

SAFETY MANAGEMENT OF EMPLOYEES PERFORMING WORK IN THE CONSTRUCTION SECTOR

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Abstract

Safety is one of the basic human needs, it is a state that gives people a sense of confidence through the guarantee of a lack of a sense of threat. This is one of the key elements that equally affects the employee and the employer. This condition consists of many factors that affect the performance of work by employees. Depending on the type of business activity, it is possible to point out the most accidental sectors of the economy. It is extremely important to comply with health and safety regulations by employees while managing their safety by the management. The aim of the article is to present the results of tests carried out among employees from Poland and Ukraine who perform work in the most accidental branch of the economy, which is the construction sector.

Keyword: management, safety, employees, construction sector.

Introduction

Over the last centuries, the concept of security has constantly evolved through the ongoing social and historical changes. Many researchers have attempted to define the term "security" but until now there is no unambiguous definition. We differentiate between two components of safety behavior. The first type of behavior is termed compliance, it is include obeying safety regulations, following the correct procedures, and using appropriate equipment. The second type of behavior is termed participation. [1] Nowadays, safety

is defined as: *a state of certainty, peace of absence of a threat to the sense of security, and indicate that it means no threat and protection against dangers.* [2] According to Charles Monning, security is: *freedom from the dangers of fear and attack.*[3] The Swiss political scientist Daniel Frei, on the other hand, defines security in two dimensions: objective and subjective because of the perception of the subject. The security explanation model can take the following form:

- The state of insecurity is when there is a large real threat and the perception of this threat is correct;
- An obsession state occurs when a slight threat is perceived as large;
- A false security condition occurs when the external threat is serious and is perceived as minor;
- The safety condition occurs when the external threat is insignificant, and his perception is correct. [4]

Security in the subjective sense is nothing more than the lack of concern of a given subject, as to the sense of one's own security, while in the objective sense it is the absence of entities that can really constitute a threat. Safety is a process which safety status is subject to dynamic changes, and therefore there is no permanently stabilized security.

Accident at work and social costs of accidents at work

Accidents in construction are still one of the significant problems faced by the construction industry. The International Labour Organization estimated that at least 60 000 fatal accident occur each year on construction sites around the world, representing one fatal accident every 10 minutes. Construction accounts for one in every six fatal accidents recorded. [5] On a national scale, there are a dozen or so events each day that lead to employee absences, permanent inability to work, and even death. In recent years in the construction industry, the Central Statistical Office noted a slight decline in this type of events, but it is still a problem with the management. The table below presents the published results of the Central Statistical Office regarding the accident rate in subsequent years, broken down by the effects they caused to the victims. They show that in the last three years the most accidents took place in 2016 - 5468, 2017 - 5390, 2018 - 5247. The greatest effects of accidents in fatalities came in 2017 - 58 people, 2016 - 52 people, 2018 year - 48 people.

The cost of accidents at work in Poland is directly proportional to the consequences of the accident, as well as to the company in which it takes place. Permanent inability of an employee as a result of an accident causes the largest costs - PLN 285,500. Slightly smaller death as a result of an accident at work - PLN 79,000. The remaining elements are part of the accident and the number of days of employee's absence is dependent.

