comply with this requirement and decide how to conduct the actions aimed at controlling the operations with the aim to ensure their effectivity to guarantee the achievement of the desired results (Valdés, Alonso, Calso, & Novo, 2016).

The specific procedure which is controlled this information is established in the annex V. The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to define, implement, control and maintain the necessary operational processes in accordance with the Environmental Management System requirements with the aim of continuously improving the organization's environmental performance and ensuring the quality of all the processes involved.

In addition, below is the documented information attached to the Annex V:

- SP-05: Operational control process.
- TI-01: Waste Management.
- TI-02: Natural resources consumption.
- TI-03: Soil and water discharges control.
- TI-04: Noise control.
- TI-05: Atmospheric emissions control.

7.6. Emergency response plan

As established in the standard, the organization shall ensure the emergency situations preparation and response considering their necessities (ISO 14001:2015). Therefore, for these situations it is necessary to establish, plan, evaluate action guidelines and test the operation of the planned actions (Keen, 2021).

The specific procedure which is controlled this information is established in the annex VI. The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to identify and plan the required preparedness and response measures face to potential incidents and emergency situations which can affect the multinational, showing the procedures and instructions for the preparation and response of an emergency plan, in addition to the drill programs as proof of evaluation of the effectiveness of the emergency plan.

In addition, below is the documented information attached to the Annex:

- SP-06: Emergency response plan.
- SP-06-01: Emergency response plan.
- SP-06-02: Emergency drill plan.

7.7. Internal auditory procedure

In order to verify its compliance with the requirements of the standard and the Environmental Management System, the multinational shall carry out internal audits at planned intervals as a monitoring and control tool to ensure the requirements fulfilment and provide information about the implementation and maintenance of the Environmental Management System (ISO 14001:2015).

The specific procedure which is controlled this information is established in the annex VII. The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to verify its compliance with the requirements of the standard and the Environmental Management System implemented, with the aim to ensure its requirements fulfilment and provide information about its implementation and maintenance.

In addition, below is the documented information attached to the Annex VII:

- SP-07: Internal auditory procedure
- SP-07-01: Audit program.
- SP-07-02: Audit plan.
- SP-07-03: Finding's report.
- SP-07-04: Audit report.

7.8. Nonconformity control procedure

As it was mentioned, a non-conformity is the non-compliance of a requirement relating to the requirements established by the ISO standard and the Environmental System Management requirements, being its identification and correction essential for the efficient continuous improvement of the Environmental Management System (ISO 14001:2015).

The specific procedure which is controlled this information is established in the annex VIII. The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to investigate, evaluate and correct through corrective actions the causes of nonconformities.

In addition, below is the documented information attached to the Annex VIII:

- SP-08: Nonconformity control procedure.
- SP-08-01: Nonconformity inform and corrective action.

8. Environmental Management System implementation phases

In the following chapters will be established the sequential phases based on the cyclical model of continuous improvement known as Deming cycle or PDCA (Plan, Do, Check, Action), implementation model proposed by the ISO 14001:2015, in which the implementation of the Schwartz-Hautmont S.A. Environmental Management System will be developed (Ramírez, 2007):

- **Phase I** (chapter 8.1): Environmental initial analysis (exploration of antecedents and environmental practices of the company).
- **Phase II** (chapter 8.2): Planning (establishment of environmental policy, opportunities and risks, environmental aspects identification, identification of legal requirements and environmental objectives).
- **Phase III** (chapter 8.3): Implementation (staff training, documented information, operational control, emergency preparedness and response and communication).
- **Phase IV** (chapter 8.4): Verification and improvement (monitoring, measurement, analysis and verification for continuous improvement).
- **Phase V** (chapter 8.5): Top Management review.
- **Phase VI** (chapter 8.6): Certification audit (certification process for UNE-EN ISO 14001:2015).

Additionally, in the last chapter (chapter 8.7) the implementation schedule of the multinational Environmental Management System will be shown.

8.1. Environmental initial analysis

Before starting to develop the implementation phases of the Environmental Management System, it is necessary to have as much information as possible to determine the current environmental position of the organization. However, it is necessary to mention that the standard does not specify the initial analysis as a requirement being this optional and recommended if the company wishes to have a more exact and objective knowledge of its current environmental status (Ramírez, 2007).

In this case, an initial environmental analysis was considered as the first phase of the implementation of an EMS at Schwartz-Hautmont S.A. considering the following factors:

- Multinational context description and analysis.
- Activities and processes developed identification.
- Stakeholders' identification and their expectations and necessities.
- Environmental aspects and environmental impacts generated considering normal and emergency conditions of the activities and processes associated.
- Resources, facilities and staff training and capacity.
- Environmental legal requirements and other requirements.
- Current documented information.
- Environmental emergency situations registers.

Based on the factors considered above, the Schwartz-Hautmont S.A. EMS committee initiated the analysis and performed the initial environmental analysis over a 2-month period. The results of this initial analysis are shown in the following table (Table 5) that includes a list of the requirements established by the standard and the level of compliance of the multinational.

Table 5: Environmental initial analysis. Source: own elaboration.

Chapter	Requirement	Compliance (%)
Organization context	Understanding the organization and its context	50
	Understanding the needs and expectations of stakeholders	60
	Determining the scope of the environmental management system	40
	Environmental Management System	35
Leadership	Leadership and commitment	85
	Environmental Policy	20
	Organization roles, responsibilities and authorities	20
Planning	Actions to address risks and opportunities	60
	Environmental Aspects	20
	Legal requirements and other requirements	40
	Action planification	20
	Environmental objectives and planification	20
Support	Resources	85
	Competences	60
	Awareness	10
	Communication	20
	Documented Information	50
Operation	Operational planning and control	40
	Emergency preparedness and response	60
Performance evaluation	Monitoring, measurement, analysis and evaluation	35
	Internal audit	40
	Top management review	40
Improvement	Nonconformities and corrective actions	40
	Continual improvement	20

8.2. Planification

In this phase, the multinational must define the evaluation of its environmental aspects associated with its activities and processes, the identification of applicable legal requirements, as well as the establishment of objectives, goals and programs and other requirements established to control its environmental performance (Ayuntamiento de Madrid, 2022).

In this way, the first step will be to define the Environmental Policy to determine the intentions and commitments of the company in relation to the protection of the environment in order to establish the basis on which the following requirements will be developed and that will set the objectives and goals of the organization. (Universitatea ARTIFEX București, 2015). Secondly, the Top Management, the EMS Committee and EMS Coordinator will comply with the following different standard requirements, according to the data obtained in the initial environmental analysis and the Environmental Policy establishment (Table 5):

- Environmental risks and opportunities identification and the planned actions to profit or face them.
- Environmental aspects and environmental impacts generated considering normal and emergency conditions generated by the activities and processes carried out in the multinational.
- Identification of the legal requirements and other requirements that the multinational is subscribed.
- Establishment of objectives and goals.

This information meets all the requirements established according to the standard and the requirements developed in the Schwartz-Hautmont S.A. Environmental Management System Manual.

8.3. Implementation

During this phase it will be executed the actions to carry out the implementation of the Environmental Management System in Schwartz-Hautmont S.A. As a summary, the following steps will be considered to carry out the implementation phase are (Ayuntamiento de Madrid, 2022):

- Organizational structure, roles, responsibilities and authorities' designation.
- Training, awareness, professional capacity and communication.
- Manual of the Environmental Management System.
- Documented Information.
- Operational control.
- Emergency preparedness and response.

This information meets all the requirements established according to the standard and the requirements developed in the Schwartz-Hautmont S.A. Environmental Management System Manual.

8.4. Verification and improvement

In this phase, the evaluation of the environmental performance of Schwartz-Hautmont S.A. is carried out, through the definition of the instruments destined to ensure the fulfilment of its requirements and objectives. As a summary, the following steps will be considered to carry out the verification phase are (Ayuntamiento de Madrid, 2022):

- Monitoring, measurement and control of processes and activities of the organization likely to generate a greater impact on the environment and analysis of data records.
- Planning, execution and registration of internal and external audits.
- Implementation of nonconformities and corrective actions to solve them.

This information meets all the requirements established according to the standard and the requirements developed in the Schwartz-Hautmont S.A. Environmental Management System Manual.

8.5. Top Management review

A review carried out by the Top Manager will be scheduled in order to examine and analyse all the aspects of the environmental management system and plan the improvement actions to be implemented for the fulfilment of the system requirements and for the contribution in the continuous improvement (Ramírez, 2007).

8.6. Certifying Auditory

The last phase of the implementation process of the Environmental Management System is the declaration that Schwartz-Hautmont S.A. complies with the requirements established by the standard through the certification audit.

It is necessary to mention that this is not a mandatory phase, unless the organization wishes to declare and guarantee, through a competent and accredited entity, the environmental performance of their activities and processes and obtain a certificate that endorses it.

In general, since it is very complicated to meet all the established objectives, it is usually expected that the implementation of the environmental management system is effective enough to undergo a certification audit. In this way, Schwartz-Hautmont S.A. will wait until its management system is satisfactory enough.

The certification audit will be carried out by an accredited entity. If the result of this process is favourable, the company will obtain an UNE-EN ISO 14001:2015 certificate. This certification will be valid for three years, after that period of time a certification audit must be carried out again to obtain the certificate again.

8.7. Implementation schedule

Finally, it will be established the implementation schedule with the sequential phases in which the implementation of the Schwartz-Hautmont S.A. Environmental Management System will be developed. In the following table (Table 6) it is shown the implementation schedule showing each requirement and its phase of implementation for one year.

Table 6: Implementation Schedule. Source: own elaboration.

Phase		Month											
		NOV. 21	DEC. 21	JAN. 22	FEB. 22	MAR. 21	APR. 21	MAY. 21	JUNE 22	JUL. 22	AUG. 22	SET. 22	OCT. 22
Environmental initial analysis	Multinational context												
	Interested parts identification												
	Initial analysis												
Planification	Environmental policy												
	Environmental risks and opportunities												
	Environmental aspects and impacts												
	Legal requirements and other requirements												
	Objectives and goals planification												
Implementation	Org. structure, respons. and authorities												
	Training, awareness and capacity												
	Communication												
	EMSM and documented information elaboration												

	Operation control												
	Emergency preparedness and response												
Verification and improvement	Monitoring, measu. and control process												
	Internal audits performance												
	Nonconformities and corrective actions												
Top Management review	Top Management EMS review												

9. Management System Integration

When an organization pretends to integrate its management systems (quality, environment, occupational health and safety, etc.), we go from managing these systems separately to managing them jointly. It should be noted that, although what we must do is specified in the different reference standards regarding the integration of management systems, it is not specified how it should be done, being is development the choice of the organization itself.

In the following chapters, it will be defined what an Integrated Management System (IMS) is, its advantages and disadvantages and how and what should be approached and considered regarding the formalization of an Integrated Management System.

9.1. Integrated Management System

An Integrated Management System (IMS) would bring together and manage the disciplines of quality, environment and occupational health and safety, based on the ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 requirements respectively, unifying actions criteria, processes and resources and configuring a single structure. The objective of implementing this type of system would be to optimize resources, avoid and eliminate duplication, improve performance and simplify the management of all systems, among others (Calso & Pardo, 2018).

As established in *Sistemas Integrados de Gestión* (2005), the implementation of an integrated management system offers many advantages and benefits depending on the characteristics of each organization. In general, it stands out (*Sistemas Integrados de Gestión*, 2005).

- Balanced integration of the different policies and objectives of the organization.
- Balanced integration of the different management criteria.

- Reduction and/or simplification of the documentary structure of the system.
- Less effort in employees training.
- Less effort in implementation and maintenance of the system.
- Integration of information and management control.
- Simplification of tasks in workstations.
- Reduction of time and cost of system maintenance.

On the other hand, even though the implementation of an Integrated Management System presents certain improvements and benefits compared to working with separate systems, the implementation of an Integrated Management System is not exempt from difficulties. It is highlighted (Fraguela, Carral , Iglesias, Castro, & Rodríguez, 2011):

- Lack of competences, training and awareness on the part of the employees.
- Difficulty in achieving a team in charge of its implementation with adequate training in the three areas.
- Temporality, subcontracting and job insecurity.
- The employer's ignorance of his responsibilities in each of the matters.

9.2. Systems integration

An Integrated Management System must be structured based on the processes developed in the environment, quality and occupational health and safety, and must be adapted to comply with regulations and the company necessities. Consequently, in this process all those elements that are included within the scope of the system will be affected such as the documented information, the organizational structure and the operational processes and activities.

