

## HEALTH AND SAFETY MANAGEMENT SYSTEM AS AN IMPORTANT PART OF INTEGRATED MANAGEMENT SYSTEM IN CONSTRUCTION IN COMPANY

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### **ABSTRACT**

*In our contribution we describe several experiences concerning the development, implementation and evaluation of health and safety management system according to requirements of OHSAS 18001, which is an important part of the Integrated management System in company. There is also described the methodology concerning the development and implementation of health and safety principles in a particular building as well as in a building process. In our contribution will be presented some ideas and opportunities for continuous improvement of health and safety management system in practice by its application in company. This system is useful tool for safety of company employees and external suppliers.*

**Keywords:** health and safety, management, methodology

### **1. NEED OF SUITABLE DOCUMENTATION**

Each construction is unique and therefore it is almost impossible to prepare the "ready to go" documentation, that would be suitable for each project. However it is convenient to create a documentation which would be helpful to employees as well as employers in terms of preparedness of workplace, site and workers themselves with an aim to achieve the least amount of injuries. Also at an early part of the project procurement process it is essential that the client provides designers and contractors with "pre construction information" which is project-specific in nature and needed to identify and appropriately plan for significant health and safety hazards and risks associated with project design and construction.

#### **1.1. Model of health and safety management system in terms of OHSAS 18 001**

Model shown in the figure below can generally be applied to all operations organization, but for purposes of our contribution we use the application only on construction services.