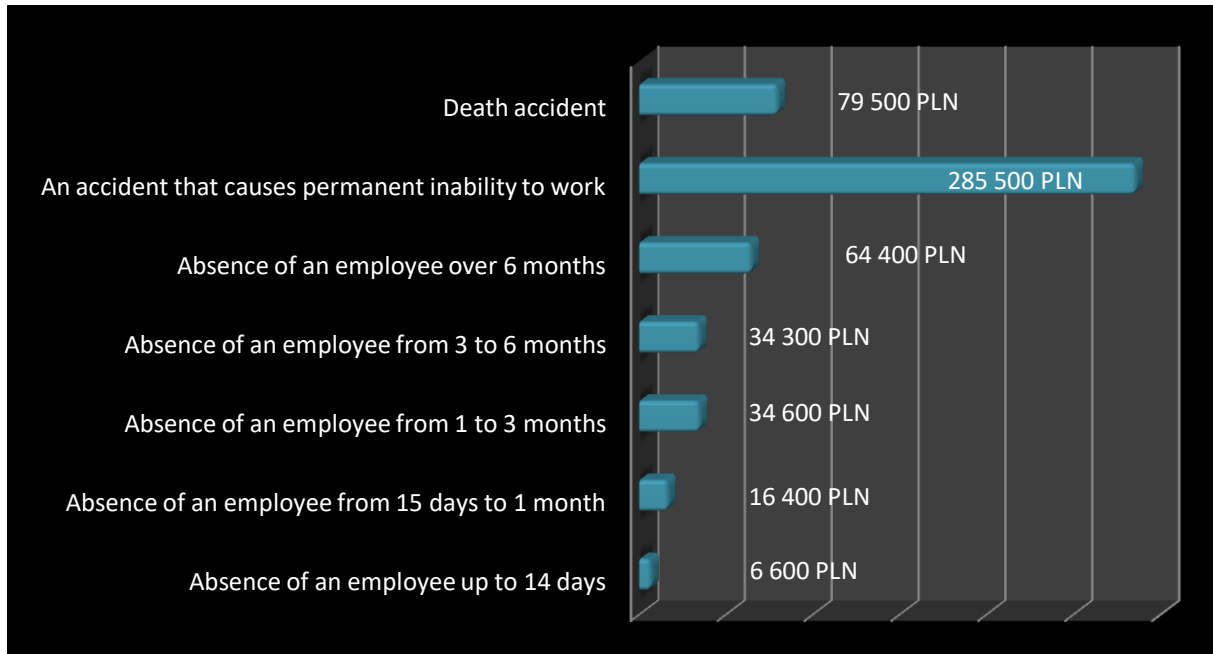


Chart 1. The average cost of one accident incurred by the company.

Source: own study based on: J. Rzepecki, report on the implementation of the task carried out under the Program entitled "Improvement of safety and work conditions" [6], [in:] Zakład Ubezpieczeń Społecznych. Social costs of accidents at work. Warsaw 2013, p. 55.

Area of research carried out together with their analysis

The aim of the study was to find an answer to the question regarding: work safety management of employees performing work in the construction sector. Employees from Poland and Ukraine - 60 people - became a separate research group. Respondents surveyed answered the questions voluntarily and anonymously and the extracted metrics concerned age and seniority. The criterion for selecting the target group of the conducted study has become the specifics of work in the construction sector.

Among the surveyed people, the largest age group was represented by employees aged 36-48, it was 30% of them. The second group were employees aged 26-35, 23%. The third age group were employees aged 56 and over - 20%. People between 18-25 and 46-55 accounted for 27% of respondents.

The second criterion which was subjected to the study was the period of employees of the construction sector. The largest group performing the work turned out to be employees with work experience from 2 to 5 years - 40%, another large group of employees with work experience of 16 and more years - 22%. The third person between 11-15 years of work experience - 16%.

Foreign employees working on Polish construction sites are the key topic of recent years. I am talking about employees from Ukraine who according to the National Bank of Poland account for 1.2 million people who work in Poland. According to research carried out by Havas Media Group, the largest number of them is employed in construction and accounts for 44.9% of people. In the study, a group of Polish employees was represented by 39 people, a group of employees from Ukraine - 21 people.

The first question asked to the respondents concerned the problem of language barrier. Do I have such a problem when working in the presence of employees from other countries? 52% of the surveyed people indicated that such a problem had to do during works carried out on the construction site.