Regarding the documented information, is common and recommended to take into consideration the Quality Management System as the structural core of the Integrated Management System and rely on existing documents of other management systems already implemented. The aim is to establish a common documentary support for the Integrated Management System taking into consideration that documentary simplification may occur by grouping documents with common action guidelines (Sistemas Integrados de Gestión, 2005). In the following table (Table 7) shows the common aspects and documentation among management system.

Table 7: Management System documentation. Source: Sistemas Integrados de Gestión, 2015.

ISO 9001:2015	ISO 14001:2015	ISO 45001:2015
Quality manual and documentation of the system of Quality.	Environmental management system documentation.	Occupational health and safety management system documentation.
Documented information control.	Documented information control.	Documented information control

Quality policy.	Environmental Policy.	Occupational health and safety Policy.
Legal requirements of the product. Customers' quality requirements (1).	Procedure to identify and access legal requirements. Registration of the applicable environmental legislation. Procedure to identify environmental aspects and to determine their significance. Record of the result of the evaluation of environmental aspects (1).	Procedure to identify and access legal requirements. Registration of the applicable legislation. Procedure to identify occupational risks. Record of the result of the occupational risk assessment (1).
Quality objectives.	Environmental goals and objectives.	Objectives and goals in the Prevention of occupational risks.
Quality Planning (2).	Environmental management program (2).	Occupational risk prevention management program (2).
Functions and responsibilities.	Functions and responsibilities.	Functions and responsibilities.
Internal communication.	Internal communication.	Internal communication.
Management review.	Management review.	Management review.
Human Resources. Identify training needs. Training plan. awareness. Records.	Procedure to identify environmental training needs. Training plan. awareness. Records.	Procedure to identify training needs in occupational risk prevention. Training plan. awareness. Records.
Infrastructure and work environment.	-	-
Product realization planning.	Planning of operational control associated with environmental aspects.	Prevention planning.
-	Emergency plans.	Response plans regarding emergency situations.
Customer-related processes. Determination of requirements related to the product. Communication with the customer.	Environmental aspects. Internal and external communication.	Occupational hazards. Internal and external communication.
Product design.	-	-
Purchasing Process. Shopping information.	Procedure for communicating environmental requirements to suppliers and subcontractors.	-

Production and service provision.	Operational control.	Control of actions.
Monitoring and measurement of customer satisfaction.	-	-
Internal audit.	Internal audit.	Audit of the occupational risk prevention management system.
Monitoring and measurement of processes. Monitoring and measurement of products.	Control and measurement procedure.	Procedure for active control. Verification procedure.
Control of nonconforming product.	Procedure for non-conformities.	Procedure for non-conformities. Incidents, accidents, occupational diseases.
Analysis of data.	-	-
Continuous improvement. Corrective and preventive actions.	Corrective and preventive actions.	Corrective and preventive actions.

(1) *Specified procedures.*

(2) *Formats.*

Regarding organizational integration, it should be noted that the integration of management systems can vary the existing organizational structure, emphasizing those departments or areas most involved. On the other hand, in terms of operational integration, all integrated practices must be carried out taking into account the common guidelines established in the procedures or other integrated documents, establishing an initial follow-up in a recommended manner in order to verify the integrated development of the processes (Calso & Pardo, 2018).

Finally, the following three minimum requirements that an integrated management system should meet should be considered (Calso & Pardo, 2018):

- All activities, processes and facilities must be defined within the establishment of the scope of the system.
- Coordination of the integrated management system under the control of a single person is recommended.
- Integrate the common requirements of the different integrated systems, taking into account compliance with the requirements established for each regulation.

10. Results and discussion

In the following chapter, it will be exposed the degree of compliance with the general and specific objectives initially established during the first phases of the master's thesis project.

Regarding the general objective, the implementation of an Environmental Management System allowed a great improvement in the company's environmental performance, fact that it will be described deeper in the conclusions (chapter 11). In this way, it can be established that the general objective compliment was successful.

Parallel to the fulfilment of the general objective, also all the specific objectives proposed have been accomplished. In the following sections it will intend to address all those achievements and results keeping up the sequentially order of the specified objectives established (chapter 3) to clarify the understanding of the results.

- An Environmental Management System based on the ISO 14001:2015 standard has been formalized based on the characteristics and needs of the company. In chapter 4 and subsections, the context of the organization has been established with the aim to delimit the important issues that may affect the way in which the organization manages its environmental responsibilities, defining the strategic objectives and planning of the system to be implemented. On the other hand, in chapter 5 the stakeholders that can influence the organization have been established, classified as internal and external and with their respective needs and expectations based on the procedure.
- The company's risks and opportunities have been determined and the actions to face them or make them profitable. In the chapters 4.1, 4.2 and 4.2.1 it was presented a brief description and the analysis context of Schwartz-Hautmont S.A. and the implemented strategies:
 - the SWOT analysis, a strategic methodology that allows a detailed analysis of the current situation of the organization, considering their strengths, weaknesses, opportunities and threats.
 - the CAME analysis based on the factors identified in the initial SWOT analysis and developed to maintain the intrinsic strengths, correct the organization's own weaknesses, exploit the external opportunities and face the external threats.
- During chapter 6 and the annex 0, the Environmental Management System Manual has been designed all the phases and components that make up the system's manual in compliance with the ISO 14001:2015 requirements, including an organization description, the multinational's processes map and organigram, the scope of the Environmental Management System manual, the environmental policy definition, and all the phases and components that make up the system's manual.

- During chapter 7 and the annexes I to VIII, all the necessary documented information has been designed, developed and documented in compliance with the ISO 14001:2015 requirements. The chapter 7 and the annexes I to VIII include:
 - Documented information control (SP-01) to develop, control and maintain the required documented information by the standard and the necessary information to ensure the Environmental Management System implantation.
 - Identification and evaluation of environmental aspects (SP-02) to identify, evaluate and valorise the environmental aspects originated because of the activities and processes carried out in the company, in order to determine those that have significant impacts on the environment.
 - Legal and other requirements (SP-03) to identify and evaluate the environmental legal requirements and other requirements which affect the company as a consequence of its activities and processes.
 - Environmental objectives plan (SP-04) to identify, develop, plan and implement the environmental objectives of the company in order to ensure that the Environmental Management System is effective in advancing a process continuous improvement.
 - Operational control process (SP-05) to define, implement, control and maintain the necessary operational processes in accordance with the Environmental Management System requirements with the aim of continuously improving the organization's environmental performance and ensuring the quality of all the processes involved. Additionally, is included the technical instructions (TI-01 to 05) regarding to the implementation, control and maintenance of the operational control of the main environmental vectors identified.
 - Emergency preparedness plan (SP-06) to identify and plan the required preparedness and response measures face to potential incidents and emergency situations which can affect the multinational.
 - Internal audit procedure (SP-07) to verify the organization's compliance with the requirements of the standard and the Environmental Management System implemented, with the aim to ensure its requirements fulfilment and provide information about its implementation and maintenance.
 - Nonconformity control procedure (SP-08) to investigate, evaluate and correct through corrective actions the causes of nonconformities.
- The implementation phases of the Environmental Management System have been established, including an implementation schedule. During chapter 8, the sequential phases were established in which the implementation of the Schwartz-Hautmont S.A. Environmental Management System was developed based on the cyclical PDCA model of continuous improvement, in addition to the implementation of an implementation schedule based on the capacities of the company and the period involved in implementing each requirement.

- Chapter 9 has established the work procedure to address the integration of the Environmental Management System with other management systems in order to form an Integrated Management System. The objective is that once the Environmental Management System has been implemented and evaluated following these specifications, the organization can integrate it together with a Quality Management System and a Health and Safety management system based on ISO 9001:2015 and ISO 45001:2018 standards respectively.

11. Conclusions

During the initial phases of the project, the potential benefits to the Schwartz-Hautmont S.A. headquarters facility. to implement an Environmental Management System have been raised as a reason to justify the project.

After having established the sequential phases and analysed the situation of the multinational in terms of action, resources, procedures and pre-existing strategies in environmental matters, some conclusions can be drawn from the development and implementation of the Environmental Management System carried out in this project. In addition, it is worth highlighting the numerous changes developed during the implementation of this Environmental Management System, of which the most notable will be cited or those that have led to the most significant changes within the organizational structure, the documented information or the operational processes, among others.

- The implementation of the use of the SWOT matrix has been chosen as a tool to allow a detailed analysis of the current situation of the organization considering their strengths, weaknesses, opportunities and threats, in addition to having implemented the use of the CAME matrix as a complementary methodology to maintain the intrinsic strengths, correct the organization's own weaknesses, exploit the external opportunities and face the external threats.
- The structure of the organization has been redefined and new responsibilities and roles have been designated for the different personnel in terms of environmental performance, a fact that has led to an improvement in the control of communication between the members of the organization and the stakeholders.
- The correct application of the documentation of the system in terms of environmental performance has been ensured:
 - There have been changes in the codification of documented information for a more practical one that covers all types of documented information. Previously no clear coding for formats had been established.
 - A new type of documented information (Technical Instructions) has been added as a result of the need to establish more concise instructions aimed at operational control of the main environmental aspects.

- New methodologies and evaluation criteria have been proposed regarding the identification and evaluation of Environmental Aspects:
 - A specific methodology has been proposed for the identification of the actions and processes developed based on their life cycle and the differentiation of the conditions in which these activities and processes are developed (normal and emergency conditions).
 - Lastly, the evaluation criteria for environmental aspects have been reconsidered for more specific ones and a methodology for assigning criteria for each environmental aspect has been implemented.
- The use of a support tool has been established or access, consultation and supervision of environmental legal requirements and other requirements has the contracting of an external company that offers supporting tools for the management, supervision and continuous upgrading of legal requirements.
- The establishment and fulfilment of environmental objectives and goals will end up providing multiple advantages, in addition to maintaining continuous improvement and providing the necessary support to successfully achieve and maintain the organization's Environmental Certification.
- There has been a substantial improvement in the deficiencies in the training of personnel in matters of environmental performance and having increased the motivation and sensitivity of the personnel towards caring for the environment, emphasizing the success of the implementation of the *toolboxes*, short weekly training and information sessions for workers (table 8).
- The possibility of occurrence of environmental emergency situations derived from the correct identification of significant aspects has been reduced, in addition to implementing new methods of action in the face of these possible states of emergency, which the previous organization did not have.
- Only if the implementation of the system and the environmental management and implementation are carried out correctly, as well as compliance with the requirements established in the ISO 14001:2015 standard, would they be allowed to obtain a certification. That is, an audit would be scheduled as soon as the implementation was considered practically satisfied.

Finally, the next step, logical and common among organizations, is to unify their management systems, in order to optimize resources, improve operating performance, simplify the management of all systems, etc. Consequently, the work procedure has been established to address the integration of management systems if the multinational intends to carry out a future integration of its management systems.

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ANNEX 0 - ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL

SCHWARTZ-HAUTMONT Construcciones Metálicas S.A.

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UNCONTROLLED COPY.*

Prepared: Miquel Morales	Revised:	Aproved:
	HSE Department Manager	Corporative General Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:


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1. Organization location

Schwartz-Hautmont S.A. has facilities in different locations distributed and located in the province of Tarragona, Spain:

- Main workshop and headquarters: Av de la Canonja, 9 – 43480 Vila-seca
- Paint workshop: C/ Mas del Bisbe 13 – 43480 Vila-seca
- Port workshop: Muelle de Aragón, s/n – 43004 Tarragona
- Reus workshop: C/ de Francesc Ferrer i Guàrdia, 12 – 43206 Reus

The following figure (Figure 2) shows the location of the Main workshop facilities, the Paint workshop, the Port workshop and the Reus workshop at 1:50000 scale (ICGC, 2022).

Figure 2: Facilities location (Red dots). Scale 1:5000. Source: ICGC, 2022.



As mentioned, the headquarter and main workshop of the multinational is located at Av. De la Canonja, 9, Vila-seca, Tarragona. Its facilities are distributed between offices and reception room, changing rooms and dining room for employees, outdoor parking, warehouses (1, 2, 3 and 4) and outdoor areas, occupying area of about 80,000 m² and the working area about 30,000 m². The following figure (Figure 3) shows the location of the main headquarter facilities at 1:5000 scale (ICGC, 2022).

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Table 8: Employees and work areas.

