

Occupational health and safety policy and compliance audit for the welder profession in a metal confectionery company

Elena Anda Botoc¹, Claudiu Babiş¹, Anișoara Habuc¹, George Mit¹ and Andrei Dimiteșcu¹

¹ Faculty of Industrial Engineering and Robotics, National University of Science and Technology Polytechnic Bucharest, Romania, ORCID: 0009-0006-3403-8711, 0009-0009-4174-056X, 0009-0003-7839-2227, 0009-0004-8933-4505 and 0009-0008-9650-804X

E-mail: andabotoc@yahoo.com

Abstract. The company analyzed in the paper presented attaches great importance to the activity of protecting all employees and its assets against the risks of injury or damage, considering life to be the most valuable asset. Therefore, occupational safety and health must be integrated through the collective effort to achieve the desired quality of the services provided. In this paper I wanted to highlight the fact that obtaining positive results in the field of OSH involves much more than the implementation of a formalized structure, the management of a company must develop a culture of continuous improvement and involvement / participation of all employees in order to generate positive effects on OSH performance, as it refers to their health and physical integrity. The implementation of these measures and conclusions can significantly contribute to reducing the risks of occupational accidents and illnesses for any employee, not just for the welding profession, thus promoting a safer and healthier working environment.

Keywords: *work accident, risk of injury, physical integrity, occupational disease*

1. The company's responsibilities in the field of occupational safety and health

At the Metalconstruct company level, there are two prevention and protection services, one internal and one external. The internal prevention and protection service is organized under the direct subordination of the employer and consists of three persons appointed by decision: a head of the Service and two designated workers. Workers in the Internal Prevention and Protection Service carry out only prevention and protection activities, or at most complementary activities such as: fire prevention and extinguishing and environmental protection.

Main activities of the internal prevention and protection service:

- coordinate occupational health and safety measures for employees, suppliers and customers;
- to establish for workers attributions and responsibilities incumbent on them in the field of occupational safety and health, corresponding to the functions performed;
- to ensure training and control over the way in which workers acquire and apply the legal provisions in the field of occupational safety and health;
- to develop occupational health and safety policies and procedures/instructions, applicable in accordance with the company's activity;
- to ensure the application of internal occupational health and safety regulations;

- to represent the interests of society in matters related to the field of occupational safety and health;
- to prepare the documents related to the occupational health and safety training for all the company's employees;
- to carry out general introductory training to employment for each person;
- to verify the performance of on-the-job training and periodic training for all employees;
- to participate in the identification and assessment of the risks of accidents at the workplace;
- to elaborate in accordance with the legal regulations the reports on work accidents;
- to carry out internal inspections and audits of workplaces from the point of view of occupational safety;
- to support the use of hygienic-sanitary equipment and materials;
- to draw up the necessary personal protective equipment, if applicable;
- to immediately notify the state authorities, in accordance with the legal provisions, of any work accident/incident produced during the work process;
- to participate, together with the persons designated by decision of the company's management, in the investigation of work accidents that cause temporary incapacity for work;
- centralize data on incidents and accidents at work, as well as information gathered from internal controls and audits.

The company respects the legislative norms in the field of safety and health at work [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17].

2. Legal requirements applicable to the organization

The legal requirements applicable to the organization are set out below.

In order to ensure optimal working conditions, to protect the life, physical and mental integrity, and health of workers, the following provisions are applied in the performance of work processes:

- Law no. 319/2006-Law on Safety and Health at Work;
- HG. No. 1425/2006-Methodological norms for the application of Law no. 319/2006;
- GD no. 955/2010-For amending and supplementing the Methodological Norms for the application of the provisions of the Law on Safety and Health at Work no. 319/2006, approved by Government Decision no. 1.425/2006;
- GD no. 971/2006-Minimum requirements for safety and/or health signaling at the workplace;
- GD no. 1028/2006-Minimum occupational health and safety requirements regarding the use of equipment with a viewing screen;
- GD no. 1048/2006-Minimum safety and health requirements for the use by workers of personal protective equipment at the workplace;
- GD no. 1051/2006-Minimum safety and health requirements for manual handling of masses that pose risks to workers, especially with dorso-lumbar disorders;
- GD no. 1091/2006-Minimum health and safety requirements for the workplace;
- GD no. 1146/2006-Minimum safety and health requirements for the use of work equipment by workers at work;
- Own OSH instructions (which include the main measures to be applied and respected by all employees, for the prevention of work accidents and occupational diseases).
- GEO 195/2005-Emergency Ordinance on environmental protection - repealing L 137/1995;
- GD no. 1213/2006-Decision for establishing the framework procedure for environmental impact assessment and for certain public and private projects;
- Ordinance no. 876/ 2004-Order for the approval of the Procedure for the authorization of activities with significant impact on the environment;
- Law no. 107 / 1996-Water Law;
- GD no. 188 / 2002-Decision approving NTPA 001/2002 and NTPA 002/2002 and NTPA 011, which contain the conditions for discharge of wastewater into the aquatic environment;
- GEO no. 243/2000-Emergency Ordinance – protection of the atmosphere;

