

Rev. 2006/06/07

***Specific guide on the implementation of Directive 1999/92/EC
(ATEX2) and relevant Guide of Good Practice COM (2003)515
final for the commissioning and/or servicing at fuel gas
equipment installations***

Foreword

The Directive 1999/92/EC deals with minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres. The European Commission, according to the provisions in article 11 of this Directive, has drawn up a non-binding Guide of Good Practice COM(2003) 515 final (<http://europa.eu.int/eur.lex/en/com/cnc/2003/act0515en02/1.pdf>) for implementation of the Directive itself. The content of this Guide of Good Practice deals with all sectors of activity to which the Directive shall be applied.

This document instead should be considered as a supporting working tool only for the parties operating in the fuel gas sector and specifically for those parties that have to carry out some activities inside the areas of gas pressure regulating stations/gas measuring stations/gas odorization units and gas installations in the fuel gas transmission and distribution systems.

The workplace specified in this document shall not be intended as that specified in the concerned Directives and/or relevant national regulations, but only that specified by this document.

*Therefore this document, unless more stringent provisions from relevant national regulations are in force, indicates a “**minimum practical implementation**” of the Directive 1999/92/EC and relevant Guide of Good Practice COM(2003) 515 final only for workplaces specified in this document.*

This document specifies the obligations of all parties concerned when carrying out installations and/or surveillance activities of gas equipment inside workplaces as per this document.

Further, this document may be used as a supporting tool for preparing the “explosion protection document” specified in article 8 of the Directive 1999/92/EC and “permit-to-work form” specified in clause 4.5 of Guide of Good Practice COM(2003) 515 final.

*In other words this document details **only the aspects relevant to the activities** involving both the employer, as responsible for workplace as per this document, and the second parties when charged for installation and/or commissioning and/or any servicing to be carried out at such a workplace.*

This document is intended to be applied in association with national legislation/regulation/standards and/or codes of practice established on this subject. In the event of conflict in terms of more restrictive requirements in national legislations/regulations with the requirements of this document, the national legislations/regulations shall take precedence.

1. Scope

The main targets of this document are:

- *give practical guidelines in terms of good practice on how to approach the following activities:*
 - *installation and/or*
 - *any other working activities**to be carried out inside the operating assemblies used for treatment / regulating the pressure / measuring / odorization of fuel gases;*
- *to be a specific working tool for the aforesaid activities when second parties are charged to carry out them;*
- *to be a practical guide on how to implement the provisions of the Directive 1999/92/EC and relevant Guide of Good Practice COM(2003) 515 final for the aforesaid activities.*

When the previously mentioned activities are carried out by employees responsible for the workplace, different safety measures can be implemented provided that they are equivalent to those specified by this document with regard to the safety and health protection of the workers. In this case the provisions of the non-binding Guide of Good Practice COM(2003) 515 final should be complied with where applicable.

The gas pressure regulating stations/gas measuring stations/gas odorization unit/gas installations dealt with by this document are those in accordance with following European standards:

- *EN 12186,*
- *EN 12279,*
- *EN 1776,*
- *prEN 15001-1,*
- *gas odorization units as per national standards (e.g. UNI 9463 part 1)*

The nature of the safety measures recommended is in accordance with the following basic principles in the order of priority as listed:

a) prevention of the formation of explosive atmospheres,

or where it is not technically possible

b) avoidance of the ignition of explosive atmospheres.

The approach detailed in this document may be retained as a minimum provision to be complied with also for locations outside the European Union.

Furthermore paragraph 6 details the main provisions for emergency situations.

2. **Reference documents**

Directive 94/9/EC of the European Parliament and the Council of 23 March 1994 on the approximation of the laws of the member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.

Directive 1999/92/EC of the European Parliament and of the Council of 16 December 1999 on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres (15th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC).

Communication from the Commission of the European Communities COM(2003) 515 final – Communication from the Commission concerning the non-binding guide of good practice for implementing Directive 1999/92/EC of the European Parliament and the Council on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres.

EN 1776 - Gas supply systems - Natural gas measuring stations - Functional requirements.

EN ISO 9001 – Quality management systems - Requirements

EN 12186 - Gas supply systems – Gas pressure regulating stations for transmission and distribution – Functional requirements.

EN 12279 - Gas supply systems - Gas pressure regulating installations on service lines - Functional requirements.

EN 50073 – Guide for selection, installation, use and maintenance of apparatus for the detection and measurement of combustible gases or oxygen.

EN 61779-1 – Electrical apparatus for the detection and measurement of flammable gases Part 1: General requirements and test methods.

prEN 15001-1 - Gas supply systems — Gas installation pipework with an operating pressure greater than 0,5 bar for industrial installations and greater than 5 bar for industrial and non-industrial installations — Part 1: Detailed functional requirements for design, materials, construction, inspection and testing.

prTS 15399 – Gas Supply Systems – Guidelines for Management Systems for Gas Distribution network

3. **Definitions**

For the purpose of this document, the following terms and definitions listed in alphabetic order apply.