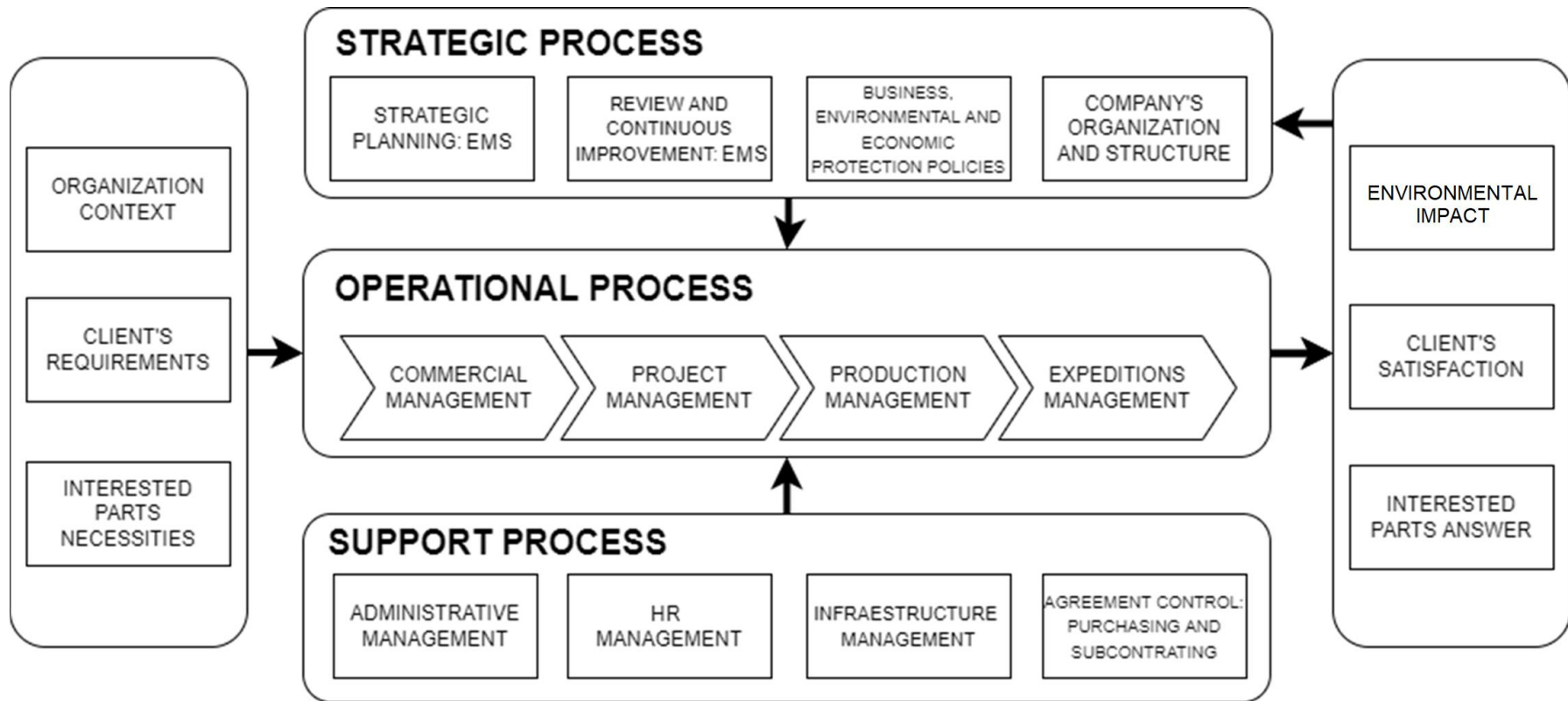
Function	N° of employees	Area/s description
General Manager	1	Multinational's processes administration, leadership and coordination.
Workers	136	It is divided into warehouse operators, assemblers, specialists, fitters, welders, machine operators, supervisors, cleaners, workshop foremen, metrologists, maintenance personnel, etc.
Technicians	16	It is divided in purchase and procurement, commercial and sales, workshop, quality, HSE, accountants, administration and billing, etc.
Engineers	6	Guarantee the process of design and planning.
Secretary	2	Ensure the document management and customer service, etc.
Managers	12	It is divided in purchase and procurement, commercial and sales, workshop, quality, HSE, accountant, administration and billing, human resources, etc.
Administration	2	Ensure the company's administration and financial statement
Human resources administrative	2	Ensure the management of selecting, recruiting, employing personnel, among others.

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3. Organization processes diagram

In order to have a better understanding of the main processes carried out in Schwartz-Hautmont S.A, in the following figure (Figure 4) it is detailed a process diagram that illustrates the relation between the processes and the subprocesses carried out by the organization.

Figure 4: Process diagram.

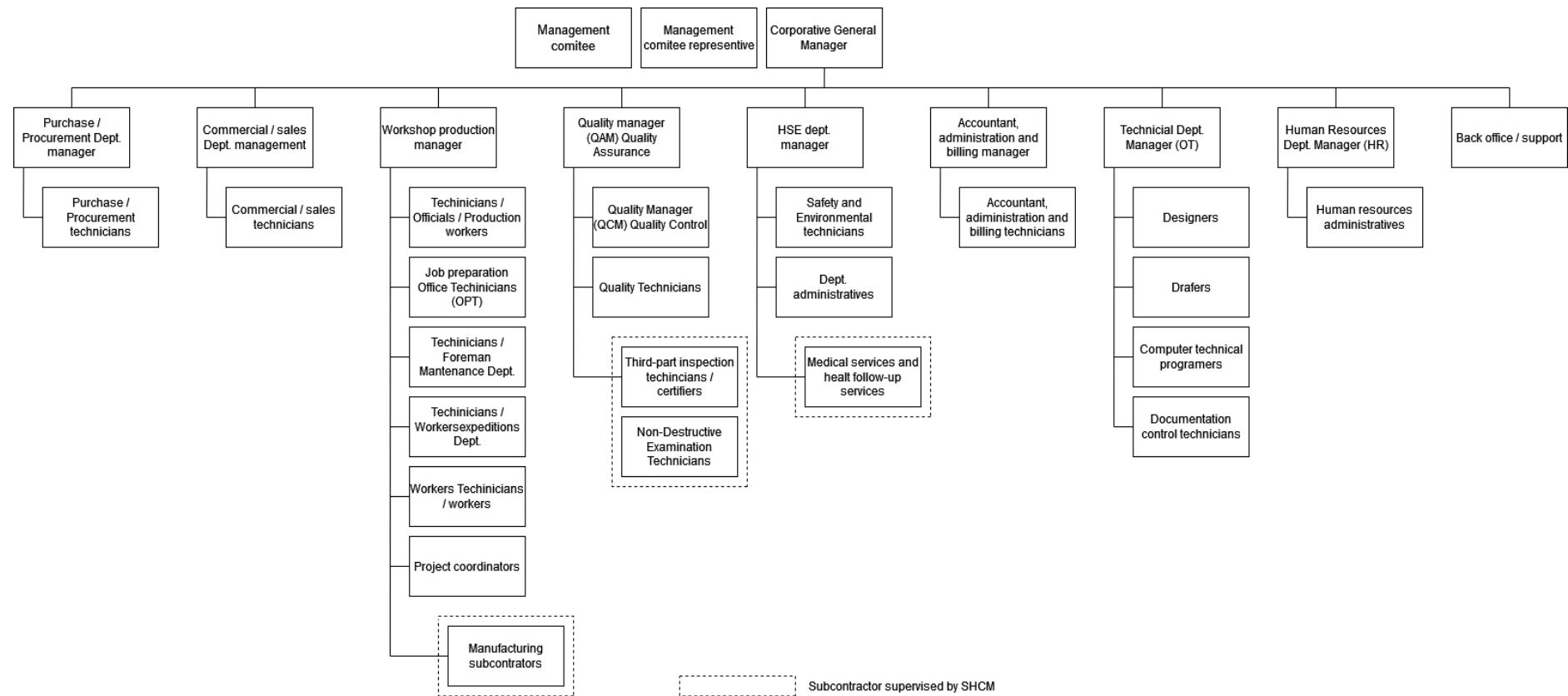


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4. Organizational structure

Schwartz-Hautmont S.A. organizational structure is represented through an organigram where is represented the structure that make up the company and the relationships established between the different departments and their functions (Figure 5):

Figure 5: Organizational structure organigram.



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5. Environmental Management System scope

The Environmental Management System developed is based on the requirements established by the ISO 14001:2015 standard, which considers the needs and expectations of its interested parties, the internal and external context of the organization, the applicable legal requirements and other related requirements, the physical and organizational limits, the activities, products and services carried out and finally the organization authority and ability to exercise control and influence (ISO 14001:2015). Thus, this Environmental Management System will be applied only within the following scope:

- The facilities and infrastructure of Schwartz-Hautmont S.A. located at the main headquarters (Av. De la Canonja 9, Vila-seca, Tarragona).
- Functions of the organization, departments and hierarchical structure of the headquarters company.
- The activities, processes and products developed in the facilities of the main headquarters, including those activities, processes and operational control focused on the environmental protection and sustainable development.

On the other hand, the services, actions and processes carried out outside the main headquarters facilities or these not provided by the organization or carried out by companies that are contiguous or close to the organization are excluded of the Environmental Management scope.


6. Environmental policy

In order to determine the intentions and commitments of the company regarding the environmental protection, it is shown the environmental policy of Schwartz-Hautmont S.A. based on the ISO 14001:2015 standard.

Schwartz-Hautmont Construcciones Metálicas S.A. Environmental Policy

The Top Management of Schwartz-Hautmont S.A. has decided to establish an Environmental Management System based on the requirements of ISO 14001:2015 aimed at the fulfillment of its policy and objectives.

With the aim of improve efficiently the environmental performance of our organization, our environmental policy will define, within the sustainable development parameters and maintaining the management of environmental aspects that it produces, the environmental commitment of our activities, products and services, being periodically reviewed to verify its continuous adequacy, ensuring the communication and knowledge of this environmental policy to all

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members of the organization including the members who works on behalf of the company, as well as to the affected parties.

Thus, the following fundamental principles and commitments regarding to environment in accordance with the requirements of the ISO 14001:2015 standards are established:

- Identify and eliminate or minimize the risks to the staff and other interested parts exposed to possible risk or emergency situations and have enough resources to combat them.
- Guarantee the environmental protection by preventing pollution and minimizing or mitigating adverse environmental impacts by the activities and processes developed by the organization.
- Ensure the proper maintenance, control and compliance with environmental legal requirements, other applicable requirements and the requirements voluntarily assumed by the organization.
- Establish indicators and reporting systems that allow to determine the environmental impact carried out by our activities and processes and define concrete and measurable objectives and goals within an environmental program and involve the company employees in the achievement of these objectives and goals.
- Promote environmental training and active participation for employees through training programs and environmental awareness.
- Establish objectives for reducing energy consumption based on their rational use and minimizing the energy consumption of water and natural resources, in addition to reducing and improving the generation and management of waste, thus contributing to the minimization of the footprint on the environment.
- Implement, maintain and continuously improve the performance of the Environmental Management System.

Schwartz-Hautmont S.A. guarantees the environmental policy review and the modifications, updating and fulfillment with all the principles and commitments established above.

Approved and signed by the General Manager of Schwartz-Hautmont S.A.:

10/01/22

7. Environmental Management System description

In this chapter is described the Environmental Management System implemented in Schwartz-Hautmont S.A. in compliment with the different requirements and specifications based on the ISO 14001:2015 standard.

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7.1. Organization context

Understanding the organization and its context

First it is necessary to remark that the ISO 14001:2015 standard does not specify a methodology to carry out this context analysis and it will depend on the characteristics and needs established by the organization.

Before the analysis of the context of the organization in the chapter 4.1 of the present project, it is established a brief description of the context of the organization. Then, in the chapter 4.2 of the present project is used the SWOT analysis or SWOT matrix in which the weaknesses, threats, strengths and opportunities of the company are established. As a complement of the SWOT analysis, in the chapter 4.2.1 is used the CAME analysis or CAME matrix and the four strategies established and focused on correcting weaknesses, facing threats, maintaining strengths and exploiting opportunities.

Understanding the needs and expectations of interested parties


As stated in the requirement 4.2 of the standard, *“an organization is expected to determine which interested parties are relevant to its environmental management system, the relevant needs and expectations expressed by these interested parties, and which of these needs and expectations become its compliance obligation”* (ISO 14001:2015).

Likewise, according to chapter 5 of this project, the interested parties that can influence the organization are defined, classified as internal and external and with their respective needs and expectations.

Determining the scope of the environmental management system

As established in the requirement 4.3. of the standard, *“the organization shall determine the limits and the applicability of the Environmental Management System to establish its scope considering the external and internal affairs and the legal and other requirements”* (ISO 14001:2015).

