

BASIC REQUIREMENTS FOR INSTALLATION FROM THE POINT OF VIEW OF OCCUPATIONAL SAFETY AND HEALTH

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Abstract

Establishment, by definition, is the process of creating a new unit (e.g. factory, plant, office, etc.), workplace, or renovating, extending, converting, installing or installing machinery, equipment, appliances, whether or not they are used for productive or non-productive purposes after their creation. An accurate assessment and evaluation of the risks to the safety and health of workers is essential before any investment is made in the workplace. This process is extremely complex and is a priority at all stages of investment activity. During the course of this study, it was considered important to identify the steps in the investment process and the OHS criteria that may be relevant to the process elements that may affect safety in subsequent use. Taking this into account, the process elements have been listed in chronological order and the necessary actions have been interpreted in the light of current legislation. We have also identified the responsible persons and positions that are involved or should be involved in the establishment process. All this has been brought together to produce a summary study that can provide practical assistance in organising an investment process.

Keywords: occupational safety, investment, installation, development, safety

1. Introduction

It is generally true that the design, construction, commissioning and subsequent operation of a workplace, installation or technology, as well as the production, manufacture, distribution, import, transport, movement, use and use of work equipment, materials, energy and personal protective equipment may only be carried out in compliance with the requirements laid down in the rules on occupational safety and health, or, in their absence, with the requirements that can be expected at the scientific and technical level. It is generally true that the design, construction, putting into service and subsequent operation of a workplace, installation or technology, and the production, manufacture, distribution, importation, transport, movement, use or application of work equipment, materials, energy

or personal protective equipment may be carried out only in compliance with the requirements laid down in the rules on occupational safety and health or, failing these, with the requirements which can be expected in the light of the scientific and technical state of the art. An employer, operator or service provider must adapt to market conditions. Accordingly, it must monitor the expectations of customers and business partners, -market changes (trends), strive to adapt to expectations, and therefore continuously improve its products and services, produce reliable quality, ensure that the personnel and material conditions are such that they meet market expectations, and that its employees are able to meet market expectations efficiently and safely, and the employer's recognised business reputation. In order to achieve the above, the objectives to be achieved must be defined, safety must be a priority, potential risks (in particular occupational health and safety risks) must be assessed, and measures must be taken to ensure effectiveness in the form of short, medium and long-term planning, improvements and investments (Bujnóczki, 2017).

2. Needs arise

An employer, operator or service provider must adapt to market conditions. Accordingly, it must monitor the expectations of customers and business partners, market changes (trends), strive to adapt to expectations, and therefore continuously improve its products and services, produce reliable quality, ensure that the personnel and material conditions are in place to ensure quality in line with market expectations, and that its employees are able to meet market expectations efficiently and safely, and the employer's good business reputation.

In order to achieve the above, the objectives to be achieved must be defined, safety must be a priority, potential risks (in particular occupational safety and health risks) must be assessed, and measures must be taken to ensure effectiveness, which involve short-, medium- and long-term planning, development and investment (Potter, 2017).

3. Planning

The aim of occupational safety and health planning is for the employer to consciously influence the working conditions, depending on the employer's business tasks and economic possibilities, i.e. to change factors that deviate from the standards in an unfavourable direction, to increasingly acceptable and compliant factors, to reduce or eliminate identified risks (any factor (effect) during or in connection with work that may cause danger or harm to the person performing the work or to a person within the scope of the work.).

All stages of the planning process are essential, but the creation of an information base is of paramount importance, as this is the basis for the decision to be made. The necessary and sufficient data can be gathered from internal sources within the employer, from external documents.

4. Development

Development is defined as any activity that results in an improvement in the organisation, quality and capacity of production, services and business work.

5. Investment

Investment is understood in a broad sense as the process by which an actor in the economy acquires goods that facilitate the production of other goods - in this respect, it includes the "production" of intellectual capital, i.e. educational activity; in a narrower sense, it includes, for example, the production or purchase of labour.