Explosive atmosphere

Mixture with air under atmospheric conditions of fuel gas in which, after ignition has occurred, combustion spreads to the entire unburned mixture.

Gas equipment

Any apparatus that may be found in regulating stations/gas measuring stations/gas odorization unit/gas installations.

Portable detector

Apparatus capable to emit a perceptible alarm when a potentially hazardous gas concentration occurs.

Potentially dangerous situation

*Situation in a workplace in which explosive atmosphere occurs, because of incidental faults and in which **any potential ignition is not reasonably expected**. (e.g. incidental leakages from sealing components, incidental failure of non metallic pressure containing parts such as rubber diaphragms, etc.).*

Responsible for the workplace

The employer in accordance with article 3 of the Directive 1999/92/EC or the person specifically appointed by the employer.

Service engineer

Person who has been trained and qualified to carry out installation and surveillance activities on specific type and/or series of fuel gas equipment.

Service organization

Self –employed worker, or company or organisation that employs service engineers to install, to carry out surveillance activities on specific type and/or series of fuel gas equipment

Surveillance

All activities that are carried out at site, from the first commissioning of the gas equipment directed towards the safety and the efficiency of the assemblies in order to ensure the continuity in supplying of fuel gas during the foreseen technical life of the assemblies themselves. The surveillance includes following activities:

- *first commissioning,*

- *management of the assembly,*
- *preventive maintenance*
- *corrective maintenance,*
- *integrity strength verification.*

Workplace

Working areas inside a classified zone as per article 7 of the Directive 1999/92/EC within gas pressure regulating stations and/or gas measuring stations and/or gas odorization units and/or gas installations in which a service engineer carries out activities while the stations/installations are under fuel gases pressure.

4. Obligations

4.1. Duties of responsible for workplace

The person responsible for the workplace, at least, should implement the actions hereinafter detailed.

- a) *Classify the workplaces, where the explosive atmospheres may arise, into zones in accordance with annex 1 of the Directive 1999/92/EC.*
- b) *Establish main precautionary measures to be complied with against identified risks.*
- c) *Coordinate the implementation of all measures concerning workers' health and safety when workers of several employers are present in the same workplace or in the areas nearby the workplace.*
- d) *Establish the behaviour/working rules to be complied with when potentially dangerous situation occurs.*
- e) *Notify behaviour/applicable rules to service engineer charged for any activity to be carried out inside workplace.*

*The above principles are normally detailed in the **permit-to-work form** prepared by the person responsible for the workplace in accordance with clause 4.5 of the Guide of Good Practice COM (2003) 515 final.*

The service engineer should be made aware of the provisions in this form and to sign the form itself before entering and/or start of work at the workplace.

4.2. Duties of service organization

The service organization should implement the actions hereinafter detailed.

- a) *Establish the necessary competence for service engineer charged to carry out installations, one or more surveillance activities for a specific gas equipment or a series of specific gas equipment*
- b) *Provide service engineers with appropriate training specifically on the protection against the risk of explosions or take other equivalent measures in order to ensure the competence requested in the previous item.*
- c) *Evaluate the effectiveness of the actions taken detailed in the previous item. The evaluation of the effectiveness of the actions taken may be implemented by a qualification of the service engineer in accordance with applicable national practice where existing or via the methods indicated in clause 6 of EN ISO 9001 and in clause 8 of prTS 15399.*
- d) *Maintain appropriate records of education, training, skills and experience of service engineer.*
- e) *Provide service engineers with the specific and comprehensive written instructions on how to carry out installation and/or surveillance activities in such a way as to avoid any dangerous situation.*
- f) *Provide service engineers with a portable detector to EN 61779-1 and EN 50073 for the detection of fuel gases or vapour concentrations with air capable to emit appropriate alarm when the concentration of flammable gas/vapour reaches the **limit of care threshold** or establish equivalent safety measures.*
- g) *Establish the **limit of care threshold** for the above portable detector in accordance with the requirements in clause 3.2.3 of EN 61779-1 and in clause 5.2.2 of EN 50073. The recommended sets should be as follows:*
 - *from 10% to 30% of lower explosion limit (LEL)¹ for methane,*
 - *from 20% to 30% of lower explosion limit (LEL) for propane and butane.*
- h) *Establish appropriate periodical functional control and periodical calibration for portable detector in accordance with the relevant standard and taking into account the recommendation of the manufacturer.*
- i) *Require that service engineers when entering or working inside workplaces as per this document:*
 - *comply with **the specific rules established by the person responsible for the workplace and the provisions detailed in the permit-to-work form;***
 - *use only antistatic footwear which cannot ignite explosive atmospheres;*
 - *wear a portable detector in 'switch on' status;*

¹ Term and symbol used in EN 50073. The symbol LFL used in EN 61779-1 is equivalent.