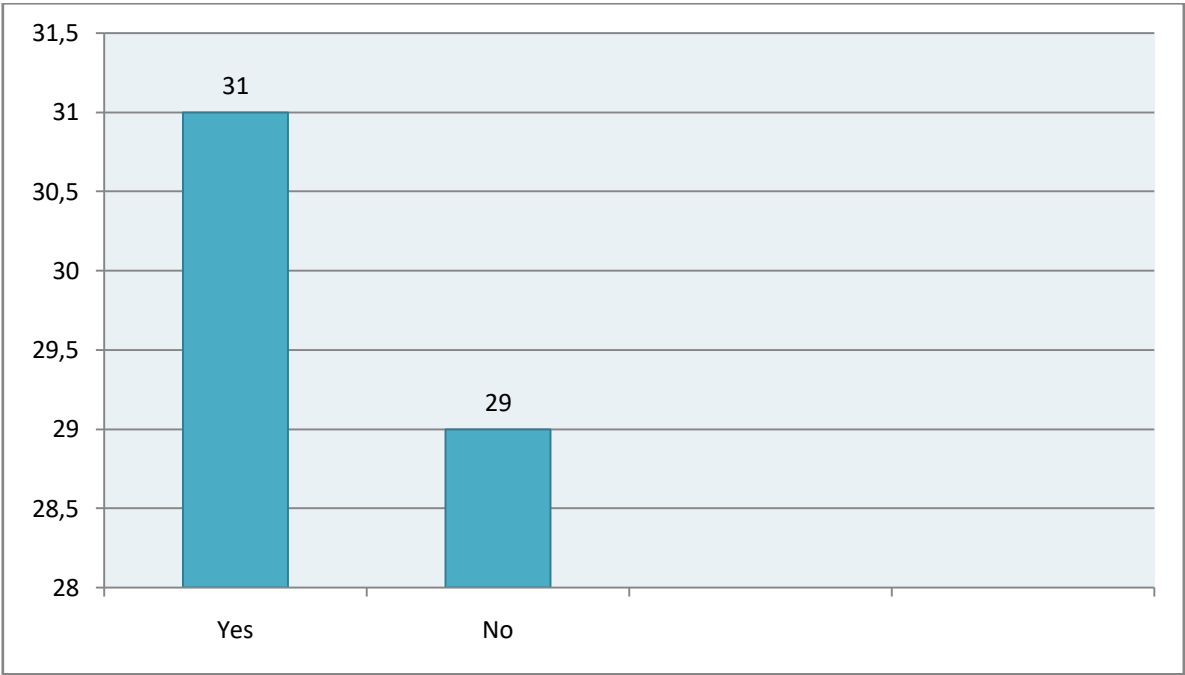


Chart 2. Do I have a language barrier when working in the presence of employees from other countries?
Source: own analysis based on the conducted research

The second question that was asked to the respondents defined the assessment of the employee's sense of security. Do you feel safe in the workplace? 67% of employees in the construction sector performing work indicated a positive answer - yes, 32% - rather yes,

only one person indicated a negative answer - no, indicating a lack of security on the construction site.

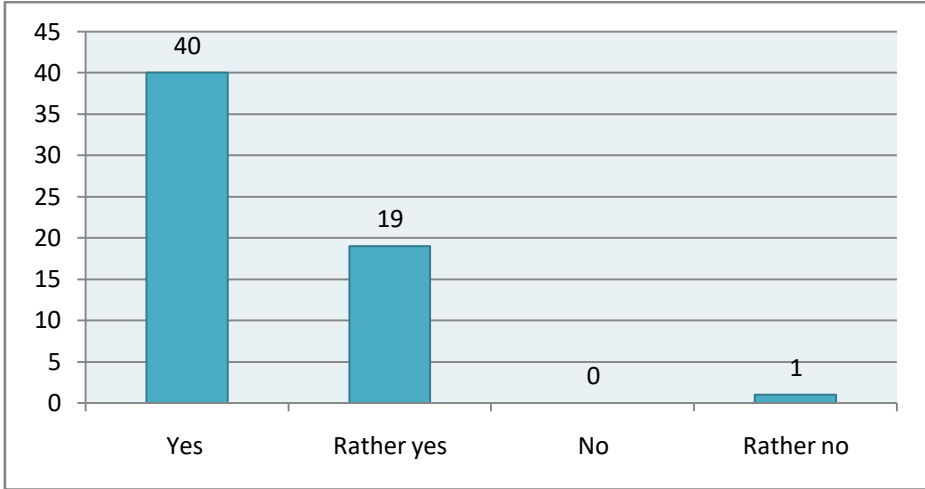


Chart 3. Do you feel safe in the workplace?
Source: own analysis based on the conducted research

The next question concerned the issue of violating health and safety regulations. Have you witnessed violations of health and safety regulations in your workplace? 30% of respondents indicated the answer - yes, 13.3% - rather yes, 46.7% - no, 10% - rather not.

