

BUSINESS PLAN

CEN/TC 305 POTENTIALLY EXPLOSIVE ATMOSPHERES – EXPLOSION PREVENTION AND PROTECTION

EXECUTIVE SUMMARY

Business environment, benefits and priorities

CEN/TC 305 was established in 1993, with the purpose to elaborate standards on explosion prevention and protection for any application in explosive atmospheres with the exception of explosions expected from explosives or unstable substances.

The following scope had been approved for CEN/TC 305:

"Standardization in the field of explosion prevention and protection. Drawing up of standards relating to test methods for determining the flammability characteristics of substances, and for equipment and protective systems for explosive atmospheres, equipment and systems for explosion prevention and protection and terminology and methodology in the field of explosive atmospheres. Excluded: Standardization of electrical apparatus for explosive atmospheres (dealt with by CENELEC/TC 31)."

The standards developed by CEN/TC 305 provide information and guidance for explosion prevention and protection to manufacturers, users and authorities around Europe.

Explosive atmospheres are to be expected in many different fields where flammable substances are used. These can be solids, liquids, vapours or gases. Explosions can have severe and dramatic consequences in terms of human lives lost, injury and economic costs. To avoid explosions, or if this is not possible to limit the consequences of an explosion, specific data on flammable substances are needed and special design of equipment has to be used or special methods or protective systems have to be applied.

The general objective in standardizing requirements for equipment and protective systems for use in potentially explosive atmospheres is the improvement of health and safety of users at workplaces and elsewhere through safe products. The standards of TC 305 contribute to this goal by facilitating trade of equipment and protective systems for explosive atmospheres and by reducing barriers to trade. At the same time the standards enable the introduction of an equal and high level of product safety throughout Europe.

The standards of CEN/TC 305 help to fulfil Directive 2014/34/EU of the European Parliament and the Council of February 26, 2014 on the approximation of the laws of the member states concerning equipment and protective systems intended for explosive atmospheres.

The stakeholders are manifold, comprising industry (manufacturers of non-electrical equipment and protective systems for explosive atmospheres and users of such products, as well as manufacturers of flammable substances) including mining industry, public authorities, insurances, trade unions, test houses and certifying bodies.

Persons interested in participating in the work of CEN/TC 305 should contact their country's CEN national member body for information.

1 BUSINESS ENVIRONMENT OF THE CEN/TC 305

1.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal, societal and/or international dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this CEN/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

Explosive atmospheres are to be expected in many different fields where flammable substances are used. These can be dusts, liquids, vapours or gases. To avoid explosions or if this is not possible to limit the consequences of an explosion specific data on flammable substances are needed and special design of equipment has to be used or special methods or protective systems have to be employed.

Interested parties in the standardisation process are industry (manufacturers of equipment and protective systems for explosive atmospheres and users of such products), public authorities, TUTB, insurances and testing institutes.

CEN/TC 305 is covering any standardisation project dealing with explosive atmospheres. Excluded areas are standardisation in the field of electrical equipment, which is dealt with in CENELEC/TC 31 and of explosives which are within the scope of CEN/TC 321.

CEN/TC 305 prepares European Standards, most of which should be able to support Directive 2014/34/EU of the European Parliament and the Council of February 26, 2014 on the approximation of the laws of the member states concerning equipment and protective systems intended for use in potentially explosive atmospheres. This "ATEX-Directive", a new approach Directive under Article 95 (former Article 100a) of the European Treaty, ensures free movement of goods in the EU territory. All equipment and protective systems for explosive atmospheres put on the European Market have to meet the essential health and safety requirements laid down in this ATEX-Directive. The aim of this European legislation is to harmonize the safety regulations related to equipment and protective systems for use in potentially explosive atmospheres in order to create an internal European Market allowing the free movement and trade of equipment and protective systems.

CEN/TC 305 standards are additionally supporting the essential requirements concerning explosion safety of Directive 2006/42/EC of the European Parliament and the Council of the approximation of the laws of the member states relating to machinery ("Machinery Directive"), which demands in its Annex I, Clause 1.5.7 that machinery shall be so designed and constructed to avoid any risk of explosion and must comply with the provisions of the specific Community Directives.