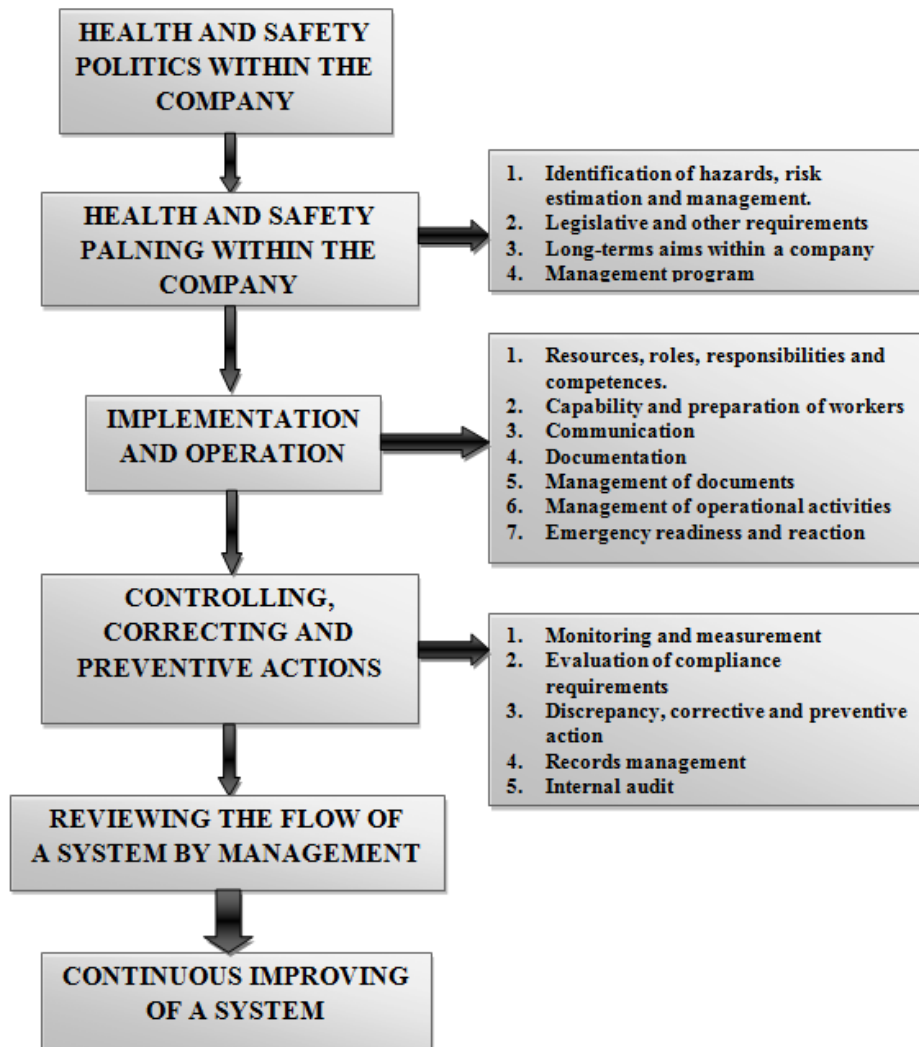


Figure 1. Model of health and safety management system in terms of OHSAS 18001 [4]

Defects or failures in constructed facilities can result in very large costs. Therefore **health and safety (H&S)** management as a part of integrated management system should represent increasingly important concerns for each company. Even with minor defects, re-construction may be required and facility operations impaired. In the worst case, failures may cause personal injuries or fatalities. Good project managers try to ensure that the job is done right the first time. Safety during the construction project is also influenced in large part by decisions made during the **planning** and **design process**. Beyond design decisions, safety largely depends upon education of workers, vigilance and cooperation during the construction process and it must be incorporated into education system of each organization. Workers should be constantly alert to the possibilities of accidents and avoid taken unnecessary risks.

H&S management system as a part of integrated management system consists of policy, management organization, management planning and implementation, evaluation and actions

made to improve the governance. Area of management policy includes elements of H&S policies and participation of workers and it is the foundation of H&S management system in organizations because it indicates the direction in which the organization has to move. The area of responsibility includes the management of the organization, competences, training and documentation. Planning area involves the initial risk assessment, preparation and execution of plans and prevention of H&S risks. With an initial assessment the organization determines how it is supposed to be done in terms of H&S, and the results of this assessment are then converting into the H&S policy. Finally a field of evaluation of performance monitoring and measurement, investigation of accidents, illness workers, occupational diseases, accidents and further audit and control system management. These procedures show how H&S management system works, and how it can be identified by its potential weaknesses. Scanning can be transferred at all stages and always have them convert people who are independent of the activity being audited. The final stage is carried preventive and remedial interventions in the areas identified in the assessment and inspection.

## 2. DESIGN OF KEY DOCUMENTS

Using harmonized documentation that would contain a summary of the key elements relating to H&S in order to improve and streamline the structure of the H&S management system in organization can be a helpful tool as well as it may cause the decrease of injuries that could possibly occur during a construction process. In the next figure we propose the most necessary documents.