Likewise, based on the chapter 4.1. and 4.2. of this project and in compliance with the standard requirements, the physical and organizational limits to which the management system is applied the limits of the scope of the system will be applicable to all the activities, processes and products developed in the facilities of the main headquarters, including those activities, processes and operational control focused on the environmental protection and sustainable development, excluding those services, actions and processes carried out outside the main headquarters facilities or these not provided by the organization or carried out by companies that are contiguous or close to the organization. This is exposed in the chapter 5 of this manual.

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Environmental Management System

As defined in the requirement 4.4. of the standard, *“the organization shall establish, implement, maintain and continuously improve the Environmental Management System in accordance with the standard and include the necessary processes and their interactions”* (ISO 14001:2015).

Likewise, in compliance with the requirements and specifications based on the standard, in the different sections that make up the present manual’s chapter 7.1 the implementation of the Environmental Management System in Schwartz-Hautmont S.A. is established and described.

7.2. Leadership

Leadership and commitment

As established in the requirement 5.1. of the standard, *“the top management shall demonstrate leadership and commitment with respect to the environmental management system”* (ISO 14001:2015).

Likewise, through the establishment of the organization's environmental policy (chapter 6 of the present manual), the General Manager demonstrates its commitment complying with the requirements and specifications of the Environmental Management System, as well as the necessary resources to establish, implement and maintain it.

Environmental Policy

As established in the requirement 5.2 of the standard, *“through the establishment of the organization's environmental policy the intentions and commitments of the company regarding the environmental protection are established”* (ISO 14001:2015).

Likewise, as defined in chapter 6 of the present manual, the environmental policy of the company is established on which the Environmental Management System will be implemented and maintained with the aim of efficiently improving the organization's environmental performance.

Organization roles, responsibilities and authorities

As defined in the requirement 5.3 of the standard, *“it is established that the top management shall ensure that the responsibilities and authorities for relevant roles are assigned and communicated within the organization”* (ISO 14001:2015).

As is defined in chapter 4 of the present manual, it is established the organizational structure of Schwartz-Hautmont S.A. through an organigram where is represented the structure that make up the company and the relationships established between the different departments and functions. Additionally, in the following table (Table 9) it is shown the authorities and their roles and responsibilities regarding to the Environmental Management System.

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Table 9: Authorities, roles and responsibilities.

Authority	Role	Responsibility
Corporative General Manager	Top Management, EMS Committee Member	<ul style="list-style-type: none"> • Ensure the EMS's suitability and continuous effectiveness. • Approve the Environmental policy. • Guarantee support resources. • Demonstrate leadership and commitment. • Responsibilities and authority's assignation. • Approve the Specific procedures. • Participation and decision-making adopted by the EMS committee.
HSE department manager	EMS Coordinator and EMS Committee Member	<ul style="list-style-type: none"> • Collaborate in the EMS support in the compliance with the procedures established. • Guarantee the development, planification and implementation of the SP requirements and ensure its approval and supervision. • Collaborate in the participation of the auditory coordination and the establishment of environmental objectives.
Environmental technician	EMS supervisor and EMS committee member	<ul style="list-style-type: none"> • Collaborate in the EMS support in the compliance with the procedures established. • Guarantee the EMS support in the awareness of the personnel. • Ensure the SP requirements compliment and guarantee the correct performance of the TI supervising the methodology development and performing the control measures.
Administrative	Environmental legislation responsible and EMS support	<ul style="list-style-type: none"> • Guarantee the EMS support in the necessary personnel competences and the documented information control. • Ensure the compliance, review and updating of legal and environmental regulations and other requirements adopted by the organization. • Support in the compliment of the specific procedure requirements and the correct performance of the technical instructions.
Warehouse responsible	EMS support EMS committee member	<ul style="list-style-type: none"> • Collaborate in the EMS support in the compliance with the procedures established. • Collaborate in the fulfilment of the objectives, commitments, requirements and procedures established in the EMS. • Collaborate in the participation of the TI procedures compliment supporting.
Staff managers and other employees	EMS support	<ul style="list-style-type: none"> • Participation and support in decision-making adopted by the EMS committee. • Collaborate in the participation of the TI procedures compliment supporting.

7.3. Planning

Actions to address risks and opportunities

As established in the requirement 4.1 of the standard, *“the organization shall guarantee that it is able to achieve the objectives established and achieve the results foreseen in its*

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Environmental Management System, identifying the risks and opportunities as well as planning the actions that allow them to be addressed” (ISO 14001:2015). Likewise, in the chapter 4.2. of this project, the risks and opportunities are identified using the SWOT analysis or SWOT matrix in which the threats and opportunities of the company are established.

On the other hand, in compliance with the requirement 6.1.2 of the standard regarding the environmental aspects, it is established that *“the organization shall determine the environmental aspects of its activities, products and services, as well as the associated environmental impacts, considering those that it can control and those that it can influence” (ISO 14001:2015).* Then, in chapter 7.2 and Annex II of this project, the information regarding the SP-2 procedure is described and controlled which showing the methodology and process of identification and evaluation of the different environmental aspects.

Regarding the compliance obligations, as established in requirement 6.1.3 of the standard, *“the organization shall identify and have access to the mandatory legal requirements and those other requirements that the organization has voluntarily adopted in relation to its environmental aspects” (ISO 14001:2015).* In this way, in the chapter 7.3 and Annex III of this project, the information regarding the SP-3 procedure is described and controlled which shows the methodology and process to identify the legal requirements and other requirements applicable to the organization, its updating and conservation as documented information.

Finally, as defined in requirement 6.1.4 of the standard regarding to the planning, *“the organization must plan the necessary actions to be carried out within the Environmental Management System to address the significant environmental aspects, legal requirements and other requirements, risks and opportunities identified that are a priority so that the organization achieves the intended results of its management system” (ISO 14001:2015).* In the chapter 4.3 of this project, the four strategies focused on correcting weaknesses, facing threats, maintaining strengths and exploiting opportunities through the CAME analysis or CAME matrix are established.

Environmental objectives and planning to achieve them

As established in the requirement 6.2 of the standard, it is defined that *“the organization shall establish the environmental objectives according to its significant environmental aspects, legal requirements and other associated requirements, considering its risks and opportunities” (ISO 14001:2015).*

Likewise, in chapter 7.4 and Annex IV of this project, the information regarding the SP-4 procedure is described and controlled which shows the program of the environmental objectives established in order to comply with the established requirements above.

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7.4. Support

Resources

In compliance with the requirement 7.1 of the standard, *“the Top Management shall determine and provides the necessary resources for the establishment, implementation, maintenance and continuous improvement of the Environmental Management System”* (ISO 14001:2015).

In this way, the organization has the following resources:

- **Infrastructure resources:** the facilities of the company's headquarters are distributed between offices and reception, changing rooms and dining room, outdoor parking, warehouses (1, 2, 3 and 4) and outdoor areas, occupying an area of about 80,000 m² and an area of work about 30,000 m². This information is documented in the chapter 1 of the present manual.
- **Human resources:** the facilities have a staff of 177 employees spread over different areas. This information is documented in table 8 of the chapter 2 of the present manual.
- **Material resources:** the organization has tools, materials and machinery for the activities and processes developed in the facilities, different office materials, electronic devices and cleaning products for offices, reception, changing rooms and the dining room and vehicles adapted to the transport of goods and to the needs of the different activities and processes carried out within the facilities, among others.
- **Technological resources:** the organization has computer equipment for administrative management in the offices. The management of information and communication between personnel is carried out mainly through the *vesselnet* online platform designed to manage, optimize and carry out tasks within our own network, in addition to the use of email and mobile devices.

Competences

As established in the requirement 7.2 of the standard, *“the organization shall determine the necessary competences of the people who carry out work under its control based on their education, training and experiences appropriate to its environmental aspects and its environmental management system”* (ISO 14001:2015).

In this way, the company establishes an evaluation system through a personal job file where the personal data of the worker is specified, the academic or educational training and other kind of courses, the work experience and the workplace and the responsibilities and minimal requirements associated with the position. In the following table (Table 10) it is shown the format EMSM-01-01 “Personal job file” which shows the personal data, education and work experience and the workplace description and requirements.

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Table 10: Personal job file.

SCHWARTZ HAUTMONT	PERSONAL JOB FILE	Code: EMSM-01-01
		Rev.: 00
		Page 1
Personal Data		
Name: Birth date:		
Surname: Address:		
ID number: Contact number:		
Education and Courses		
Title:	Academic center:	Date:
Work Experience		
Title:	Academic center:	Date:
Workplace		
Workplace name:		Responsibilities:
Functions and work place description:		Minimal requirements:
Approved: Signed: Date:		

These personal work files (Table 6) are applied when the worker joins the company and are complemented by the EMSM-01-02 format which is updated annually based on the possible increase in training and experience acquired by the worker such as training due to job changes, continuous training and talks to raise awareness. In this way, in the following table (Table 11) it is shown the format EMSM-01-02 “Personal experience and training acquired” which include the personal data, the personal experience and training, and the formation acquired during the stay at the company by the employee.

Table 11: Personal experience and training acquired.

SCHWARTZ HAUTMONT	PERSONAL EXPERIENCE AND TRAINING ACQUIRED	Code: EMSM-01-02
		Rev.: 00
		Page 1
Personal Data		
Name: Birth date:		
Surname: Address:		
ID number: Contact number:		
Experience and training acquired		
Activity:	Results:	Date:
Approved: Signed: Date:		


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Awareness

As defined in the requirement 7.3 of the standard, *“the organization shall ensure that its workers are aware of the environmental policy and the significant environmental aspects associated with their work, as well as the importance of their contribution to the effectiveness of the Environmental Management System”* (ISO 14001:2015).

The organization establishes short-term training and information sessions weekly for the attending workers to mitigate the environmental aspects detected as significant, avoid malpractice, reduce training deficiencies, environmental awareness, action in case of environmental emergencies situations, among others. In the following table (Table 12) it is shown the format EMSM-01-03 “Toolbox” which is coded, registered, dated and signed by those responsible for the sessions and signed by the attending workers.

Table 12: Toolbox session record.

	TOOLBOX		Code: EMSM-01-03
			Rev.: 00
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Performed			
Name:		Signature:	
Topic			
<input type="checkbox"/> Emergency Plan <input type="checkbox"/> Water/Soil discharges <input type="checkbox"/> Waste segregation	<input type="checkbox"/> General waste management <input type="checkbox"/> Chemical Products management <input type="checkbox"/> Facilities maintenance and cleaning	<input type="checkbox"/> Other:	
Assistants			
Name:		Signature:	
Approved:		Signed: Date:	

On the other hand, the company has both an internal mailbox for workers from the organization itself and external for stakeholders where proposals for improvement or complaints/suggestions can be made.

Communication

As established in the requirement 7.4 of the standard and its subsections, *“the organization shall establish, implement and maintain the necessary processes for internal and external communications relevant to the environmental management system, taking into account its legal requirements and other requirements and ensuring the consistency of the information communicated”* (ISO 14001:2015).

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In this way, the company establishes the following communication channels in order to communicate to both employees and the stakeholders the environmental performance, the environmental policy and the environmental objectives of the organization, among others:

- **Internal communication:** organization's webpage, informative panels, informative meetings (*toolboxes*), organization's online worknet (*vesselnet*), e-mail, mobile devices, internal mailbox for complaints and suggestions.
- **External communication:** organization's web page, informative panels, meetings and facilities visit, e-mail, call centre for attention and information (secretary), external mailbox for complaints and suggestions.

Documented Information

As defined in the requirement 7.5 of the standard and its sub-requirements, *“the organization shall include in its environmental management system the documented information suggested by the standard and that which is considered by the company itself, in addition to establishing the necessary procedures for its creation, updating, control and conservation”* (ISO 14001:2015).

Likewise, in the chapter 7 of this project is established the documented information and the chapter 7.1 and Annex I of this project, the information regarding the SP-1 procedure is described and controlled which is described the documented information control of the company according to the standard requirements mentioned.

7.5. Operation

Operational planning and control

In compliance with the requirement 8.1. of the standard, *“the organization shall establish, implement, control and maintain the necessary processes to satisfy the requirements of the environmental management system and to implement the actions to address risks and opportunities and the planning of the environmental objectives through the establishment of the operations criteria for the processes and the implementation of the control of those possessed in accordance with the operation criteria”* (ISO 14001:2015).

In this way, in the chapter 7.5 and Annex V of this project, the information regarding the SP-5 procedure is described and controlled which shows the operational planning and control procedures established in order to comply with the specified requirements.

Emergency preparedness and response

As defined in requirement 8.2. of the standard and its subsections, *“the organization shall establish, implement and maintain the necessary processes about how to be prepare for and respond to identified potential emergency situations”* (ISO 14001:2015).