The standards of CEN/TC 305 have also to consider 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), when defining requirements concerning items to be covered by the user manual of the equipment or protective system, e. g. safety instructions, maintenance intervals, content of warning labels. Thereby CEN/TC 305 standards do not address directly the essential requirements of this Directive, which are covered by national legislation, but it is possible to develop Technical Reports giving guidelines on the technical aspects of explosion safe operation of products.

Some of the standards of CEN/TC 305 dealing with the determination of the explosion characteristics of flammable substances are supporting Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work (14th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC).

Equipment and protective systems manufactured in conformity with specified published European standards which have also been published as identically worded national standards ("transposed harmonised standards"), will be presumed to comply with the essential health and safety requirements of the ATEX Directive covered by those standards.

Furthermore, if requested or considered necessary, CEN/TC 305 advises other technical committees of CEN on aspects concerning explosion prevention and protection.

In 2007, IEC SC 31M "Non-electrical equipment and protective systems for explosive atmospheres" was founded.

ISO and IEC decided by mutual agreement to cooperate and to set up a single subcommittee under IEC TC 31, in cooperation with ISO, which means that voting at DIS- and at CDV-stage will be done in parallel at IEC and ISO. It should be mentioned that only SC 31M is entitled to produce double logo (ISO-logo and IEC-logo) standards, with the standard number to become ISO 80079- or ISO/IEC 80079- followed by a part number.

ISO and IEC have expressed the commitment to cooperate jointly in order to make SC 31M a success. This has been laid down by both the IEC and the ISO Management board in IEC SMB decision 129/17. Within this decision, SMB approved the provisional title and the scope of SC 31M, which reads as follows:

"To prepare and maintain international standards relating to non-electrical equipment and protective systems for use where there is a hazard due to the possible presence of explosive atmospheres of gases, vapours, mists or combustible dusts"

Note: For the purposes of this sub-committee non-electrical equipment is defined as "equipment which can achieve its intended function mechanically". For the purposes of this sub-committee, 'Protective system' is defined as devices other than components of the equipment which are intended to halt incipient explosions immediately and/or to limit the effective range of an explosion."

CEN/TC 305 has adopted all projects under development in SC 31M under the terms of the Vienna Agreement as European projects which are candidates for harmonisation under Directive 2014/34/EU.

1.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the CEN/TC:

- indication of cases where European Standards prepared by CEN/TC 305 are cited in the Official Journal of the European Union as harmonised standards under the "New Approach" ATEX-Directive;
- indication of cases where European Standards prepared by CEN/TC 05 are cited as normative references in European Standards of its own and of other CEN committees.

2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC 305

- Supporting manufacturers to construct machines complying with essential safety and health requirements of the ATEX-Directive.
- Development of product standards which are based on a European accepted approach.
- Provision of an overall framework and guidance to enable designers, manufacturers, etc. to produce equipment and protective systems which are safe for the intended use in potentially explosive atmospheres.
- Comprehension of a wide range of interests such as test houses, consumer groups and employee representatives to take part in the future development of the philosophy and methodology for explosion protection and risk assessment.
- Contribution towards the removal of technical barriers to trade and opening of the markets throughout Europe.
- Reduction of the risks of injury at work.
- Contribution towards the achievement of equal levels of explosion safety in the various countries for each explosion prevention and protection aspect dealt with in a European Standard.
- Stimulation of the development of protection technologies as technology develops.
- Facilitation of the relations between manufacturers, users, and bodies in charge of technical inspection and testing.
- Promotion of a risk based approach to design of equipment intended for use in potentially explosive atmospheres.
- It is expected to support European legislation, in particular New Approach Directives. Approximately 37 available European Standards of CEN/TC 305 have already been cited in the Official Journal of the European Union under Directive 2014/34/EU and confer presumption of conformity with Essential Requirements of that Directive.

3 PARTICIPATION IN THE CEN/TC 305

All the CEN national members are entitled to nominate delegates to CEN Technical Committees and experts to Working Groups, ensuring a balance of all interested parties. Participation as observers of recognized European or international organizations is also possible under certain conditions. To participate in the activities of this CEN/TC, please contact the national standards organization in your country.