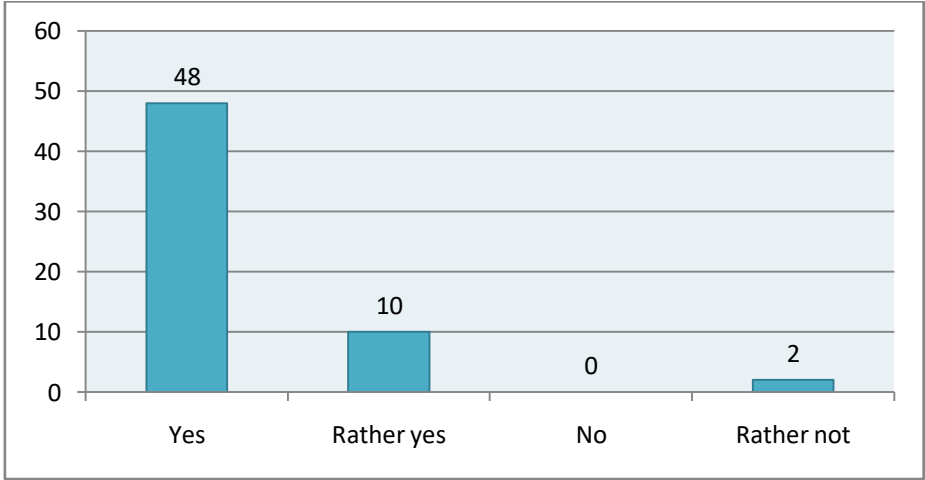


Chart 4. Have you witnessed violations of health and safety regulations in your workplace?
Source: own analysis based on the conducted research

The examined people who indicated a positive answer were to determine the reason for the violation of health and safety regulations by people who performed work on the construction site. 6.66% of respondents indicated shortcomings in the use of personal protective equipment, 16.66% - for lack of knowledge on the consequences of actions, 6.66% - routine, 28.33% - haste, caused by the imposed deadline for works .

The survey also examined the issue of employees' knowledge in the field of health and safety at the level of a four-level scale. 65% of employees defined their knowledge at a good level, 23% at a high level, 10% at an average level and 2% at insufficient.

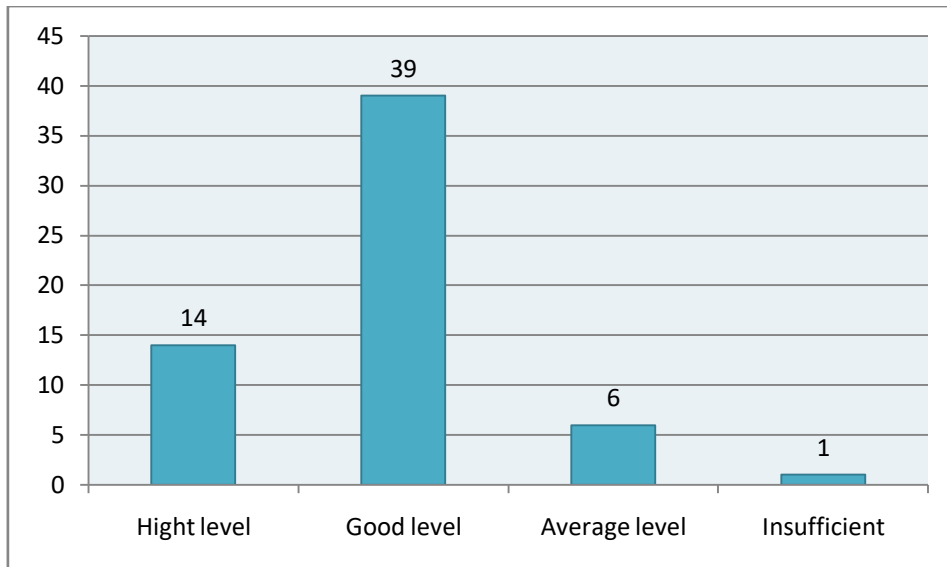


Chart 5. Please indicate at what level is your knowledge of health and safety?

Source: own analysis based on the conducted research

Another key question was the employees' identification of tasks / tasks in the performance of which they feel threatened. 42% of respondents indicated work at heights, 23% work using hazardous substances, 18% work with machinery and equipment for handling, 13% for work in confined spaces / excavations, and 4% work in the vicinity of electrical installations.