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In this way, in the chapter 7.6 and Annex VI of this project, the information regarding the SP-6 procedure is described and controlled which the development of the procedure for the preparation and response to emergencies in order to respond to them effectively, mitigating their effects or preventing their occurrence in comply with the standard requirements mentioned.


7.6. Performance evaluation

Monitoring, measurement, analysis and evaluation

As established in the requirement 9.1. of the standard and its sub-requirements, it is defined that *“the organization shall monitor, measure and analyse its environmental performance and the effectiveness of its environmental management system, in addition to establishing, implementing and maintaining the necessary processes for the evaluation of the compliance with its legal and other requirements”* (ISO 14001:2015).

In compliance with the requirements defined, in the chapter 7.2 and Annex II of this project, the information regarding the SP-2 procedure is described and controlled, by which the organization establishes as objects of monitoring and measurement the environmental aspects of the organization. Regarding the analysis and evaluation, it will be carried out quarterly by the Environmental Management System committee, except for the measurement, analysis and evaluation of noise generation and sources of atmospheric emissions, which will be carried out annually by an external consultant service. Then, in the following tables (Table 13 and 14) it is shown the formats EMSM-01-04 and EMSM-01-05 which shows the “measurement equipment record” in order to ensure the correct results through the maintenance and calibration of the equipment and as a complement of the previous format the “measurement record”.

Table 13: Measurement equipment record.

		MEASUREMENT EQUIPMENT RECORD			Code: EMSM-01-04
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Ref. nº	Equip code	Equip	Model	Date last. maintenance	Observations
.....
.....
Approved:		Signed:		Date:	

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Table 14: Measurement record.

SCHWARTZ HAUTMONT	MEASUREMENT RECORD					Code: EMSM-01-05
						Rev.: 00
						Page 1
Ref. n°	Environmental Aspect	Indicator	Equip code	Measure	Date	Observations
.....
Approved:		Signed:		Date:		

On the other hand, in this way, in chapter 7.3 and Annex III of this project, the information regarding the SP-3 procedure is described and controlled, by which the organization develops the methodology for the identification of legal requirements and other requirements in order to establish the evaluated compliance with the legal requirements that are of its own application as well as other requirements that the organization has subscribed.

Finally, in order to determine how often the compliance will be assessed and evaluated and the necessary actions taken and the maintenance awareness and understanding of the compliance status (ISO 14001:2015), it is shown the following table (Table 15) with the EMSM-01-06 format which shows the “requirements record evaluation” in order to comply with these requirements.

Table 15: Requirements record evaluation.

SCHWARTZ HAUTMONT	REQUIREMENTS RECORD EVALUATION			Code: EMSM-01-06
				Rev.: 00
				Page 1
Ref. n°	Requirement	Compliment (Yes/Not)	Observations	
.....	
Approved:		Signed:		Date:

Internal audit

As defined in the requirement 9.2. of the standard and its sub-requirements, “the organization shall carry out internal audits at planned intervals to provide information on whether the environmental management system is implemented and maintained effectively and is in accordance with its own requirements and the standard. In addition, the organization must establish, implement and maintain one or more internal audit programs that include the frequency, methods, responsibilities, planning and reporting requirements of its internal audits” (ISO 14001:2015).

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In this way, in chapter 7.7 and Annex VII of this project, the information regarding the SP-7 procedure is described and controlled which shows the development of the internal auditory carried out by the personnel of the company itself.

Management review

As established in the requirement 9.3. of the standard, *“the Top Management shall review the organization's Environmental Management System at planned intervals, to ensure its suitability, suitability and continuous effectiveness”* (ISO 14001:2015).

In compliance with these requirements the company's General Manager will evaluate the Environmental Management System annually or when changes are made in order to ensure its suitability and effectiveness, in addition to participating in its external inspection and certification when it is necessary. Finally, a record of the meetings and a record of attendance will be made as evidence of the review by the General Manager.

7.7. Improvement

Nonconformity and corrective action

As defined in requirement 10.2 of the regulation and its sub-requirements, *“when a non-conformity occurs the organization shall take corrective actions to eliminate it and prevent its recurrence”* (ISO 14001:2015).

In this way, in chapter 7.8 and Annex VIII of this project, the information regarding the SP-8 procedure is described and controlled which the methodology for the identification of non-conformities and the corrective actions to solve them is established.

Continual improvement

As established in the requirement 10.3 of the standard, *“the organization shall continuously improve the convenience, suitability and effectiveness of the environmental management system to improve environmental performance”* (ISO 14001:2015).

Based on the premise that “we should not be satisfied that the System simply works”, the General Manager of Schwartz-Hautmont will establish the multiannual strategic plan in order to ensure that the organization continuously improves its environmental performance. This mechanism will be reviewed on a quarterly basis and will establish annual objectives, which will be evidenced through internal audits, monitoring and measurements, nonconformities and the execution of corrective actions to solve them, in order to effectively achieve the results defined by the General Manager.

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ANNEX I - DOCUMENTED INFORMATION CONTROL

SHCWARTZ-HAUTMONT Construcciones Metálicas, S.A.

—
*This Procedure does not contain confidential information and may be available as
UNCONTROLLED COPY.*

Prepared: Miquel Morales	Revised:	Approved:
	HSE Department Manager	Top Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:

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History of revisions

Date	Revision	Reason for change
23/12/2021	00	Initial Version

1. Purpose

The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to develop, control and maintain the required documented information by the standard and the necessary information to ensure the Environmental Management System implantation.

2. Scope

It applies to all the necessary documented information established to perform the Environmental Management System implantation, including the required by ISO 14001:2015 standard.

3. References

- EMSM-01 (Environmental Management System Manual – 01).
- SP-01 to SP-08 (Specific Procedure 01 – 08)
- ISO 14001:2015 standard

4. Definitions

- **Documented information:** information required to be controlled and maintained by an organization and the medium on which it is contained

5. Responsibilities

- **EMS coordinator:** collaborate in the participation of the documented information control and maintenance, the procedure compliment and ensure its approval and supervising.

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- **EMS supervisor:** ensure the documented information elaboration, control and maintenance and the procedure compliment.

6. Development and execution

Documented information content and codification

In order to simplify the identification and facilitate the control and updating of the documented information, Schwartz-Hautmont S.A establishes a common format pattern for all the documents based on the following criteria:

- **Cover:** available for Specific Procedures (SP-00) and the Environmental Management System Manual (EMSM-00), it indicates the company logo, the title of the document, document code, revision number, number of page and the date of supervision, control and approval of the document by the different responsibilities.
- **Header:** it shows the company logo, the title of the document, document code, revision number and page.
- **Footnote:** only available for Technical Instructions and Forms (TI-00, EMSM-00-00 and SP-00-00), it includes the date and control approval of the document.
- **Content:** the language, word format, wording and spelling will be considered. On the other hand, the content will be subject to the type of the document with the following common sections for:
 - **Specific Procedure (SP):** revision history, purpose, scope, references, definitions, responsibilities, development and execution, forms and technical instructions.
 - **Technical Instruction (TI):** purpose, scope, responsibilities and development.

Additionally, the following medias will be established as a means of support:

- **Physical:** in paper format, exposed information panels or located in the HSE department facilities.
- **Digital:** Vesselnet, online document management platform.

Once the documented information required for the Environmental Management System has been prepared, its coding is established based on a letters and numbers (for instance, EMSM-01-04). Taking into consideration this last example, the letters (EMSM) specify the document title, the first two numbers (01) specify which document it is and the last two numbers (04) specify the format related with it.

In order to clarify this, in the following table is exposed the codification methodology established and the document title related (Table 16).

	DOCUMENTED INFORMATION CONTROL	Code: SP-01
		Rev.: 00
		Page 4

Table 16: Documented information codification. Source: own elaboration.

Ref. code	Document title
EMSM-00	Environmental Management System Manual
SP-00	Specific Procedure.
TI-00	Technical Instruction.
EMSM-00-00; SP-00-00	Environmental Management System Manual format and Specific Procedure format.

In addition, in the chapter 6.7.4 it is shown the documented information summary (Table 9) with the minimum documented information content required by the standard which specifies the register code, the project chapter reference and the document title (ISO 14001:2015).

Documented information control and maintenance

The access to the documented information may be made both digitally through the *Vesselnet* online platform and email, as well as in person through information panels in the facilities or by consulting the HSE department under petition and approbation or by authorized personnel.

All the documents, except for the original versions, will be considered as uncontrolled copies and will be available for consultation, use and distribution, in order to keep the original documented information protected.

All the company members and stakeholders will have access and consult rights of this documented information. Although, registers and information classified as restricted or confidential will be restricted except for the relevant authorized recipients, authorized personnel or under petition and approbation.

The control of these documented information will be completed in the format SP-04-01 "Documented information control" (Table 17) which will include the control access, the code, document title, responsible, revision control, emissions date, and document location. The documented information will be updated monthly and it will be controlled by revision number and date of the approval.

SCHWARTZ HAUTMONT	DOCUMENTED INFORMATION CONTROL	Code: SP-01
		Rev.: 00
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7. Forms

Table 17: Documented Information control. Source: own elaboration.

SCHWARTZ HAUTMONT	DOCUMENTED INFORMATION CONTROL						Code: SP-01-01
							Rev.: 00
							Page: 5
Control access	Code	Document title	Responsible	Revision	Emission date	Document location	
.....	
.....	
.....	
.....	
Approved:			Signed:		Date:		

	IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS	Code: SP-02
		Rev.: 00
		Page 1

ANNEX II – IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS

SCHWARTZ-HAUTMONT Construcciones Metálicas, S.A.

—
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Prepared: Miquel Morales	Revised:	Aproved:
	HSE Department Manager	Top Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:

	IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS	Code: SP-02
		Rev.: 00
		Page 2

History of revisions

Date	Revision	Reason for change
23/01/2021	00	Initial Version

1. Purpose

The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to identify and evaluate the environmental aspects originated as a consequence of the activities and processes carried out in the company, in order to determine those that have significant impacts on the environment.

2. Scope

It applies to all the activities and processes developed in the organization.

3. References

- EMSM-01 (Environmental Management System Manual – 01).
- ISO 14001:2015 standard.

4. Definitions

- **Environmental Aspect:** element of the activities, products or services of an organization that can interact with the environment.
- **Significant Environmental Aspect:** element of the activities, products or services of an organization that causes a greater environmental impact than the rest of the environmental aspects generated by the activity.
- **Environmental impact:** any change in the environment that, even if it is harmful or beneficial, totally or partially, comes from the activities, products or services of the organization.
- **Evaluation of the environmental aspect:** it is a documented assessment of the environmental impact of the aspects originated by the organization.
- **Normal operating situation:** development of activities or services of an organization under controlled action conditions.

	IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS	Code: SP-02
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- **Environmental emergency situation:** unexpected situation resulting from an accident or incident.
- **Life cycle:** consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposal.

5. Responsibilities

- **EMS committee:** collaborate in the environmental aspect's identification and evaluation.
- **EMS coordinator:** collaborate in the participation of the identification and evaluation of environmental aspects and ensure its approval and supervising.
- **EMS supervisor:** ensure the procedure compliment.

6. Development and execution

Environmental aspects identification

The methodology used by Schwartz-Hautmont S.A. to identify the environmental aspects referred to is established considering the following points:

- The identification of environmental aspects will be based on the activities and processes controlled and developed by the organization.
- The operating conditions and the circumstances in which the aspects are identified will be in normal conditions and in emergency conditions.
- All operations associated with these activities and processes which may generate an impact on the environment will be disaggregated considering their assigned operating conditions.
- All the operations associated with these activities and processes will be analysed in order to identify the phases of the life cycle.
- The identified environmental aspects will be defined in order to obtain the necessary data for each aspect.
- Finally, a record of data of the identified environmental aspects and their associated activities and processes.

Environmental aspects evaluation criteria

To evaluate the identified environmental aspects, it is considered the conditions established previously in which they will develop: normal or emergency conditions. In order to carry out this evaluation under normal conditions, is considered the following methodology based on the following four criteria (C₁, C₂, C₃, C₄):

	IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS	Code: SP-02
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- **C₁ - Magnitude** (Table 18): depending on the environmental aspect considered, the magnitude may be considered as volume, frequency and extension:

Table 18: C₁ - Magnitude criteria.