-Ord. no. 462/1993-Order for the approval of the technical conditions regarding atmospheric protection.

-Methodological norms regarding the determination of emissions of air pollutants produced by stationary sources;

-GEO no. 78/2000-Emergency Ordinance – on the waste regime;

-GD no. 856/2002-Decision – waste management records and for the approval of the list of waste, including hazardous waste;

-GD no. 349/2005-Decision on waste storage;

-Ord. no. 647/2005-Emergency Ordinance – approval of the methodological norms regarding the elaboration of emergency plans in case of incidents involving dangerous substances;

Reference documents:

-SR EN ISO 9001/2015: Quality management systems. Requirements.

-SR EN ISO 9000/2015: Quality management systems. Fundamental principles and vocabulary. SR EN ISO 9004/2015: Quality management systems. Guidelines for improving performance.

-SR ISO 10005/2015: Quality management. Guide to drawing up quality plans.

-SR ISO 45001/2015: Occupational health and safety management systems. Requirements and Guidelines for Use

3.Summary description of the compliance audit for the analyzed organization

Following the application of the audit method, for the sheets A, B and C within the organization Metalconstruct SRL, having the workplace as an audited objective welder, the data from table 1 were obtained for the General Compliance Level.

Table 1 Overall Compliance Level

Plug code	Name	Score		Level of conformare
		maximum (PM)	obtained (PO)	
A.	Employer's obligations	147	130	89 %
B.	Workers' rights and obligations	48	41	86 %
C. General Cerințe				
C.1.	Minimum occupational health and safety requirements	87	74	85%
C.2.	Requirements minime for Signaling (safety and/or health at work	66	61	93%
C.3.	Minimum safety and health requirements for the use of work equipment by workers at work	111	111	100%
C.5.	Minimum safety and health requirements for workers' use of personal protective equipment at work	18	18	100%
C.6	Minimum safety and health requirements for manual handling of masses pose risks to workers, in particular from low back disease	9	9	100%
C.7	Minimum safety and health requirements relating to the exposure of workers to noise hazards	39	36	93%
C.21	Surveillance of workers' health	45	45	100%
		TOTAL		NCg
		570	525	92%

Following the application of the audit method, for the A, B and C sheets within the Metalconstruct organization having the workplace as an audited objective welder, the data from table 2 were obtained for the General Security Level.

Table 2 General security level

Plug code	Name	Score		Security level	Risk level
		Max. (PM)	Obt. (PO)		
A.	Employer's obligations	363	330	91%	Medium
B.	Workers' rights and obligations	99	90	91%	Low
C. General Cerințe					
C.1	Minimum occupational health and safety requirements	195	186	95%	Low
C.2	Minimum requirements for safety and/or health signage at work	177	165	93%	Low
C.3	Minimum safety and health requirements for workers' use of work equipment	333	333	100%	Low
C.5	Minimum safety and health requirements for workers' use of equipment personal protective measures at work	54	54	100%	Low
C.6	Minimum safety and health requirements for manual handling of masses posing risks to workers, in particular from lumbar diseases	27	27	100%	Low
C.7	Minimum safety and health requirements relating to the exposure of workers to noise hazards	117	108	93%	Low
C.21.	Surveillance of workers' health	132	132	100%	Low
		TOTAL		NSg	NRg
		1497	1425	95%	Low

The correspondence relationship between the level of security and the level of risk of the analyzed objective is presented in Table 3.