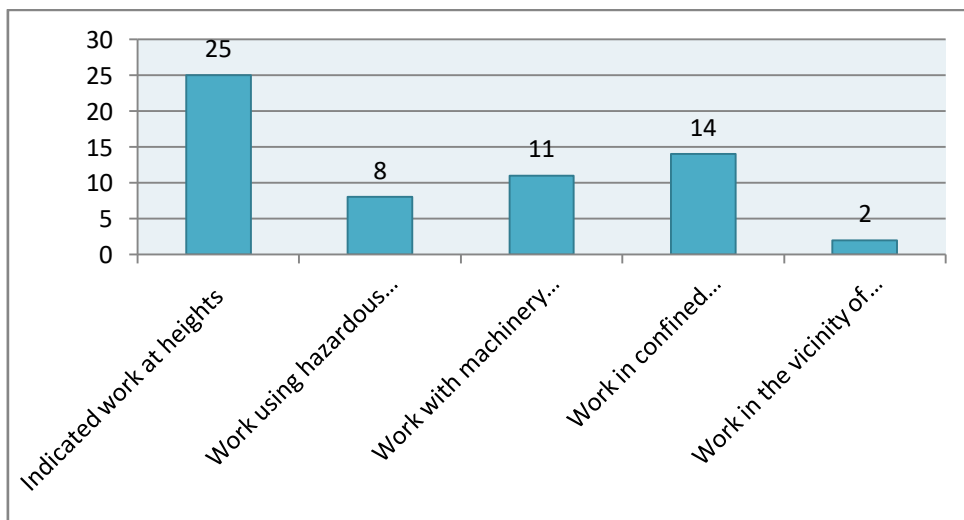


Chart 6. In what activities / tasks performed on the construction site do you feel a threat?

Source: own analysis based on the conducted research

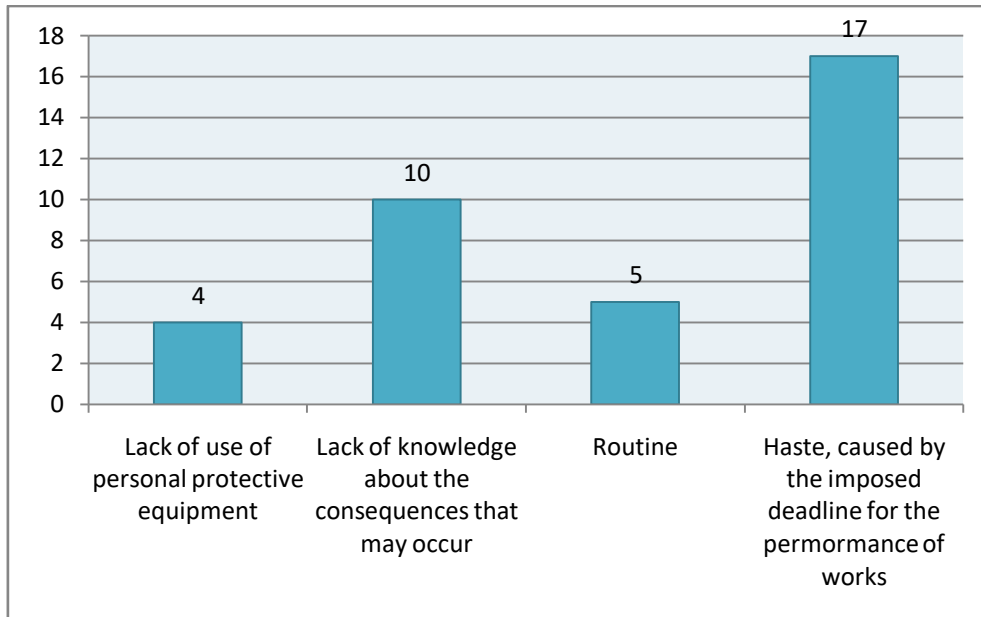


Chart 7. If YES - what was it caused by?
Source: own analysis based on the conducted research

The last question asked to the respondents concerned the improvement of the level of safety at the construction site. 1.67% - increased occupational health and safety, 11.66% - increased management supervision, 65% - more frequent awareness of employees through health and safety trainings, 20% - employment of more qualified workers and 1.67% - awareness for people with supervision of hazards that are on the construction site.