Magnitude criteria (C ₁)			
Quantity	Frequency	Extension	Score
Amount generated from the aspect < 85% of the reference year.	Appearance duration <50% of uptime.	Contaminated area <10% of the total area.	Low (1)
Amount generated from the aspect between 85% and 100% of the reference year.	Appearance duration between 50% and 75% of uptime.	Contaminated surface between 10% and 25% of the total surface.	Medium (2)
Amount generated from the aspect > 100% of the reference year.	Appearance duration between 75% and 100% of uptime.	Contaminated surface > 25% of the total surface.	High (3)

- **C₂ - Dangerousness** (Table 19): referred to the significance of those aspects that generate damage (higher or lower) to the environment:

Table 19: C₂ - Dangerousness criteria.

Dangerousness criteria (C ₂)			
Environmental aspect	Low (1)	Medium (2)	High (3)
Generation of waste or by-products.	Non-hazardous waste that is destined for recovery, recycling or reuse.	Non-hazardous waste with destination to the landfill or hazardous waste with management.	Hazardous waste without management.
Consumption of chemical or special products.	No Hazard assigned.	Harmful, irritating.	Flammable, toxic, corrosive.
Consumption of materials and raw materials.	Totally recycled.	Partially recycled or with ecological criteria.	Not recycled and without ecological criteria.
Energy and natural resources consumption.	Renewable Energy.	Natural gas, electric energy.	Fossil fuels.
Soil contamination.	-	-	All the cases.

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- **C3 - Sensibility** (Table 20): related to the impact on the natural environment where environmental aspects are developed. Some aspects must be considered as predetermined based on the characteristics of the natural environment where the environmental aspects are developed.

Table 20: C3 – Sensibility criteria.

Sensibility (C ₃)			
Environmental aspect	Low (1)	Medium (2)	High (3)
Noise generation.	-	All the cases (Industrial area near homes or residential area).	-
Atmospheric emissions.	-	All the cases (Industrial area near homes or residential area).	-
Use of the space.	Industrial area degraded.	Industrial area without degrading.	-
Wastewater.	All the cases (Municipal collector or treatment plant).	-	-

- **C4 - Reference limits** (Table 21): represents the impact that an aspect can have the closer it approaches a legal or previously defined limit:

Table 21: C4 - Reference limits criteria.

Reference limits (C ₄)		
Low (1)	Medium (2)	High (3)
Parameter value < 50% of the legal or reference limit.	Parameter value between 50 and 80% of the legal or reference limits.	Parameter value between 80% and 100% of the legal or reference limits.

In order to facilitate and clarify this evaluation process under normal conditions, two specific evaluation criteria will be assigned for each identified environmental aspect as it is shown in the following table (Table 22):

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Table 22: Environmental aspect criteria.

Environmental aspect	Criteria applied
Generation of waste or by-products.	Magnitude (Quantity) and Dangerousness.
Consumption of chemical or special products.	
Consumption of materials and raw materials.	
Energy consumption and natural resources.	
Atmospheric emissions	Magnitude (Frequency) and Environmental sensitivity.
Soil discharges	Magnitude (Extension) and Dangerousness.
Wastewater	Environmental sensibility and Reference limits.
Noise generation	

Regarding the evaluation and assessment of each environmental aspect in emergency conditions, the Schwartz-Hautmont S.A methodology will be considered based on the following four criteria (K₁, K₂, K₃, K₄):

- **K₁ - Frequency** (Table 23): probability of occurrence of the impact:

Table 23: K₁ - Frequency criteria.

Frequency (K ₁)		
Low (1)	Medium (2)	High (3)
The incident, accident or emergency situation will occur once a year or less than a year.	The incident, accident or emergency situation will occur less than once a month but more than once a year.	The incident, accident or emergency situation will occur more than once a month.

	IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS	Code: SP-02
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- **K₂ - Extension** (Table 24): referring to the space of influence of the impact in relation to the environment:

Table 24: K₂ - Extension criteria.

Extension (K2)		
Low (1)	Medium (2)	High (3)
Specific area of influence.	Local or partial area of influence, without exceeding the limits of the company.	External area of influence, exceeding the limits of the company.

- **K₃ - Dangerousness** (Table 25): significance of those aspects that generate damage (higher or lower) to the environment:

Table 25: K₃ - Dangerousness criteria.

Dangerousness (K3)		
Low (1)	Medium (2)	High (3)
Substances that do not have an assigned hazard, as well as recyclable waste that do not have an assigned hazard, as well as recoverable or recyclable waste.	Substances classified as harmful, irritant, non-hazardous non-recoverable waste and substances that will be restricted in the future by legal or other requirements.	Substances classified as flammable, toxic, irritant, dangerous for the environment (including RP's) or restricted by legal or other requirements.

- **K₄ - Environmental sensibility** (Table 26): refers to the quality of the environment in which the risk, emergency or accident situation may occur.

Table 26: Environmental Sensibility criteria.

Environmental sensibility (K4)		
Low (1)	Medium (2)	High (3)
Environment with preventive containment measures or industrial environment with nearby urban centers.	Asphalted or concreted environment or close to an industrial environment with nearby houses, etc.	Natural environment with flora and fauna or very close to a residential urban environment.

	IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS	Code: SP-02
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In order to facilitate and clarify this evaluation process under normal emergency conditions, three specific evaluation criteria will be assigned for each identified environmental aspect (Sociedad Pública de Gestión Ambiental, 2009) as it is shown in the following table (Table 27):

Table 27: K4 – Environmental Sensitivity criteria.

Environmental aspect	Criteria applied
Uncontrolled product spill.	Frequency, Extension and Dangerousness.
Uncontrolled atmospheric emissions.	
Fire.	Frequency, Extension and Environmental Sensibility.
Explosion.	

Environmental Aspects Significancy

After determining a rating for each criterion, it will be determined the level of significance of the aspect and its impact on the environment under normal conditions (S) as the established product of the criteria applied for each environmental aspect (C₁, C₂, C₃, C₄) with the following formula (Figure 6) and the attached table (Table 28):

Figure 6: Significancy formula in normal conditions.

$$S = C_i \times C_m \quad ; \quad \begin{matrix} i, m \in (1, 2, 3, 4) \\ i \neq m \end{matrix}$$

Table 28: Impact significancy in normal conditions.

Score (S)	Impact Significance	Actions to be taken
1 - 2	Aspect/impacts has no or small significance.	Acceptable aspect/impact. No additional action needs to be taken.
3 - 5	Aspect/impact has medium significance.	Application of procedures or instructions, monitoring and reporting.
6 - 9	Significant (critical) aspect/impact.	The process needs to be halted and activity stopped, conduct immediate actions to change and improve process or product/service provision.

SCHWARTZ HAUTMONT	IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS	Code: SP-02
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Regarding the level of significance of the aspect and its impact on the environment in emergency conditions (E), it will be calculated as the product of the established criteria's (K₁, K₂, K₃, K₄) with the following the formula (Figure 7) and the attached table (Table 29):

Figure 7: Significancy formula in emergency conditions.

$$E = K_1 \times K_2 \times K_3 \times K_4$$

Table 29: Impact significancy in emergency conditions.

Score (E)	Impact Significance	Actions to be taken
1 - 6	Aspect/impacts has no or small significance.	Acceptable aspect/impact. No additional action needs to be taken.
7 - 17	Aspect/impact has medium significance.	Application of procedures or instructions, monitoring and reporting.
18 - 27	Significant (critical) aspect/impact.	The process needs to be halted and activity stopped, conduct immediate actions to change and improve process or product/service provision.


7. Forms

Table 30: Environmental aspects evaluation in normal conditions.

SCHWARTZ HAUTMONT	ENVIRONMENTAL ASPECTS EVALUATION IN NORMAL CONDITIONS							Code: SP-02-01	
								Rev.: 00	
								Page: 1	
Environmen- tal aspect	Activity / Process associated	Environmen- tal Factors associated	Environmen- tal impact associated	Normal conditions evaluation criteria				Total score (S)	Significancy
				C1	C2	C3	C4		
.....
.....
Approved: Signed: Date:									

	IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL ASPECTS	Code: SP-02
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Table 31: Environmental aspects evaluation in emergency conditions.

	ENVIRONMENTAL ASPECTS EVALUATION IN EMERGENCY CONDITIONS							Code: SP-02-02	
								Rev.: 00	
								Page: 1	
Environmental aspect	Activity / Process associated	Environmental Factors associated	Environmental impact associated	Emergency conditions evaluation criteria				Total score (E)	Significance
				K1	K2	K3	K4		
.....
.....
Approved:			Signed:			Date:			

	LEGAL AND OTHER REQUIREMENTS	Code: SP-03
		Rev.: 00
		Page 1

ANNEX III - LEGAL AND OTHER REQUIREMENTS

SHCWARTZ-HAUTMONT Construcciones Metálicas, S.A.

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Prepared: Miquel Morales	Revised:	Approved:
	HSE Department Manager	Top Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:

	LEGAL REQUIREMENTS AND OTHER REQUIREMENTS	Code: SP-03
		Rev.: 00
		Page 2

History of revisions

Date	Revision	Reason for change
29/01/2021	00	Initial Version

1. Purpose

The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to identify and evaluate the environmental legal requirements and other requirements which affect the company as a consequence of its activities and processes.

2. Scope

It applies to all the activities and processes developed in the organization.

3. References

- EMSM-01 (Environmental Management System Manual – 01).
- SP-01 (Specific Procedure – 01).
- ISO 14001:2015 standard.

4. Definitions

- **Requirement:** Need or expectation that is stated, generally implied or obligatory.
- **Compliance obligation:** Legal requirement that an organization has to comply with and other requirements that an organization has to or chooses to comply with.

5. Responsibilities

- **EMS committee:** collaborate in the verification of the established requirements.
- **EMS coordinator:** collaborate in the participation of compliance, review and updating of legal and environmental regulations and other requirements and ensure its supervision and approval.

	LEGAL REQUIREMENTS AND OTHER REQUIREMENTS	Code: SP-03
		Rev.: 00
		Page 3

- **Administrative:** ensure the compliance, review and updating of legal and environmental regulations and other requirements adopted by the organization.

6. Development and execution

legal requirements and other requirements access, consultation and review

An administrator will be in charge of the environmental legislation supervision ensuring their compliance, review and updating. For access, consultation and supervision of environmental legal requirements and other requirements, Schwartz-Hautmont S.A. has the contracting of an external company that offers supporting tools for the management, supervision and continuous upgrading of legal requirements through a consultation tool for the identification and management of legal requirements based on the activity and processes that are developed in the organization, the environmental aspects previously identified, our territorial location, among others.


Document management

With the support of the accredited external company, the environmental legislation supervisor will carry out evaluations regarding the degree of compliance with the applicable environmental requirements monthly. In this way, there will be the format SP-02-01 “Legal requirements and other applicable requirements” (Table 32) which includes the scope, the legal requirements and other applicable requirements, the specific article, the environmental aspect involved, a description and the compliance level.

Additionally, this data will be updated every time that the legislation requirements changes, repealed or modified, or variations in activities or processes of the organization itself. Although, in the event of possible legal breaches, the organization will undertake the appropriate corrective actions under the deadline stipulated by law.

7. Form

Table 32: Legal requirements and other applicable requirements.

	LEGAL REQUIREMENTS AND OTHER APPLICABLE REQUIREMENTS					Code: SP-03-01
						Rev.: 00
						Page: 1
Scope	Legal Requirement	Article	Environmental aspect	Description	Compliment	Notes
.....
.....
.....
Approved:		Signed:		Date:		

	ENVIRONMENTAL OBJECTIVES PLAN	Code: SP-04
		Rev.: 00
		Page 1

ANNEX IV – ENVIRONMENTAL OBJECTIVES PLAN

SCHWARTZ-HAUTMONT Construcciones Metálicas, S.A.

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Prepared: Miquel Morales	Revised:	Approved:
	HSE Department Manager	Top Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:

	ENVIRONMENTAL OBJECTIVES PLAN	Code: SP-04
		Rev.: 00
		Page 2

History of revisions

Date	Revision	Reason for change
23/12/2021	00	Initial Version

1. Purpose

The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to identify, develop, plan and implement the environmental objectives of the Company in order to ensure that the Environmental Management System is effective in advancing a process continuous improvement.

2. Scope

It applies to all the activities and processes developed in the organization.

3. References

- EMSM-01 (Environmental Management System Manual – 01).
- SP-01 and SP-02 (Specific Procedure - 01 to 02).
- ISO 14001:2015 standard.

4. Definitions

- **Objective:** result to be achieved.
- **Environmental objective:** objective set by the organization consistent with its environmental policy.
- **Continual Improvement:** recurring activity to enhance performance.
- **Indicator:** measurable representation of the condition or status of operations, management or conditions.
- **Monitoring:** determination the status of the system, process or activity.

5. Responsibilities

- **EMS committee:** collaborate in the environmental objectives plan identification, development, planification and implementation.

