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Republic of Latvia

Cabinet

Regulation No.300

Adopted 10 June 2003

Labour Protection Requirements at Work in Explosive Atmospheres

Issued pursuant to Section 25, Clause 18 of the Labour Protection Law

I. General Provisions

1. These Regulations prescribe the labour protection requirements for work in explosive atmospheres.
2. The work environment shall be regarded as explosive if a mixture with air of flammable, highly flammable or extremely flammable substances and products in the form of gas, vapour, mist or dust (hereinafter – flammable substances) exists or may occur in which under normal atmospheric conditions after ignition the fire spreads throughout the mixture volume.
3. Flammable substance dust layers, deposits and heaps shall be regarded as a source of an explosive atmosphere. Flammable substances, in the research of physical and chemical properties of which has been determined that they cannot cause an explosion in a mixture with air, shall not be regarded as a source of an explosive atmosphere.
4. The requirements specified in these Regulations shall not apply to:
 - 4.1. work in premises for medical treatment of patients;
 - 4.2. work with devices utilised for burning gaseous fuels;
 - 4.3. manufacture, sale, utilisation, storage and transportation of pyrotechnic articles, explosives or chemically unstable substances;
 - 4.4. survey, extraction of mineral resources and preparation for sale; and
 - 4.5. work with vehicles specified in international agreements as the international transport of dangerous freights by road, railway, water, as well as by civil aviation, except for vehicles intended for use in explosive atmospheres.
5. Compliance with these Regulations shall be controlled by the State Labour Inspection.

II. Classification of Explosive Workplaces

6. A workplace shall be regarded as explosive if explosive atmosphere is present or may occur therein causing a risk to the safety and health of employees, and special provisions and measures are necessary for protection against such risk.

7. Explosive workplaces shall be classified in zones on the basis of the frequency of occurrence and duration of the existence of the explosive atmosphere:

7.1. Zone 0 – 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, for a long period or frequently;

7.2. Zone 1 – a place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist may sometimes occur under normal working conditions when performing activities specified in the technological (work) process;

7.3. Zone 2 – a place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of gas, vapour or mist may not occur under normal working conditions when performing activities specified in the technological (work) process, but if it occurs, is present for a short period of time only;

7.4. Zone 20 – a place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of a cloud of dust is present continuously, for a long period or frequently;

7.5. Zone 21 – a place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of a cloud of dust may sometimes occur under normal working conditions when performing activities specified in the technological (work) process; and

7.6. Zone 22 – a place in which an explosive atmosphere consisting of a mixture with air of flammable substances in the form of a cloud of dust may not occur under normal working conditions when performing activities specified in the technological (work) process, but if it occurs, is present for a short period of time only;

III. Assessment of Risk Caused by Explosive Atmospheres

8. The employer shall ensure that an inspection is performed in newly established or reconstructed workplaces in order to determine whether it is an explosive workplace. If it has been determined that it is an explosive workplace, the employer shall ensure assessment of the risk caused by the explosive atmosphere.

9. The employer shall provide an assessment of the risk caused by explosive atmospheres in conformity with internal supervision of the work environment and risk assessment procedures of the work environment of an undertaking.

10. In assessing the risk caused by explosive atmospheres the following shall be taken into account:

10.1. the possibility of an occurrence of explosive atmospheres and their persistence;

10.2. the possibility of the presence of ignition sources, frequency and power of exposure thereof, as well as the impulse of energy produced, including electrostatic discharges;

- 10.3. work equipment, substances, processes utilised and interaction thereof; and
- 10.4. amount of anticipated effects.

11. In assessing the risk caused by explosive atmospheres the possibility of the spread of explosive atmospheres through openings and insufficiently tight connections in work equipment, premises, workplaces, as well as the potential spread thereof under normal working conditions and emergency situations shall be determined.

12. The risk caused by explosive atmospheres shall be assessed not less frequently than once a year, as well as when a new workplace has been created or changes have been made in any of the existing workplaces (for example, there are changes in work processes, methods, work equipment, utilisation of substances and products and production thereof) that might increase the risk caused by an explosive atmosphere and affect the safety and health of employees at work.

13. The employer shall document the results of assessment of the risk caused by an explosive atmosphere and keep the relevant documents for at least two years.

IV. Prevention and Reduction of Risk Caused by Explosive Atmospheres, Obligations of Employer

14. Requirements specified in this Chapter shall apply to:

- 14.1. explosive workplaces; and
- 14.2. work equipment placed outside explosive workplaces that ensures or helps to ensure safe operation of work equipment placed in explosive workplaces.

15. If after the inspection of workplaces and risk assessment it has been determined that a workplace explosive, the employer shall take the necessary measures for prevention or reduction of the risk caused by explosive atmospheres providing such working conditions that do not cause a risk to the safety and health of employees and other persons.