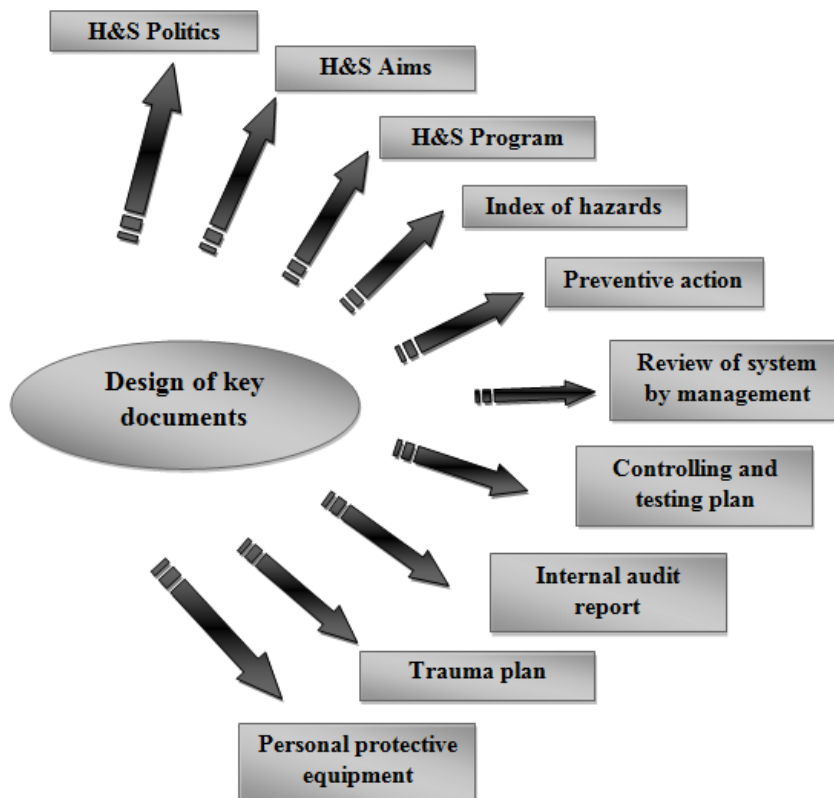
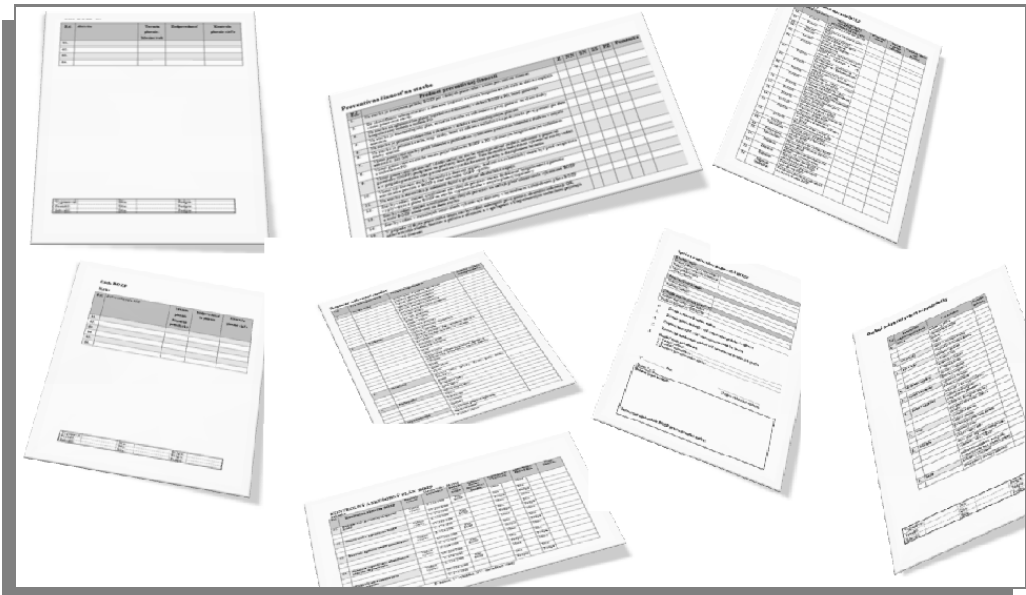


Figure 2. Elements of designing key documents for H&S

If there is a prepared documentation for each part of this diagram and if it is followed by all the employees we can clearly assume it will lead to reduction of occurring injuries. Likewise if this kind of documentation is similarly or analogically processed for the other two parts of integrated management system in companies- the quality and the environmental protection, it would be most likely helpful in means of upgrading the integrated system as a compact unit. Then it is highly possible we will find some similarities among all three of those units. However if the next step would be link them together we can create an integrated set of documentation suitable for companies with an integrated management system. This would cause reduction of number of required documentation.



*Figure 3. Set of documents (examples from Slovakia)*

## **2.1. Preventive actions**

In our contribution we have decided to mainly focus on H&S segment of the integrated management system in construction companies. One of the most important parts from the set of documents mentioned above is the one dealing with preventive actions because prevention is the main key to the successful and functioning H&S system. Inspection check list should therefore contain following actions which are published on each site as part of H&S politics. Here are presented the most important preventive activities that shall be eventually and continuously controlled:

- All construction workers are actively involved in identifying hazards (register) and determining the security risks.
- On the site are applicable only valid legislative documents on safety and fire protection, which guarantees safety techniques and fire protection.
- On the construction must be placed a Trauma Plan, which includes information on first aid for various types of injuries.
- On the construction there must be placed construction kit containing, in accordance with the Trauma Plan.

