



ATEX 95 (100A) COMPLIANCE FOR EQUIPMENT MANUFACTURERS AND END USERS

Datasheet

Since 30th June 2003 it has been necessary for 'End Users' to correctly select and install electrical and non-electrical equipment into classified hazardous areas. Whether the equipment is supplied directly from an EU manufacturer or put into first use by the End User, the equipment must be in compliance with the Essential Health and Safety Requirements of ATEX 95 (100a) Directive 94/9/EC and its associated UK Regulations.

INTRODUCTION

Manufacturers of equipment in the EU (electrical and/or non-electrical) are now responsible for identifying the suitability of their products for use in areas where potentially flammable or combustible atmospheres may exist. Similarly 'End Users' who chose to source equipment from outside the EU have similar requirements. As the sole importer they will need to ensure that the equipment is compliant with the 'Essential Health and Safety Requirements' (EHSR) of ATEX 95 or appoint a competent organisation to do this on their behalf.

In order to conform to the EHSRs of the Directive, sometimes also known as ATEX 100a, the equipment manufacturer or end user (sole importer) has specific responsibilities for the supply and installation of the equipment.

The main points that need to be considered are:-

- New equipment is supplied as one of three defined 'Categories' of equipment.
- Design and construction of the equipment is in accordance with the EHSRs.
- A technical file for the equipment is produced covering internal production control. This would also be included as part of a submission to a notified body for conformity assessment.
- Ignition risk assessment covering both the electrical and non-electrical aspects of the equipment is completed as part of the technical file requirements.
- Equipment has clear markings for safe use, with suitable instructions and maintenance information together with the equipment 'Declaration of Conformity'.

EQUIPMENT RISK ASSESSMENT

The scope of ATEX 95 covers the equipment, components and any safety regulating or protective systems that are required for safe operation. It is therefore necessary to risk assess the equipment and include any existing integrated explosion protection systems, taking into consideration its design, the way it is operated and any maintenance requirements. This will clearly be conducted taking into account the ignition sensitivity and explosion severity of the flammable materials present.



MECHANICAL EQUIPMENT RISK ASSESSMENT

For ignition risk assessments of electrical equipment, little has changed in the way manufacturers approach internal control of production and conformity assessment. However, as the risk assessment of mechanical sources of ignition is a relatively new requirement, consideration should be given to following the guidance as contained within the new non-electrical equipment design standards EN 13463 Parts 1-8. Within part 1 of these standards (General Requirements) an approach to ignition risk assessment has been developed to assist in this process.

HOW CHILWORTH CAN HELP

Chilworth can offer assistance for the generation of equipment ignition risk assessments based on our specialist risk assessment capabilities.

In order to understand all the sources of ignition arising from equipment operating in zoned areas, a technical review should be undertaken in conjunction with the manufacturer or (responsible person). This evaluates how the equipment operates and what fault conditions can reasonably occur both in normal operation, or in expected malfunction and rare malfunction.

Additionally where fault circumstances do occur, what ignition sources can arise and what preventative or mitigation measures exist to deal with such situations.

This technical review is either part of a full ignition risk assessment or review of existing documentation and is designed to establish a structured assessment of the equipment hazard and risk.

The ignition risk assessment focuses on the potential sources of ignition as described within EN 1127-1. However, it is only effective with suitable supporting flammability data such as minimum ignition energy, minimum ignition temperature, layer ignition temperature and explosion severity (Kst Class). Chilworth undertake both the necessary experimental investigations and risk

assessments in a manner that adopts the methodology as identified in EN 13463-1 and is as follows:-

- **Category 3** - Identification and assessment of ignition sources that can occur in normal operation
- **Category 2** - Identification and assessment of equipment which will require ignition assessment for normal operating conditions and expected malfunctions.
- **Category 1** - Identification and assessment of equipment which will require ignition assessment for safe functioning with two independent operating faults or a single rare malfunction.

We have also developed a number of test packages which will assist with the categorisation of the equipment. These include maximum surface temperature rating explosion vent sizing as well as MIE, MIT, LIT and Kst determinations.

This structured approach is designed to assist manufacturers and responsible persons to fully document the risk assessment process for the equipment. It recommends where to apply new procedures, measures or safety functions to the equipment, in order to ensure that ignition sources are prevented or effectively controlled. This will assist with the overall obligations for compliance with the EHSRs and provision of a Declaration of Conformity.

faxback

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My particular interests are:-

- | | |
|---|--|
| Hazardous Area Classification..... <input type="checkbox"/> | IEC 61508/11 Functional Safety..... <input type="checkbox"/> |
| Safety Management System Benchmarking..... <input type="checkbox"/> | ATEX/DSEAR Compliance..... <input type="checkbox"/> |
| Electrostatic Hazards / Problems..... <input type="checkbox"/> | HAZOP..... <input type="checkbox"/> |
| Incident Investigation / Expert Witness..... <input type="checkbox"/> | Training..... <input type="checkbox"/> |
| Powder / Dust Safety Data Testing..... <input type="checkbox"/> | Chemical Reaction Hazards..... <input type="checkbox"/> |

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