16. In prevention and reduction of the risk caused by an explosive atmosphere the characteristics of workplaces, work equipment or flammable substances utilised, as well as the risk caused by an explosive atmosphere shall be taken into account.

17. For protection against explosion and prevention thereof, the employer, taking into account the type of activity, shall take technical and organisational measures in order to:

- 17.1. prevent the occurrence of an explosive atmosphere;
- 17.2. prevent ignition of an explosive atmosphere; and
- 17.3. reduce the consequences caused by an explosion ensuring the safety and health protection of employees.

18. Depending on the type of activity and specific nature of work, the measures referred to in Paragraph 17 of these Regulations for protection against an explosion and prevention thereof shall be combined or substituted by measures against the spread of an explosion. The measures shall be reviewed regularly in conformity with the risk assessment performed, as well as when

the work organisation, technology or work equipment is changed, or a workplace is enlarged or relocated.

19. On the basis of the results of the risk assessment and the information obtained during inspection of workplaces, an employer shall:

19.1. divide explosive workplaces into categories in accordance with the classification specified in Paragraph 7 of these Regulations;

19.2. determine labour protection measures for prevention or reduction of the risk caused by an explosive atmosphere; and

19.3. provide work supervision in explosive workplaces, assigning a specially trained employee and allocating him or her appropriate technical means for the performance of such task.

20. The employer shall ensure that explosive workplaces have a document developed regarding protection against the risk caused by an explosive atmosphere. The document shall include:

20.1. assessment of risk caused by an explosive atmosphere;

20.2. information regarding explosive workplaces and division thereof into zones in accordance with Paragraph 7 of these Regulations;

20.3. information regarding labour protection measures taken and planned for prevention and reduction of the risk caused by an explosive atmosphere; and

20.4. evidence that workplaces and work equipment therein (including warning (alarm) systems and protective systems for work equipment) are installed, used and maintained in accordance with these Regulations and regulatory enactments on labour protection requirements when using work equipment.

21. The document referred to in Paragraph 20 of these Regulations shall be included in the common documentation of an undertaking regarding inspections of workplaces and assessment of the work environment risk, and updated (reviewed) if work organisation, technology or work equipment has been changed, or a workplace has been enlarged or modified.

22. It is permitted to perform work in an undertaking and in a particular explosive workplace only if in the risk assessment and the document referred to in Paragraph 20 of these Regulations it is confirmed that the work is safe.

23. The employer shall ensure:

23.1. in explosive workplaces, provision of information to employees on the risk caused by an explosive atmosphere and the effect of such risk on the safety and health of employees;

23.2. training of employees in explosive workplaces regarding performance of safe work in explosive atmospheres and measures for the prevention and reduction of risk caused by an explosive atmosphere; and

23.3. special additional training to an employee who is responsible for work supervision in conformity with Sub-paragraph 19.3 of these Regulations.

24. For workplaces where explosive atmospheres may occur an employer shall develop:

24.1. written instructions for safe performance of work in explosive atmospheres;

- 24.2. a plan of measures for emergency situations; and
- 24.3. work assignment of employees – a system of permits applied when performing dangerous activities and activities that may cause a risk if performed together with other activities or using other work equipment.

25. The work assignment referred to in Sub-paragraph 24.3 of these Regulations in accordance with procedures approved by the employer shall be issued in the relevant workplace by an employee responsible for work supervision or another specially trained employee assigned by the employer.

26. Explosive workplaces shall be marked with a warning sign in conformity with regulatory enactments on labour protection requirements for use of safety signs.

27. Any intentional or unintentional leakage of flammable substances, which may cause an explosive atmosphere, shall be prevented or the source of the leakage shall be moved to a safe place or, if it is not possible, spread of the explosive mixture shall be stopped by other methods.

28. If several flammable substances cause an explosive atmosphere, labour protection measures shall be taken considering the greatest potential risk.

29. In order to eliminate the possibility of ignition including the accumulation of an electrostatic charge, if the work environment or employees are charge carriers or producers, employees shall be provided with working clothes which are made of such materials that do not cause electrostatic charges which can ignite explosive atmospheres. Technical and organisational measures shall be taken in work environment in order to prevent the accumulation of such electrostatic charges as can cause the ignition of explosive atmospheres.

30. Work equipment, protective systems and devices related thereto may be used only if they conform to the criteria specified in Chapter V of these Regulations and if in accordance with risk assessment and the document referred to in Paragraph 20 of these Regulations they may be used safely in an explosive atmosphere.

31. Workplaces, work equipment, protective systems and devices related thereto shall be located, installed, maintained, used and monitored so as to reduce the risk caused by explosive atmospheres and, in case an explosion occurs, to contain it within the work equipment, to control and limit spread thereof in the work environment and reduce the consequences of the explosion.