- On-site there must be a person/people who are professionally trained to provide first aid for various types of injuries.
- All construction workers have undergone a medical examination carried out by occupational medical service.
- All workers on site must pass health and safety training held by safety and fire protection technician.
- All workers (contractor and suppliers) must use protective personal, safety and working equipment (PPE) prescribed for a particular type of work. This task will be carried out daily by site manager and in breach of this obligation will be drawn financial penalty and disciplinary proceedings.
- All construction site visitors (inspection and supervisory authorities, students on excursions) must be before entering the site knowledgeable of H&S safety and have the basic personal protective equipment – vests and helmets.
- On the construction site it is forbidden to smoke and drink alcoholic beverages.
- Site manager, foremen and project construction processes must comply with security measures resulting from the construction safety and health plan prepared in accordance with current legislation.
- Site managers, foremen and contractors must meet health and safety performance indicators and targets which are set the construction due to valid legislative.
- Site managers have to make in monthly intervals records into the control and test plan.
- In case of an accident at work, site manager has to secure first aid immediately and inform the boss, medical services, firefighters and police about threats and in cooperation with security technicians take a corrective action.
- The construction site is properly and securely fenced, so it is not accessible to unauthorized people and to adequately protect the assets of the organization.
- Coordinator of H&S in terms of valid legislation must be named for each building.
- Alcohol testers are calibrated.
- According to fire protection instructions, at all locations must be are placed suitable fire extinguishers and construction manager in collaboration with fire protection technician have to examine the validity of their review.
- Consistently keep attendance records of all safety and fire prevention training activities.
- Shelves capacity in storages must be indicated and may not be exceeded.
- In case of fire an evacuation plan and person trained in fire protection must be present on site. In case of fire, firefighters, boss and health service are immediately informed.
- At construction site- in the office of construction manager and also must be posted on a conspicuous place significant numbers to ensure the safety and fire prevention (boss, police, health services, firemen, etc.).

### **3. RULES**

Integrated management system is an efficient tool of development strategy realization what leads to an improvement of processes as well as competitive positions. As a result of integrated management systems in functioning companies are: the best quality, they characterized minimum influence on the environment and they are manufactured in safety work conditions. It is a good direction for many organizations development. [3]

Therefore companies often develop a set of rules specific to their operations and sector. These rules normally reflect legislative requirements such as mandatory training and the use

of personal protective equipment and facilities. Nowadays however many companies go beyond the requirements of the law and develop additional rules. Hazard, accident and injury reporting procedures could also form part of the company rules. Other rules could address such items as the company non-conformance/disciplinary procedures. Companies should establish rules to govern the conduct and actions of their employees. These rules should leave no room for discretion and argument. The rules must be enforced and action should be taken every time a rule is violated. Since safety programs already contain the assignment of responsibilities and safe work practices/procedures, rules should be kept to a minimum. If we assume that one of those rules would also be following and accepting the designed documentation we can only expect positive reaction in terms of lowering the amount of occurring accidents.

Accidents can harm, kill and mutilate. Because they affect all sectors of each economy it is extremely important to pay significant attention to this domain. Problems are particularly acute in small and medium-sized enterprises. In addition to price in terms of loss of life and suffering of workers and their families, accidents affect business and society as a whole. Fewer accidents mean less sick leave, resulting in lower costs and fewer interruptions in the production process. It also saves the employer costs for receiving and training new employees and can reduce the cost of early retirement and insurance benefits. Slips, trips and falls are the leading cause of accidents in all sectors, from heavy manufacturing to office work. Other hazards include falling objects, fire and burns, fires and explosions, hazardous substances and stress. Therefore employers should prevent accidents in the workplace at first and for this purpose to establish a safety management system that includes procedures for assessing and monitoring risks.

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