- carry out installation and/or specific surveillance activities in compliance with any specific safety procedure suggested by the **manufacturer of fuel gas equipment**;
- install and/or commission only fuel gas equipment in compliance with the requirements showed in table 1;

➤ **Table 1: criteria for selection of gas equipment and protective systems**

Zone classification as per Directive 1999/92/EC of the area where the gas equipment and protective systems are installed or used	Type of gas equipment and protective systems (classification as per Directive 94/9/EC)
0	Category 1 or out ^{a)} of the scope of Directive 94/9/EC
1	Categories 1 or 2 or out ^{a)} of the scope of Directive 94/9/EC
2	Categories 1 or 2 or 3 or out ^{a)} of the scope of Directive 94/9/EC
^{a)} This circumstance should be proved by a declaration of the manufacturer of the gas equipment	

- stop any further working activities and switch off any electric/electronic working means when an alarm of the portable detector occurs, unless the working means are suitable for using in presence of an explosive atmosphere;
 - subsequently cut off any electrical supply from outside;
 - re-start any further work activity only after the source of fuel gas emission has been traced and all necessary measures to avoid any further presence of potential explosive atmosphere in the workplace have been adopted.
- j) Establish specific behaviour rules for service engineers when a potentially dangerous situation occurs and, in particular, the type of mobile working means that may be used for specific type/specified series of gas equipment in this hazardous event.
- k) When working activities on gas odorization units are foreseen, establish specific behaviour rules for service engineers and the mobile working means that may be used for specified type/specified series of unit.
- l) Provide service engineers with mobile working means in accordance with annex II of Directive 1999/92/EC when some working activities are foreseen also in the potentially dangerous situations

4.3. **Duty of service engineer**

Service engineer when entering /working at workplaces as per this document should comply with the provisions hereinafter detailed.

- a) *Carry out his working activities in compliance with the behaviour regulations established by the person **responsible for the workplace** and detailed in the **permit-to-work form**. The service engineer should sign this form as his confirmation to follow the established regulations.*
- b) *Fasten the portable detector to any place of his clothes after switching on and verifying the date of use is within its calibration period.*
- c) *Use only antistatic footwear which cannot ignite explosion atmospheres.*
- d) *Use standard portable working means only under the continuing control of non-existence of explosive atmosphere, unless the working means are suitable to be used in presence of explosion atmospheres.*
- e) *Carry out the specific activities on fuel gas equipment complying with the procedure suggested by the **manufacturer of the gas equipment**.*
- f) *Install and/or to commission only fuel gas equipment in accordance with the requirements of table 1.*
- g) *Stop any further activities and switch off any electric/electronic working means when an alarm of portable detector occurs.*
- h) *Subsequently cut off any electrical supply from outside.*
- i) *Re-start any activity only after the source of fuel gas emission has been traced and all necessary measures to avoid any further presence of potential explosive atmosphere in the workplace have been adopted.*

5. **Specific obligation of service engineer in case of activities on odorization units**

This clause deals only with the risks from potential explosions.

*The service engineer should comply with **the specific rules established by the person responsible for the workplace and the provisions detailed in the permit-to-work form** and, at least, with the provisions hereinafter detailed.*

When entering to workplace the service engineer should:

- a) *Wear only antistatic footwear that cannot ignite explosion atmosphere.*

- b) *Wear only suitable clothes.*
- c) *Bring the portable detector fastened to any place of his clothes, after switching on and have verified that the date of use is within its calibration period.*
- d) *Wear only gloves made of dissipative materials.*
- e) *Use only portable working means in compliance with annex II of the Directive 1999/92/EC.*

6. Specific obligation of service engineer in case of potentially dangerous situations

The service engineer leaves the workplace as quickly as possible when a potentially dangerous situation occurs during his normal activities.

*Subsequently the service engineer should comply with **the specific rules established by the person responsible for the workplace and the provisions detailed in the permit-to-work form** and, at least, with the provisions hereinafter detailed.*

When entering to workplace the service engineer should:

- a) *Wear only antistatic footwear that cannot ignite explosion atmosphere.*
- b) *Bring the portable detector fastened to any place of his clothes, after switching on and have verified that date of use is within its calibration period.*
- c) *Wear only gloves made of dissipative materials.*
- d) *Use only portable working means in compliance with annex II of the Directive 1999/92/EC;*
- e) *Bring appropriate device to locate the source of leakage.*
- f) *Avoid removing any clothing during his activity.*