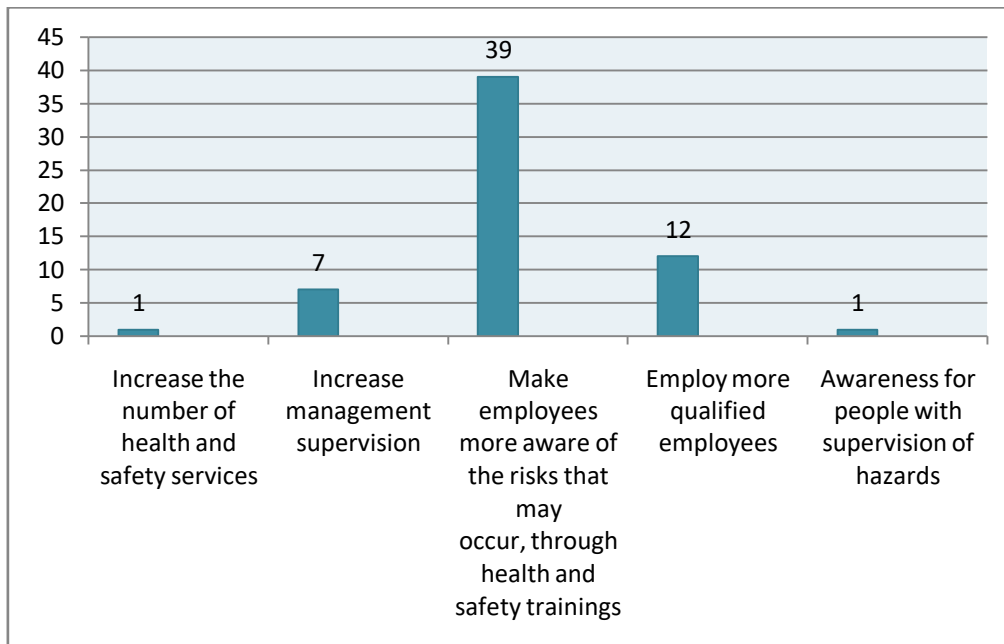


Chart 8. What do you think should be changed at the construction site to increase the level of security?
Source: own analysis based on the conducted research

Safety management

Security in the construction sector is a very important issue, including by the risk he is burdened with. It is a process at which stages you can define a number of factors that can become threats. Through their analysis, we can identify threats that are the point of action when managing the security system in the construction sector. Occupational Safety and Health issues are most important to the project process as it is influence the quality of work and time. OSH issues are not limited to the construction stage of a construction project management but also arise throughout a project's life. [7] The investment process can be divided into three stages: pre-investment, investment and operational phase. The first one is nothing but the risk accompanying preparatory actions in the field of documentation and decisions. The second stage is to provide legal conditions, documentation, organization of people and tools. The last stage is accompanied by the risk that is revealed during the operational phase, which is the risk of defects, errors or demolition. In addition, each phase is accompanied by a universal risk defined as economic, social, legal and environmental conditions, which are often not considered at the stage of the investment process and which more often affect the performance of investments on time.

Table 1. Scheme of risks of different type accompanying investment processes

INVESTMENT PROCESS		
Pre-investment phase	Investment phase	Operational phase
<ul style="list-style-type: none"> ➤ Assessment stage and investment opportunities ➤ Preliminary selection stage ➤ The stage of formulating the project ➤ Assessment and decision stage 	<ul style="list-style-type: none"> ➤ The stage of negotiating and concluding contracts ➤ The stage of technical documentation development ➤ The stage of construction works ➤ The stage of putting into use 	<ul style="list-style-type: none"> ➤ Equipment and trial start-up ➤ Operation of the facility ➤ Demolition of the object
The risk of preparing documentation.	Legal, documentation, ground conditions, construction organization, equipment, work brigades, etc.	The risk of revealing errors and faults.
The risk of wrong opinions, assessment of decisions, etc.		Operational risk, risk of demolition
Universal risk - economic, legal and social conditions		

Source: own study based on: Szafrenko E., *Safety management in construction activity and assessment of risk factors. Science notebooks SGSP 2016, Nr 60/4/2016.*[8]

For years, the construction sector has been trying to estimate the risk of construction investments by controlling and reducing them. The starting point for such activities is identification of phenomena that may cause an accident at work risk through constant risk control, minimizing adverse effects, introducing corrective actions and continuous striving for efficient management of employee safety.

Summary

For many years, issues in the field of occupational health and safety were left only to the entrepreneur, who had to ensure proper equipment of workstations. Employers and Employees with good safety behavior are particularly play a significant role in achievement of safety compliance to occupational, safety and health improvement in the construction industry. [9] Today, however, it was noticed how important are the social conditions of all activities undertaken in the enterprise - above all in relation to security. Employees are increasingly aware of the need to improve their safety through training, the use of personal protective equipment or building awareness based on responsibility. These issues are very important not only in terms of the health and life of the employee, but also because of the social costs of accidents at work which we bear for citizens through the burdens that flow to the Gross Domestic Product.

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