	OPERATIONAL CONTROL PROCESS	Code: SP-05
		Rev.: 00
		Page 1

ANNEX V - OPERATIONL CONTROL PROCESS

SHCWARTZ-HAUTMONT Construcciones Metálicas, S.A.

—
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Prepared: Miquel Morales	Revised:	Approved:
	HSE Department Manager	Top Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:

	OPERATIONAL CONTROL PROCESS	Code: SP-05
		Rev.: 00
		Page 2

History of revisions

Date	Revision	Reason for change
23/12/2021	00	Initial Version

1. Purpose

The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to define, implement, control and maintain the necessary operational processes in accordance with the Environmental Management System requirements with the aim of continuously improving the organization's environmental performance and ensuring the quality of all the processes involved.

2. Scope

It applies to all the activities and processes related with significative environmental aspects developed in the organization.

3. References

- EMSM-01 (Environmental Management System Manual – 01).
- SP-01 to SP-03 (Specific Procedure – 01 to 03).
- ISO 14001:2015 standard.

4. Definitions

- **Process:** set of interrelated or interacting activities which transforms inputs into outputs.

5. Responsibilities

- **EMS coordinator:** collaborate in the participation of the procedure compliment and ensure its approval and supervising.
- **EMS supervisor:** ensure the procedure compliment.

	OPERATIONAL CONTROL PROCESS	Code: SP-05
		Rev.: 00
		Page 3

6. Development and execution

Operational control process


The operational control will be carried out through procedures and technical instructions in accordance with the Environmental Management System requirements based on the activities and processes performed in the facilities, the established significant environmental aspects, the legal and other requirements, the risks and opportunities and the environmental program objectives of the multinational.

Thus, the following section describes the technical instructions (TI-01 to 05) regarding to the implementation, control and maintenance of the operational control of the main environmental vectors identified. If planned or unplanned changes are established, the consequences will be studied taking into consideration the appropriate actions to mitigate the adverse effects when it is necessary, such as the establishment of corrective actions or the revision of the processes involved.

	OPERATIONAL CONTROL PROCESS	Code: SP-05
		Rev.: 00
		Page 4


7. Technical Instructions

Table 34: Waste Management.

	WASTE MANAGEMENT	Code: TI-01
		Rev.: 00
		Page 1
<p>1. Purpose: The purpose of this technical instruction is to describe the methodology used in Schwartz-Hautmont S.A. to manage and control the waste generation as a consequence of its activities and processes.</p> <p>2. Scope: It applies to all the activities and processes that generate some type of waste in the organization.</p> <p>3. Responsibilities:</p> <ul style="list-style-type: none"> • EMS supervisor: guarantee the correct performance of the technical instructions supervising the methodology development and performing the control measures. • Warehouse managers y staff managers: collaborate in the participation of the technical instruction procedures compliment supporting, identifying, communicating and controlling the waste generation. • Maintenance staff: support the waste management control and maintenance. <p>4. Development:</p> <p><u>Methodology</u></p> <ul style="list-style-type: none"> • All the waste generated in the company will be identified and classified according to its characteristics, typifying it into hazardous (aerosols, hydraulic oils, acid waters, etc) and non-hazardous waste (plastic, wood, organic, etc). • Container areas will be enabled for the disposal of waste and will have their specific labelling. Waste categorized as hazardous will have a specific label containing the name of the waste, the LER code, the ADR code, the details of the company and the respective indicative pictograms of dangerousness. • A specific area will be enabled for the storage of products classified as dangerous, which will have the appropriate conditions. The stay of these hazardous waste may not exceed six months. • All the waste generated into the facilities will be identified and reported by the warehouse managers and the staff managers to the maintenance staff. The waste disposal in the main container area will be carried out by the maintenance staff. The maintenance manager will inform the EMS supervisor when the collection is appropriate (time exceed, container filling, etc). The EMS supervisor will inform to an external company in charge to collection of waste. <p><u>Control measures</u></p> <ul style="list-style-type: none"> • Periodical waste collection (or upon a request) by an external company qualified. • Weekly checklist for the control and maintenance of container areas, waste segregation and container labelling and control and maintenance of the specific storage area for hazardous products, labelling and waste storage. • Monthly register of the waste output record. 		
Prepared: Miquel Morales	Revised:	Approved:
Signature:	Signature:	Signature:
Date:	Date:	Date:


	OPERATIONAL CONTROL PROCESS	Code: SP-05
		Rev.: 00
		Page 5

Table 35: Natural resources consumption.

	NATURAL RESOURCES CONSUMPTION	Code: TI-02
		Rev.: 00
		Page 1
<p>1. Purpose: The purpose of this technical instruction is to describe the methodology used in Schwartz-Hautmont S.A. to report, manage and reduce the natural resources consumption (considering it as water, electricity, natural gas, propane, gasoline and raw materials) as a consequence of its activities and processes.</p> <p>2. Scope: It applies to all activities and processes that consume natural resources in their functional process.</p> <p>3. Responsibilities:</p> <ul style="list-style-type: none"> • EMS supervisor: guarantee the correct performance of the technical instructions supervising the methodology development and performing the control measures. • Administrative: collaborate in the participation of the technical instruction procedures compliment supporting with the data collection. <p>4. Development:</p> <p><u>Methodology</u></p> <ul style="list-style-type: none"> • The Administrative personnel will be responsible for collecting the consumption data and communicated to the EMS supervisor in charge to maintaining the register. • The information will be used later to carry out a minimization studies and the calculation of the carbon footprint carried out by the EMS supervisor. The results of the analyses and measurements will be compared with the values of previous years. <p><u>Control measures</u></p> <ul style="list-style-type: none"> • Monthly register of the natural resource consumption. • Annually calculation of the carbon footprint. • Annually consumption minimization study. 		
Prepared: Miquel Morales	Revised:	Approved:
Signature:	Signature:	Signature:
Date:	Date:	Date:

	OPERATIONAL CONTROL PROCESS	Code: SP-05
		Rev.: 00
		Page 6

Table 36: Soil and water discharges control.

	DISCHARGES CONTROL	Code: TI-03
		Rev.: 00
		Page 1
<p>1. Purpose: The purpose of this technical instruction is to describe the methodology used in Schwartz-Hautmont S.A. to control the soil and water discharges as a consequence of its activities and processes.</p> <p>2. Scope: It applies to all waste generated in the facilities, including all chemical products handling and storage activities, as well as maintenance or construction activities that may cause a contaminating effect by uncontrolled soil and/or water discharges.</p> <p>3. Responsibilities:</p> <ul style="list-style-type: none"> • EMS supervisor: guarantee the correct performance of the technical instructions supervising the methodology development and performing the control measures. • Administrative: collaborate in the participation of the technical instruction procedures compliment supporting with the compliance, review and updating of legal and environmental regulations and other requirements adopted by the organization. <p>4. Development:</p> <p><u>Methodology</u></p> <ul style="list-style-type: none"> • Periodic analysis and measurements will be carried out by external companies accredited for this purpose. Discharge points will be set up at the facilities for sampling. The results of the analyses and measurements will be compared with the legislation limit values. • If the results of the analyzes don't comply with the minimum requirements established, the pertinent measures must be taken to verify these requirements within a period of less than 2 months or what is stipulated by law. <p><u>Control measures</u></p> <ul style="list-style-type: none"> • Quarterly analysis of water for human consumption performed by accredited external company (RD 140/2003). • Annually sanitary water disinfection (legionella) performed by accredited external company (RD 865/2003). • Annually wastewater analysis performed by accredited external company (requirements stipulated by law). • Annually register of analysis performed during the year. 		
Prepared: Miquel Morales	Revised:	Approved:
Signature:	Signature:	Signature:
Date:	Date:	Date:




	OPERATIONAL CONTROL PROCESS	Code: SP-05
		Rev.: 00
		Page 7


Table 37: Noise control.

	NOISE CONTROL	Code: TI-04
		Rev.: 00
		Page 1
<p>1. Purpose: The purpose of this technical instruction is to describe the methodology used in Schwartz-Hautmont S.A. to control the noise generation as a consequence of its activities and processes.</p> <p>2. Scope: It applies to all the activities and processes that generate noise in the organization in their functional activity.</p> <p>3. Responsibilities:</p> <ul style="list-style-type: none"> • EMS supervisor: guarantee the correct performance of the technical instructions supervising the methodology development and performing the control measures. • Administrative: collaborate in the participation of the technical instruction procedures compliment supporting with the compliance, review and updating of legal and environmental regulations and other requirements adopted by the organization. <p>4. Development:</p> <p><u>Methodology</u></p> <ul style="list-style-type: none"> • Annually an evaluation of the noise exposition will be carried out by an external company accredited for this purpose. The measurement will be carried for all the activities and processes considered that generate noise during their functional activity. The equivalent daily exposure level and the peak level will be determined for each of the jobs with risk of exposure to noise. In order to evaluate all the activities and processes, the necessary visits to the facilities will be carried out. The results of the analyses and measurements will be compared with the legislation limit values. • Regarding the results of the analysis, workers must be informed and trained in relation to the results of the evaluation and the risks of noise for their hearing. The hearing protectors used (PPE) will comply with the provisions of the regulations. If there are substantial modifications to the facilities or the tasks of the workers, additional evaluations must be carried out. • If the results of the analyzes don't comply with the minimum requirements established, the pertinent measures must be taken to verify these requirements within a period of less than 2 months or what is stipulated by law. <p><u>Control measures</u></p> <ul style="list-style-type: none"> • Annually evaluation of the noise exposition by an accredited external company (RD 286/2006). • Annually register of noise measurements. 		
Prepared: Miquel Morales	Revised:	Approved:
Signature:	Signature:	Signature:
Date:	Date:	Date:

	OPERATIONAL CONTROL PROCESS	Code: SP-05
		Rev.: 00
		Page 8

Table 38: Atmospheric emissions control.

	ATMOSPHERIC EMISSIONS CONTROL	Code: IT-05
		Rev.: 00
		Page 1
<p>1. Purpose: The purpose of this technical instruction is to describe the methodology used in Schwartz-Hautmont S.A. to control the atmospheric emissions as a consequence of its activities and processes carried out in the company.</p> <p>2. Scope: It applies to all the activities and processes that generate atmospheric emissions in the organization in their functional activity.</p> <p>3. Responsibilities:</p> <ul style="list-style-type: none"> • EMS supervisor: guarantee the correct performance of the technical instructions supervising the methodology development and performing the control measures. • Administrative: collaborate in the participation of the technical instruction procedures compliment supporting with the compliance, review and updating of legal and environmental regulations and other requirements adopted by the organization. <p>4. Development:</p> <p><u>Methodology</u></p> <ul style="list-style-type: none"> • Annually an atmospheric emissions measurement will be carried out by an external company accredited for this purpose. The measurement will be carried for all the activities and processes considered that generate atmospheric emissions during their functional activity. The results of the analyses and measurements will be compared with the legislation limit values. • If the results of the analyzes don't comply with the minimum requirements established, the pertinent measures must be taken to verify these requirements within a period of less than 2 months or what is stipulated by law. <p><u>Control measures</u></p> <ul style="list-style-type: none"> • Annually atmospheric emission measurement by an accredited external company. • Annually register of atmospheric emission measurements. 		
Prepared: Miquel Morales	Revised:	Approved:
Signature:	Signature:	Signature:
Date:	Date:	Date:

	EMERGENCY PREPAREDNESS AND RESPONSE	Code: SP-06
		Rev.: 00
		Page 1

ANNEX VI - EMERGENCY PREPAREDNESS AND RESPONSE

SHCWARTZ-HAUTMONT Construcciones Metálicas, S.A.

—
*This Procedure does not contain confidential information and may be available as
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Prepared: Miquel Morales	Revised:	Approved:
	HSE Department Manager	Top Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:

	EMERGENCY PREPAREDNESS AND RESPONSE	Code: SP-06
		Rev.: 00
		Page 2

History of revisions

Date	Revision	Reason for change
23/12/2021	00	Initial Version

1. Purpose

The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to identify and plan the required preparedness and response measures face to potential incidents and emergency situations which can affect the multinational.

2. Scope

It applies to all the activities and processes developed and all the installations and areas located in the multinational.

3. References

- EMSM-01 (Environmental Management System Manual – 01).
- SP-01, SP-02, SP-05 and SP-08 (Specific Procedure – 01, 02, 05 and 08).
- ISO 14001:2015 standard.

4. Definitions

- **Emergency:** situation of danger or disaster that requires immediate action.
- **Incident:** event of medium importance that occurs during an operation and that departs from the expected form of operation.
- **Accident:** those uncontrolled incidents in an industrial activity capable of causing material or physical damage.