32. If an explosion hazard occurs, employees shall be warned with sound and light signals. In such cases employees shall act in accordance with a previously developed plan of measures for emergency situations.

33. Emergency routes and exits shall be arranged and maintained so that in case of an explosion hazard employees can leave the places of hazard immediately and safely.

34. If improper power supply may cause additional risk, the possibility to maintain work equipment and protective systems in a safe state of operation shall be ensured irrespective of the operation of other work equipment.

35. Without endangering the safety of employees the possibility shall be provided for specially trained employees to shut down manually (by hand) the protective systems or work equipment incorporated within automatic processes which deviate from the intended operating conditions.

36. In case of emergency shutdown, the accumulated energy shall be dissipated so as not to cause a risk to the safety and health of employees.

37. If employees of several employers work simultaneously in one workplace, the employers shall co-operate in accordance with the procedures prescribed by the Labour Protection Law harmonising and co-ordinating the labour protection measures to be taken, as well as the purpose of such harmonisation, measures and procedures for implementation thereof shall be specified in the document referred to in Paragraph 20 of these Regulations.

V. Criteria for Selection of Work Equipment and Protective Systems

38. Work equipment and protective systems for work in explosive atmospheres shall be selected in accordance with characteristics of the explosive atmosphere (physical and chemical properties of flammable substances and mixtures thereof) and risk assessment.

39. The manufacturer or supplier shall specify the criteria and explanations (categories, sub-groups and classes referred to in Paragraphs 40, 41 and 42 of these Regulations) necessary for the selection of work equipment and protective systems in the documentation (instructions) and ensure the accessibility of such documentation when purchasing work equipment and protective systems. If the information necessary for selection of work equipment and protective systems is not sufficient, the manufacturer or supplier shall provide additional information. The information must be in the official language.

40. The following work equipment and protective systems shall be selected in conformity with explosive atmospheres caused by gas, vapour, mist or dust:

40.1. for explosive atmospheres caused by gas, vapour or mist (in the label marked with G):

40.1.1. in zone 0 – category 1G work equipment and protective systems;

40.1.2. in zone 1 – category 1G or 2G work equipment and protective systems;

and

40.1.3. in zone 2 – category 1G, 2G or 3G work equipment and protective systems; and

40.2. for explosive atmospheres caused by dust (in the label marked with D):

40.2.1. in zone 20 – category 1D work equipment and protective systems;

40.2.2. in zone 21 – category 1D or 2D work equipment and protective systems;

and

40.2.3. in zone 22 – category 1D, 2D or 3D work equipment and protective systems;

41. In conformity with the characteristics of the explosive atmosphere (physical and chemical properties of flammable substances and mixtures thereof) the following work equipment and protective systems shall be selected:

41.1. sub-group II A if according to the characteristics of the explosive atmosphere it is equivalent to the explosive atmosphere caused by methane, propane, petrol and acetaldehyde;

41.2. sub-group II B if according to the characteristics of the explosive atmosphere it is equivalent to the explosive atmosphere caused by ethylene and diethyl ether; and

41.3. sub-group II C if according to the characteristics of the explosive atmosphere it is equivalent to the explosive atmosphere caused by hydrogen, acetylene and carbon disulphide;

42. In conformity with the spontaneous combustion temperature of the explosive atmosphere (spontaneous combustion temperature in the air of flammable substances and mixtures thereof) the following work equipment and protective systems shall be selected:

42.1. temperature class T1 if the spontaneous combustion temperature is more than 450 °C;

42.2. temperature class T2 if the spontaneous combustion temperature is from 300 °C to 450 °C;

42.3. temperature class T3 if the spontaneous combustion temperature is from 200 °C to 300 °C;

42.4. temperature class T4 if the spontaneous combustion temperature is from 135 °C to 200 °C;

42.5. temperature class T5 if the spontaneous combustion temperature is from 100 °C to 135 °C; and

42.6. temperature class T6 if the spontaneous combustion temperature is from 85 °C to 100 °C;

43. If several flammable substances cause an explosive atmosphere, when specifying the necessary sub-group and temperature class for work equipment, the physical and chemical properties of the most dangerous substance, as well as physical and chemical properties caused by potential interactions of the substances shall be taken into account.

VI. Closing Provisions

44. These Regulations shall come into force on 1 July 2003.

45. Explosive workplaces established by 1 July 2003 shall be modified in conformity with requirements of these Regulations by 30 June 2006.

Informative Reference to European Union Directive

These Regulations contain legal norms arising from Directive 1999/92/EC.

Prime Minister

E. Repše

Acting for the Minister for Welfare,
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K. Šadurskis