Table 3 Correspondence relationship between the level of security and the level of risk of the analyzed objective

Security level	Risk level
91-100%	Low risk
81-90%	Medium risk
71-80%	High risk
under 71%	Very high risk

4.Environmental policy

In order to continuously improve, our environmental management system has as its main objectives measures to preserve, protect and improve the quality of the environment, measures to prevent environmental incidents, ensure the safety and health of workers, guarantee the obtaining of competent services in order to meet the customer's requirements. The objectives of the top management policy consist of: the products/services provided are the result of well-established processes that are based on understanding the customer's requirements, in order to ensure that the customer's trust is gained over the management system; our management system complies with the requirements of SR EN ISO 14001:2015 standards; monitoring and evaluating the continuous improvement of the business and processes, in order to meet the requirements of its own employees and customers; understanding customer expectations and change needs, which leads to maintaining competitive advantages over the competition; equal treatment for all employees, with integrity and respect.

Table 4 presents the risk analysis and opportunities for the organization.

Table 4 Environmental aspects

Environmental Aspect	Impact	Objectives	Targets
Energy consumption in welding and cutting operation	Consumption of natural resources	Reduction of energy consumption	Replacing EM with modern ones with low energy consumption
Discharge of emissions/pollutants into the atmosphere during the welding operation and Flex cutting	Environmental pollution	Reducing air pollution	Replacing the exhaust system with a high-performance one
Noise in the atmosphere during welding, cutting, assembly	Noise pollution	Reducing noise pollution	Soundproofing of production workshop walls
Generation of metal waste	Air, water, soil pollution	Reducing air, soil and water pollution	Reducing the amount of waste by storing, handling and transporting it in safety
Dust emissions into the atmosphere when grinding metal fabrications	Air, water, soil pollution	Reducing air, soil and water pollution	Replacing the exhaust system with a high-performance one
Emissions of pollutants into the atmosphere, volatile organic compounds during the operation of degreasing, priming and painting	Air, water, soil pollution	Reducing air, soil and water pollution	Replacing the exhaust system with a high-performance one
Generation of paint waste, varnish	Air, water, soil pollution	Reducing air, soil and water pollution	Reducing the amount of waste by storing, handling and transporting it in safety and by a company specialized in waste management in order to carry out treatment operations prior to recovery or disposal operations by contract.

5. Conclusions

Following the audit on the compliance of the workplaces with the occupational health and safety requirements provided by the criteria in the field (regulations and own instructions on occupational safety), based on the audit work sheets A, B and C, the following conclusions can be drawn:

-analyzing the values, it results that the general security level is 95%, which corresponds to a low risk level of the analyzed job (according to the correspondence relationship between the security level and the risk level of the analyzed objective in the table);

-this reflects a very good knowledge and involvement of the company's management, as well as the fulfillment by the employer of the obligations incumbent on him in the field of occupational health and safety management according to the legislation in force.

References

- [1] ASRO – SR EN ISO 45001:2015 Occupational Health and Safety Management Systems
- [2] The I.N.C.D.P.M. Bucharest Method for Assessing the Risks of Accidents and Occupational Diseases and Assessing the Risks of Health and Health at Work
- [3] "Occupational Health and Safety Management. Design, implementation" - Stefan P.Funar; Marilena Gheorghe, BREN Publishing House
- [4] Occupational health and safety management. Guide for the evaluation of compliance with legal requirements – Doru Darabonț, AGIR 4 publishing house. Occupational Safety and Health Audit Course
- [5] Law no. 319/2006 - Law on Safety and Health at Work;
- [6] HG. No. 1425/2006 - Methodological norms for the application of Law no. 319/2006;
- [7] GD no. 955/2010 - for amending and supplementing the Methodological Norms for the application of the provisions of the Law on Safety and Health at Work no. 319/2006, approved by Government Decision no. 1.425/2006
- [8] GD no. 971/2006 - Minimum requirements for safety and/or health signage at the workplace
- [9] GD no. 1048/2006 - Minimum safety and health requirements for the use by workers of personal protective equipment at the workplace;
- [10] GD no. 1051/2006 - Minimum safety and health requirements for the manual handling of masses that pose risks to workers, especially of dorso-lumbar disorders
- [11] GD no. 1028/2006 - Minimum occupational health and safety requirements regarding the use of equipment with a viewing screen;
- [12] GD no. 1146/2006 - Minimum health and safety requirements for the use of work equipment by workers at work
- [13] L 211/2011 – selective collection, designated responsible person, extended responsibility for production, etc.;
- [14] Law 107/1996, the water law;
- [15] Air Law 104/2011 on ambient air quality
- [16] Compliance with European Regulation 1271/2008 on the Regime of Hazardous Substances;
- [17] SR EN ISO 9001/2015, Quality Management Systems. Requirements