4 OBJECTIVES OF THE CEN/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

4.1 Defined objectives of the CEN/TC 305

Based on the considerations above, CEN/TC 305 proposes the following objectives and strategic directions for its future work:

- The main objective of the TC is to improve the market oriented approach and to produce standards which fully satisfy the needs of the market (the users).
- To give added value to the Directives 2006/42/EC and 2014/34/EU.
- To elaborate standards on explosion prevention and protection for any application in atmospheric conditions, and where technically reasonable, for non-atmospheric conditions, with the exception of explosions expected from explosives or unstable substances.
- To adjust the work programme to meet market needs.
- Highest priority should be given to standards, which are identified as candidates for harmonisation under the directive 2014/34/EU.

4.2 Identified strategies to achieve the CEN/TCs defined objectives.

CEN/TC 305 has set up different working groups reflecting the objectives given above:

WG 1 Test methods for determining the flammability characteristics of substances

WG 2 Equipment for use in potentially explosive atmospheres

WG 3 Devices and systems for explosion prevention and protection

WG 4 Terminology and Methodology

WG 5 Equipment and protection systems for mining

WG 6 Flame arresters

The standard EN 1127-1 "Explosion prevention and protection – Part 1: Basic concepts and methodology" specifies the basic methods for the identification and assessment of hazardous situations leading to explosions and the design and construction measures appropriate to the required safety.

A standard on terminology (EN 13237) is published too. These two standards are the basis for the following work and shall be referred to where possible.

One of the main requirements of the Directive 2014/34/EU is the preparation of a risk analysis or hazard analysis of the equipment and/or protective system. Therefore, two Type A standards have been developed, which describe the principles for a consistent systematic procedure for risk assessment as introduced in EN 1127-1 or EN 1127-2. It is in both the manufacturer's and user's interest to establish a common methodology for achieving safety, reliability and efficacy in functioning and operating of equipment with respect to the risks of explosion. Thus, risk assessment is a tool which provides the essential link between manufacturers and users.

Integrated explosion safety is conceived to prevent the formation of explosive atmospheres as well as sources of ignition and, should an explosion nevertheless occur, to halt it immediately and/or to limit its effects.

The standards of the series EN 13463 are among the first standards that were fed into the IEC SC 31M as basic input for International Standardisation. Standard EN 13463-1 specified the basic methods and requirements for design, construction, testing and marking of non-electrical

equipment for the intended use in explosive atmosphere. This standard is replaced by EN ISO 80079-36 which has been developed by IEC/SC 31 M. The other parts of the standards series EN 13463 give more detailed information on how to protect equipment with the different types of ignition protection. EN 13463-5, -6 and -8 are now replaced by EN ISO 80079-37.

In addition a set of standards concerning protective systems is being developed. In these standards test methods for protective systems as well as the requirements necessary to install a efficient system are described.

4.3 Environmental aspects

The scope of the concept standards of CEN/TC 305 is explosion protection and prevention. Every explosion contributes to a negative impact on the environment, either by the effects of the explosion itself (by the explosion pressure and heat) and/or the combustion products. Explosion protection and prevention makes, therefore, an active contribution to protection of the environment. The standards from CEN/TC 305 set a high level of explosion prevention and protection that ensures a low environmental impact. By means of referring to the standards of CEN/TC 305, product standards from other CEN/TC will implement this low level of environmental impact to the specific product that is dealt with in such product standards. The basic concepts and methodology for explosion protection and prevention are described in EN 1127- 1 and in EN 1127-2 for mines. These standards aim at avoiding flammable substances and, where this is not possible, both reducing the amounts of flammable substances and preventing these substances safely from contact with the environment.

Selections of materials used for the equipment and protective system design will be addressed in the future work revision taking into account these aspects for recycling and lifetime effect.

5 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE CEN/TC WORK PROGRAMME

The main problem in CEN/TC 305 is the small pool of experts. Explosion prevention and protection is a very specific field and only a limited number of experts are available to elaborate the necessary standards.