



# Implementation of ATEX 137 Directive in Portugal, Spain and UK



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# European Framework Directive

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Council Directive 89/391/EC, of 12 June 1989,  
on the introduction of measures to encourage  
improvements in the safety and health of workers at  
work.



# ATEX 137 Directive

Directive 1999/92/EC

(16 December 1999)

- individual Directive within the meaning of article 16 of the Framework Directive;
- establishes the minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres.



## Definition of 'explosive' atmosphere

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A mixture with air, under atmospheric conditions, of flammable substances in the form of gases, vapours, mists or dusts in which, after ignition has occurred, combustion spreads to the entire unburned mixture.



# Obligations of the employer

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## Prevention and protection against explosions

The employer shall take technical and/or organisational measures appropriate to the nature of the operation, in order of priority and in accordance with the following basic principles:



# Obligations of the employer

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## Prevention and protection against explosions

- the prevention of the formation of explosive atmospheres, or where the nature of the activity does not allow that,
- the avoidance of the ignition of explosive atmospheres, and
- the mitigation of the detrimental effects of an explosion so as to ensure the health and safety of workers.



# Obligations of the employer

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## Assessment of explosion risks

The employer shall assess the specific risks arising from explosive atmospheres, taking account at least of:

- the likelihood that explosive atmospheres will occur and their persistence,
- the likelihood that ignition sources, including electrostatic discharges, will be present and become active and effective,



# Obligations of the employer

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## Assessment of explosion risks

- the installations, substances used, processes, and their possible interactions,
- the scale of the anticipated effects.



# Obligations of the employer

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## Explosion protection document

The explosion protection document shall demonstrate:

- that the explosion risks have been determined and assessed,
- that adequate measures will be taken to attain the aims of the Directive,
- that the workplace and work equipment are designed, operated and maintained with due regard for safety,
- that arrangements have been made for the safe use of work equipment.



# Obligations of the employer

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## Explosion protection document

The explosion protection document shall be drawn up prior to the commencement of work and revised when the workplace, work equipment or organisation of the work undergoes significant changes, extensions or conversions.



# Classification of hazardous places or areas

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## Gases, vapours or mists

A place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist:

- is present continuously or for long periods or frequently – **Zone 0**
- is likely to occur in normal operation occasionally – **Zone 1**
- is not likely to occur in normal operation but, if it does occur, will persist for a short period only – **Zone 2**



# Classification of hazardous places or areas

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## Combustible dusts

A place in which an explosive atmosphere in the form of a cloud of combustible dust in air:

- is present continuously, or for long periods or frequently – **Zone 20**
- is likely to occur in normal operation occasionally – **Zone 21**
- is not likely to occur in normal operation but, if it does occur, will persist for a short period only – **Zone 22**



# National legislation analysis

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## Spain

Real Decreto 681/2003, of 12 June 2003

- it transposes to the national legislation the ATEX 137 Directive;
- it is an exact replica, in terms of contents, of the Directive.



# National legislation analysis

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## Portugal

Decreto-Lei 239/2003, of 30 September 2003

- it transposes to the national legislation the ATEX 137 Directive;
- it introduces a lot of adaptations comparing with the original ATEX 137 Directive, mainly in the structure of the text.



# National legislation analysis

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## Portugal – New features

- obligation of an annual review by the employer of the technical and organisational measures;
- different time schedule for the implementation (30th September 2006, for existing workplaces, and 30th September 2003, for new or modified workplaces).



# National legislation analysis

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## UK

### Dangerous Substances and Explosive Atmospheres Regulations (DSEAR), 2002

- it transposes to the national legislation the ATEX 137 Directive;
- it also implements the safety requirements of the chemical agents Directive (98/24/EC), commonly referred as CAD.



# National legislation analysis

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## UK – New features

DSEAR places more prescriptive requirements on employers, namely:

- it applies where a dangerous substance is, or is liable to be, present at the workplace;
- certain workplaces are totally or partially exempt from the regulations;



# National legislation analysis

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## UK - New features

- there are slightly different definitions for hazardous areas zones;
- assessments are required to be reviewed regularly.



# National legislation analysis

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## UK

Despite the more prescriptive requirements of DSEAR the main duties of the employer are essentially the same as those defined by ATEX 137.



## Case studies

For the purpose of this work 8 different case studies were analyzed, dispersed geographically, according to the following table:

Country	Number of case studies
Portugal	2
Spain	3
UK	3



## Case studies

All the analyzed companies belonged to the chemical industry and they all handled and/or stored flammable liquids and combustible dusts.

The number of workers in each site varied from 50 to 200 (small/medium size companies).



## Case studies

The approach used for the implementation of ATEX 137 was the same in all case studies, namely:

- conduct initial status review;
- allocate responsibilities;
- conduct technical assessments;
- prepare documentation.



## Case studies

### Initial status review

Conduct a status review of the current extent of compliance versus the requirement of the legislation, so that the deficiencies can be identified.



## Case studies

### Allocation of responsibilities

- prepare an action plan to remedy the deficiencies;
- allocate resources;
- implement the plan.



## Case studies

### Technical study / Risk assessment

- identification of the properties of dangerous substances;
- identification of areas in which dangerous substances may be present;
- identification of potential ignition sources;
- specification and implementation of measures to avoid explosion hazards.



## Case studies

### Documentation

The documentation must demonstrate that:

- dangerous substances have been identified;
- area classification has been completed;
- explosion risks have been assessed and adequate control measures have been put in place;
- verification of explosion safety has been carried out;



## Case studies

### Documentation

- workplace and equipment have been designed, operated and maintained to ensure safety;
- procedures are in place for the safe use of equipment;
- systems of workplace co-ordination are in place;
- the aims of the legislation have been met;
- documentation has been kept up-to-date.



## Case studies

### Conclusions

There is a need for a more formal definition of procedures/responsibilities, assessment of risk, specification of safety measures and documentation.



## Case studies

### Conclusions

It is possible to implement this Directive in the mentioned three countries (Portugal, Spain and UK) using the same methodology and the same model for the documentation.



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Thank You

Thank you very much for your  
attention.