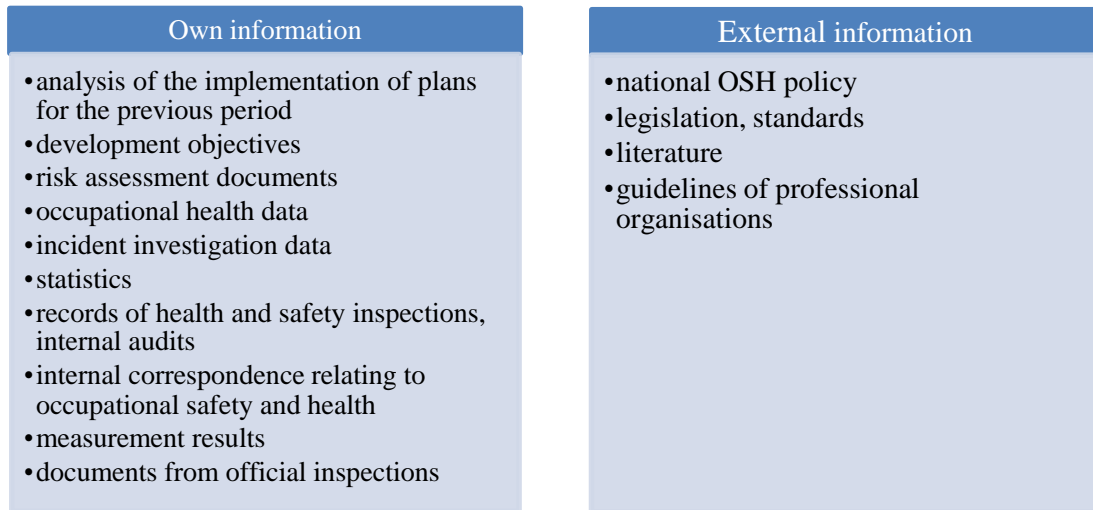


Figure 1. Information sources used for planning

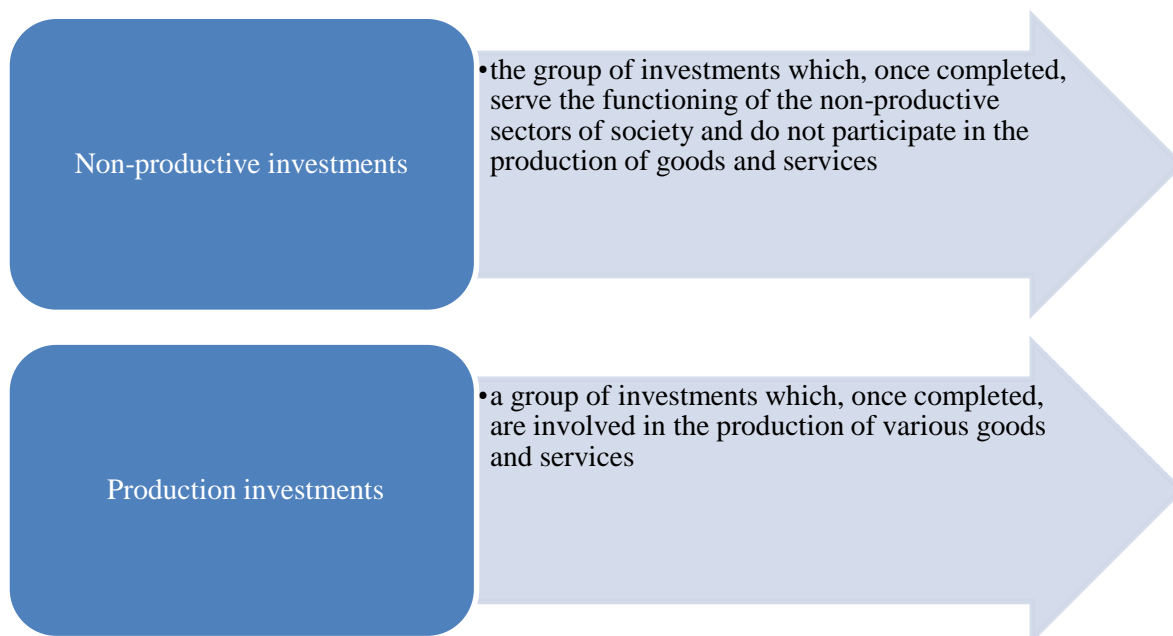


Figure 2. Differentiation of investments by productive capacity

6. Procurement

Procurement is a complex process that serves and supports production and service provision, is a driving force for development through market intelligence, mediates between production-service and suppliers-suppliers, and conveys information about user needs and the supply of suppliers and service providers.

From an occupational safety and health perspective, the long-term possibility of working safely and without endangering health is determined by the following aspects - to be kept in mind when purchasing - which are illustrated below.

fitness for purpose

- the product or service used must be as adequate as possible for the expected tasks

security

- be fully protected against all defensible threats

manageability

- it must be used in the safest and most comfortable conditions possible, taking ergonomic aspects into account

quality

- the manufacturer must guarantee quality and provide evidence of conformity

compliance with specifications

- compliance with the specifications must be the sole condition

maintainability

- a factor affecting safety in service

energy consumption

- energy saving, exclusion of accident risks

manufacturer

- recognised, capital-intensive

Figure 3. Considerations to bear in mind when investing

6.1. Design

Investment can go beyond procurement, i.e. purchase, to the realisation of ideas in plans, i.e. construction. This implies that the implementation process can be divided into two parts: planning, which is the documented formulation of ideas for competent people, and implementation, which is the tangible realisation of ideas (Zioa, 2018).

6.1.1. Planning

Planning can take two forms, depending on the possibilities. One option is to plan with your own planners, in which case it is typical that local knowledge is provided, the underlying data is available and day-to-day contact can be managed. The other option is to plan with a contractor (design agency), where adequate data must be provided, ongoing contact must be established and requirements must be enforced through the design process where necessary. The plans should cover the following topics in order to achieve safe and health-safe working conditions:

- Issues relating to the location and siting of the installation (structure, work equipment), its impact on the built environment and other installation-related matters;
- Description of the technological processes to be used, including basic and auxiliary technologies, from the reception of materials to the delivery of the finished product;
- Description of the internal layout of the group of facilities;
- Description and justification of the design of each facility;
- Safe material handling (loading, transport, storage);
- Determination of the appropriate number and protective capacity of personal protective equipment based on a risk assessment;
- Details of social care, design of health care;
- Possible deviations from specifications, standards, description of equivalent solutions;
- Official permits, consultations, expert opinions.

The designer must declare in writing that the plans meet the relevant requirements and comply with them in full (designer's declaration)!

6.1.2. Implementation

Depending on the possibilities, the planned implementation can be done in two ways: firstly, it can be carried out by the company itself, in which case the work can be easily adapted to the production activity, it can be well organised, it can be kept under control, it does not have to take into account the different work culture of other employers, it is cost-saving and not profit-oriented. The second solution is to contract out the work to external contractors, in which case the contractor's work area should be handed over to the contractor in a documented manner, thus transferring the employer's obligations in that area, but ensuring that the client can control the contractor's work area in order to protect its own assets (Levovnik, 2018; Álvarez, 2018; Lia, 2018).

After the work has been carried out, the contracting entity must provide a written declaration on the quality of the work carried out in the case of in-house work, and in the case of work carried out by external contractors, the contractor must declare in writing that the work has been carried out in accordance with the plans (contractor's declaration).

7. Technical take-over

The technical handover procedure is the final technical and financial stage of the construction process, mainly in the construction industry but also elsewhere, during which the contractor declares in writing that he has completed the works as specified in the construction contract, that he has fulfilled the technical requirements of the construction documents and that he is ready to start the commissioning procedure.

The purpose of the procedure is that, after the contractor's declaration of completion, the quantity and quality of the works carried out are checked by the client (recipient) at a predetermined time, during

a site visit, against the technical design documentation, the applicable legislation and the technical standards in force (Gautam, 2017).

We can also talk about so-called substitute transfers. This means that if defects are found during the handover, they must be corrected and then repeated in a new handover procedure.

The technical delivery procedure can be combined with the putting into use procedure, but the two are not the same.

In order to make informed and prudent decisions, the procedure usually involves:

- contractor (main contractor, subcontractors),
- technical manager in charge (technical manager of the construction),
- designers in charge (section designers, possibly including sub-designers),
- investor representatives (bank or external capital),
- representatives of public authorities (according to the relevant legislation),
- the customer's (recipient's) management, or the professional managers appointed by the customer,
- representatives of the client's departments (health and safety, fire protection, environmental protection),
- employee representation (health and safety representative),
- the professionals required by the internal rules of the customer.

8. Opening for use

After the completion of the construction, the client employer understandably wishes to incorporate the completed construction or work equipment into its activities as soon as possible, i.e. to put it into use. To do so, however, he must ensure that it satisfies the conditions for safe and healthy working (Kudryavtsev, 2018; Chemwenoa, 2018).

Work equipment may be put into service and used only if it meets the requirements for safe and health-safe work and if it has an EC (European Community) declaration of conformity (manufacturer's declaration) or other document certifying its conformity (e.g. EC type certificate) as specified for the work equipment as a product.

There are two ways of inauguration. The operating employer orders in writing the operation of the dangerous (any installation, work equipment, substance/mixture, work process, technology (including activities involving exposure to physical, biological or chemical agents), where the health, safety or health of workers may be adversely affected in the absence of adequate protection) installation, workplace, work equipment or technology by a person authorised in the internal regulations, based on a prior occupational safety and health review by a specialist (a person who has a qualification in occupational safety and health) - this is the commissioning of the installation, workplace, work equipment or technology.

In the case of work equipment which is not classified as dangerous, (where its safety may depend on the conditions of installation, after installation and before the start of operation), before putting into service, the person responsible for it shall satisfy himself that it is safely installed, that the conditions and circumstances of operation are safe and without risk to health and that it is safe to operate, in order to ensure that any damage is detected and remedied in good time - this is the control inspection.

The commissioning and its documents (plans, declarations, supporting documents, operational documentation, records, etc.) must be kept!

9. Summary

In summary, it can be concluded that the enforcement of OSH requirements during the installation is the responsibility of the installation contractors, who must cooperate in this task. Ergonomic aspects must also be taken into account when designing and installing workplaces and work equipment and, subsequently, when organising work. Establishment is the result of a number of sub-processes, the steps of which are illustrated in the following diagram.

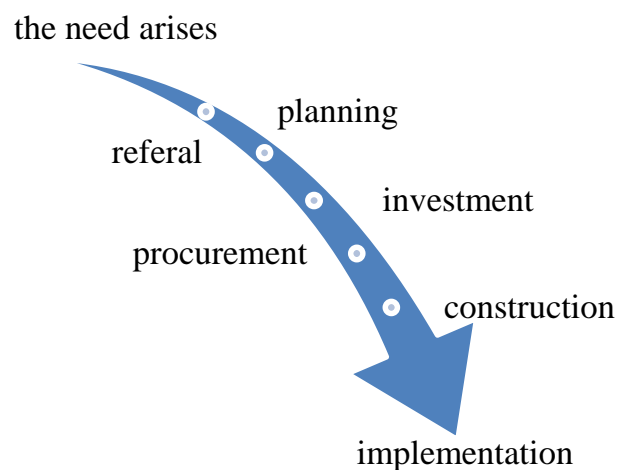


Figure 4. Steps in the deployment process

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