



Good practice

Safety measures taken in the Industrial Complex - External Emergency Plan of Industrial Zone of Mirandela (Portugal)

The industrial zone of Mirandela it is located a northeast of the city center and consists of 81 industries and is mostly related to civil construction, food processing and textiles. It has an area of approximately 336.000 square meters. The access is made per a regional road, a national road and even by the metro. To ensure the safety of the industrial zone an External Emergency Plan was developed, based upon a risk assessment.

Risk factors – general aspects

The basic law on civil protection (law n.º 27/2006, 3 of July) in the article 3.º defines the concepts of a serious accident and disaster. A serious accident is the unusual event with relatively limited effects in time and space, able to reach people and other living beings, goods and/or the environment. A catastrophe is a serious accident or series of serious accidents which are capable of causing considerable damage and possibly victims, strongly affecting the living conditions and the socio-economic conditions in an area or in the entire national territory. This law also defines the conditions for disaster as the state of emergency may be declared when compared to the occurrence of one or some of the events mentioned above is recognized the need to take exceptional measures to prevent, react or

return to normal conditions of life in areas hit by its effects.

Natural risks

The natural risks identified for the industrial zone are:

- Storms - occur mainly at the beginning of summer afternoons.
- Floods - has to take into account the possibility of flooding in the industrial zone because of the rupture of the dam of Vale Madeiro, which may affect human lives and cause substantial material damage.
- Earthquakes - according to the seismic intensity map of the atlas of the environment, the municipality of Mirandela is situated mostly in the area of maximum intensity (5).
- Frost - becomes particularly dangerous when it occurs in the main communication routes. The frost occur mainly in the months of December and January.
- Fog - are frequent from November to January during the early morning hours.

Technological risks

The technological risks identified for the industrial zone are:

- Serious traffic accidents – can be road accidents, bad weather conditions due to ice or



snow and fog originate some accidents. Deserve special attention accidents involving public transport and transport of hazardous materials; or air accidents, in the municipality of Mirandela exist an airfield for that must be taken into account the possibility of accidents with light aircraft or aircraft.

- Broken dams - although this risk has never occurred, may occur.
- Urban fires - is potentially high due to the normal operation of the industries that exist in the industrial zone.
- Transportation of hazardous materials - this risk can be seen on main roads crossing the industrial zone.
- Industrial accidents - may occur following fires, explosions and collapse of structures. Can also occur accidents with gas, radiological accidents and biological and chemical accidents.

External Emergency Plan

The main objective of the External Emergency Plan of the Industrial Zone of Mirandela it is to assist the intervention of the fire brigade in case of fire risk. So, a careful analysis was performed of all risks with high probability of occurrence and serious consequences in the industrial zone. For assessing and quantifying the risk of fire in the companies of the industrial zone was performed through a survey of existing businesses, security conditions, the potential dangers (of hazards) and the existing protection measures.

Policy goals

The general objectives of the planning process for the industrial zone were:

- Raising awareness of all involved to mitigate the effects of a disaster.
- Decrease probability of an accident;
- Decrease the potential risk by reducing the quantities of hazardous substances involved;
- Reduce the human and material losses;
- Appropriate training for workers.

- Establish criteria and procedures for action in case of any emergency in the Industrial Zone of Mirandela.
- Maximize the ability to respond in emergency situations and improve the speed and efficiency of the emergency actions;
- Recovery of working conditions as soon as possible;

Planning process

The planning process included steps like:

- Compilation of important data of what kind of industry that exist in the Industrial Zone of Mirandela;
- Procedures and evacuation routes for an emergency situation;
- Functional structure of communication in emergency situations;
- Conditions of rescue and care for those who need it;
- Routine safety behaviors in case of emergency;
- Involving local authorities.

Lessons learnt

The municipality of Mirandela has learned some valuable lessons:

- Identify and locate vulnerabilities and risks
- Mitigate and reduce risk factors;
 - Establish mitigation measures;
- Define and organize the response actions in case of accident or catastrophe;
- It is very important that all entities are involved in the process.
- Use data with quality;
- Use cartography with quality;
- Appropriate surveillance and risk control;
- Give to the workers skills to identify an emergency situation and know how to act, without panicking.



The MiSRaR project

The MiSRaR project is about Mitigation of Spatial Relevant Risks in European Regions and Towns.

The project is a cooperation between seven partners in six EU member states:

- *the Safety Region South-Holland South, The Netherlands (lead partner)*
- *the city of Tallinn, Estonia*
- *the region of Epirus, Greece*
- *the province of Forlì-Cesena, Italy*
- *the municipality of Aveiro, Portugal*
- *the municipality of Mirandela, Portugal*
- *the Euro Perspectives Foundation (EPF), Bulgaria.*

The goal of the project is to exchange knowledge and experiences on risk mitigation in spatial policies. The project will result in a handbook in which the lessons on the mitigation process are described and the good practices from the partners are presented. The Risk Assessment and Mapping Guidelines for Disaster Management of the European Commission will be implemented in the handbook.

The MiSRaR project is cofinanced by the European Regional Development Fund and made possible by the INTERREG IVC programme.

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