5. Responsibilities

- **EMS committee:** collaborate in the identification and measures establishment against emergency situations.

	EMERGENCY PREPAREDNESS AND RESPONSE	Code: SP-06
		Rev.: 00
		Page 3

- **EMS coordinator:** collaborate in the participation of the identification and measures establishment against emergency situations and ensure its approval and supervising.
- **EMS supervisor:** ensure the procedure compliment.

6. Development and execution

Emergency and preparedness plan

The emergency plan, procedures and instructions for emergency preparedness and response will be elaborated based on the potential emergency scenarios identified. In order to identify this possible emergency situations, it will be considered among others:

- The different kind of activities and processes developed in the company and the environmental aspects associated with them, especially those which are related with emergency situations.
- Previous experience of the organization face to incidents or emergency situations.
- History of incidents and emergencies of the company or another similar companies.
- Legal requirements and other requirements.

Then, the identified specific potential accidents based on our circumstances and considerations above are fire, explosion, uncontrolled discharges and uncontrolled atmospheric emissions.

In the preparation of the emergency plan, procedures and instructions for emergency preparedness and response will include all the necessary actions regarding the prevention of emergency situations, the control and minimisation of the effects of the associated environmental aspects and the review and mitigation of the impact produced especially after an incident or emergency situation has occurred. The control of these information will be shown in the format SP-06-01 "Emergency response plan" (Table 39).

The Emergency Response Plan will be reviewed annually by revising the relevant sections. If changes or modifications are made to the Environmental Management System, the emergency plan or the procedures involved in it will be reviewed in accordance with the changes made.

Drill programs

In order that the organisation and external emergency services can effectively respond to an emergency situation and prevent or mitigate it, periodic testing of the emergency procedures or plan will be carried out through emergency drills. These procedures will be periodically reviewed both based on the drills performed and real emergency situations.

	INTERNAL AUDITORY PROCEDURE	Code: SP-07
		Rev.: 00
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ANNEX VII - INTERNAL AUDITORY PROCEDURE

SCHWARTZ-HAUTMONT Construcciones Metálicas, S.A.

—
*This Procedure does not contain confidential information and may be available as
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Prepared: Miquel Morales	Revised:	Approved:
	HSE Department Manager	Top Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:

	INTERNAL AUDITORY PROCEDURE	Code: SP-07
		Rev.: 00
		Page 2

History of revisions

Date	Revision	Reason for change
23/12/2021	00	Initial Version

1. Purpose

The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to verify its compliance with the requirements of the standard and the Environmental Management System implemented, with the aim to ensure its requirements fulfilment and provide information about its implementation and maintenance.

2. Scope

It applies to all the activities and processes established in the organization.

3. References

- EMSM-01 (Environmental Management System Manual – 01).
- SP-01 to 06 and 08 (Specific Procedure – 01 to 06 and 08).
- ISO 14001:2015 standard.
- ISO 19011:2018 standard.

4. Definitions

- **Audit:** systematic, independent and documented process to obtain audit evidence and evaluate it objectively in order to determine the extent to which the audit criteria are met.
- **Audit program:** arrangements for a set of one or more audits planned for a specific time frame and directed towards a specific purpose.
- **Audit scope:** scope and limits of an audit.
- **Audit plan:** description of the activities and arrangements for the audit.
- **Audit findings:** result of the evaluation of the audit evidence collected against the audit criteria.

	INTERNAL AUDITORY PROCEDURE	Code: SP-07
		Rev.: 00
		Page 3

- **Audit team:** one or more auditors who carry out an audit with the support, if necessary, of technical experts.
- **Non-conformity:** evidence of non-compliance with the ISO 14001:2015, the EMS's own requirements, the applicable legal and regulatory requirements or an evident risk. It is considered as a systematic and serious failure.
- **Observation:** evidence of an undesirable or inadequate practice that has been detected on time and could involve a deviation in a future. It is considered as a isolated and light failures.
- **Opportunity of improvement:** recommendation and suggestion for the EMS improvement.

5. Responsibilities

- **Top Manager:** approve the internal auditory program and the auditor team.
- **EMS coordinator:** collaborate in the participation of the procedure compliment and ensure its approval and supervising.
- **Auditor team:** ensure the procedure compliment.
- **Audited department:** collaborate in the participation of the procedure compliment and document and forms supporting.

6. Development and execution

Internal Audit program

For the programming of the internal audit, the changes that affect the organization, the environmental importance of the processes and the previous results of previous audits will be taken into account.

Likewise, the multinational will annually establish an internal audit plan approved by the Top Manager and the EMS coordinator, which will include the auditory objectives and the scope of the system, the designation of the audit team and the auditor chief, the audited requirement, and the proposed schedule and date for its implementation. The control of these information will be shown in the format SP-07-01 "Internal audit program" (Table 41).

Internal Audit plan

The internal audit process will be carried out by the organization's own personnel, where the designated audit team and the auditor chief will be objective, impartial and have education and knowledge about ISO 14001:2015, in addition the auditor chief must have a minimum experience of two internal audits performed.

	INTERNAL AUDITORY PROCEDURE	Code: SP-07
		Rev.: 00
		Page 4

The auditor chief will be responsible for preparing the auditory plan, which will include the identification data of the audit, the audit team and the documents and forms consulted that will be provided by a person from the department. Before executing it, the Internal Audit Program is passed to the person in charge of the area that will be audited. The control of these information will be shown in the format SP-07-02 "Internal audit plan" (Table 42).


Internal Audit findings and report

When the date of the audit arrives, the audit team in charge will carry out the necessary checks and evaluations of each requirement indicated with the collaboration of those responsible involved and other audited personnel, using information gathering methods such as interviews, observation of activities, processes and situations, and review of documents and records. The control of these information will be shown in the format SP-07-03 "Finding's report" (Table 43).

Finally, once the evaluation has been carried out, the audit team will prepare the Internal Audit Report, where the evidences found are noted down and recorded individually with an assigned identification number. Additionally, the audit report will record the department or area audited, the date of its hearing, and the description and type of evidence (non-conformity, observation or opportunity for improvement). The control of this information will be shown in the format SP-07-04 "Internal audit report" (Table 44).

7. Forms

Table 41: Audit program.

	INTERNAL AUDIT PROGRAM	Code: SP-07-01																																																														
		Rev.: 00																																																														
		Page 1																																																														
Program Information																																																																
Objective:	Scope:																																																														
Audit team / Audit team chief:																																																															
Schedule program																																																																
Requirement	Responsible/s	Month																																																														
.....	<table border="1" style="width: 100%; height: 100%;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																																																														
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Approved:		Signed: Date:																																																														

SCHWARTZ HAUTMONT	INTERNAL AUDITORY PROCEDURE	Code: SP-07
		Rev.: 00
		Page 5

Table 42: Internal audit plan.

SCHWARTZ HAUTMONT	INTERNAL AUDIT PLAN				Code: SP-07-02
					Rev.: 00
					Page 1
Plan information					
Objectives:					
Scope:					
Requirements / criteria:					
Audit team / Audit team chief:					
Date / hour	Requirements	Auditor	Audited	Notes	
.....	
.....	
Approved:		Signed:		Date:	

Table 43: Finding's report.

SCHWARTZ HAUTMONT	FINDING'S REPORT			Code: SP-07-03
				Rev.: 00
				Page 1
Requirement	Compliment	Observations		
.....		
.....		
Approved:		Signed:		Date:

Table 44: Internal audit report.

SCHWARTZ HAUTMONT	INTERNAL AUDIT REPORT				Code: SP-07-04
					Rev.: 00
					Page 1
Report information					
Internal audit report ident. number:					
Date/hour:					
Audited department / area:					
Auditor:					
Requirement:					
Evidence:					
.....					
.....					
Evidence typology:					
<input type="checkbox"/> Non-conformity		<input type="checkbox"/> Observation		<input type="checkbox"/> Opportunity of improvement	
Approved:		Signed:		Date:	

	<p align="center">NON-CONFORMITY CONTROL PROCEDURE</p>	Code: EP-08
		Rev.: 00
		Page 1

ANNEX VIII – NON-CONFORMITY CONTROL PROCEDURE

SHCWARTZ-HAUTMONT Construcciones Metálicas, S.A.

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Prepared: Miquel Morales	Revised:	Approved:
	HSE Department Manager	Top Manager
Signature:	Signature:	Signature:
Date:	Date:	Date:

	NON-CONFORMITY CONTROL PROCEDURE	Code: EP-08
		Rev.: 00
		Page 2

History of revisions

Date	Revision	Reason for change
23/12/2021	00	Initial Version

1. Purpose

The purpose of this procedure is to describe the methodology used in Schwartz-Hautmont S.A. to investigate, evaluate and correct through corrective actions the causes of nonconformities.

2. Scope

It applies to all nonconformities associated with the activities and processes developed in the organization.

3. References

- EMSM-01 (Environmental Management System Manual – 01).
- SP-01 to 07 (Specific Procedure – 01 to 07).
- ISO 14001:2015 standard.

4. Definitions

- **Nonconformity:** non-fulfilment of a requirement.
- **Corrective action:** action to eliminate the cause of a nonconformity and/or to prevent recurrence.
- **Continuous improvement:** recurring activity to improve performance.

5. Responsibilities

- **EMS coordinator:** determine the corrective measures to face to nonconformities and collaborate in the participation of the procedure compliment and ensure its approval and supervising.
- **EMS supervisor:** ensure the procedure compliment and the corrective actions and monitoring actions to face to nonconformities.

	NON-CONFORMITY CONTROL PROCEDURE	Code: EP-08
		Rev.: 00
		Page 3

6. Development and execution

Nonconformities control procedure

For the management of non-conformities, the methodology used in Schwartz-Hautmont S.A. for the identification, control and correction of nonconformities is described considering the following steps sequentially:

1. **Nonconformity identification:** first, the identification and the register of the nonconformity. These nonconformities can be detected by internal and external audits, reviews of the environmental management system, legal non-compliments, etc. and they may be identified by any member of the company or interested party that detects a possible non-compliment of the requirements. As soon as a non-conformity is detected and identified, it should be reported to the EMS supervisor for inspection to identify if such a non-conformity exists.
2. **Corrective actions:** the next step will be to take immediate actions in order to react as soon as possible to the non-conformity with the aim of correcting or mitigating the impact produced as far as possible. All immediate actions will be recorded, dated and responsible for carrying them out will be established.
3. **Analysis of the causes:** the causes that have generated the non-conformity and its possible origin or reason for which it has occurred will be analysed. Similar non-conformities that have occurred previously will be considered and it will be assessed whether they can potentially be repeated.
4. **Preventive actions:** it will be determined the necessary actions to eliminate the causes that have generated the non-conformity, establishing dates, deadlines and the personnel responsible for carrying them out. The possible incorporation of changes in the environmental management system due to corrective actions will be considered.
5. **Monitoring actions:** the necessary actions will be determined to monitor and control and verify the effectiveness of the previously planned corrective actions, establishing dates, deadlines and personnel responsible for carrying them out.
6. **Close out verification:** finally, the effectiveness of the corrective action for the correction of the non-conformity will be evaluated for the established period. In case of the non-conformity has not been corrected, the necessary actions for monitoring, control and verification of the effectiveness of the proposed corrective actions must be reconsidered and new deadlines established.


The control of these information will be shown in the format SP-08-01 “Nonconformity inform and corrective actions” (Table 45) which includes the nonconformities identification and the root cause(s) of non-conformances or non-compliances, the

	NON-CONFORMITY CONTROL PROCEDURE	Code: EP-08
		Rev.: 00
		Page 4

corrective and preventive actions determined, the monitoring planned actions and the verifying of the nonconformity close out and the effectiveness of corrective actions established.

7. Forms

Table 45: Nonconformity inform and corrective actions.

	NON-CONFORMITY INFORM AND CORRECTIVE ACTIONS			Code: SP-08-01
				Rev.: 00
				Page 1
Nonconformity identification				
Ident. N°:	Nonconformity Origin:	Opening date:		
.....		
Nonconformity description:				
.....				
Responsible:	Department:	Date:		
.....		
Corrective actions				
N°	Corrective action	Responsible	Date	
.....	
Root cause analysis				
Cause description:				
.....				
Preventive actions				
N°	Preventive action	Responsible	Date	
.....	
Monitoring actions				
Date	N°	Monitoring action	Responsible	Result
.....
Close out verification state				
Closed out? (YES or NOT):				
<input type="checkbox"/> YES		<input type="checkbox"/> NOT		
Responsible: Signed: Close out date:		N° of new monitoring Action Responsible: Signed: Date:		
Approved:		Signed:		Date:

