

CENELEC/TC or SC 44X	Secretariat United Kingdom	Date January 2013
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TC or SC title: Safety of machinery - Electrotechnical aspects

A Background

CLC/TC 44X mirrors the work of IEC/TC 44. It works closely with IEC/TC 44 and makes every effort to publish standards that are identical with the IEC. This is helped by all delegates and experts in CLC/TC 44X also being active delegates and experts in IEC/TC 44. Non CENELEC delegates are encouraged to attend CLC/TC 44X meetings as observers.

B Business Environment

B.1 General

Continuing industrial globalization has considerable economic impact on regional markets related to machinery. The European market is expanding especially in the new eastern economies. The overall machinery business has dramatically changed during the last few years. Today, many business contracts are to local specifications. International and European Standards play an important role to assure that the equipment produced locally and the ones shipped can be installed on site without any interface problems. The increased use of electronics in safety related applications of machinery around the world has been duly taken into account by IEC/TC 44 and CLC/TC 44X with the recently published standards EN 62061 (functional safety) and IEC 61496 series (Electrosensitive Safety Protective Equipment).

European market (sales for 2011)

For machinery the worldwide market is approximately 2.080 billion Euros, the share of electrical equipment within this volume is about 30% and is growing. Geographic segmentation: 15% North America, 49% Asia/Pacific and 33% Europe (EU).

B.2 Market demand

Customers for CLC/TC 44X standards include manufacturers, test houses, market surveillance authorities, and product committees of CENELEC and CEN. IEC/EN 60204-1 is referenced in several hundreds of IEC, ISO, CLC and CEN standards.

As all CLC/TC 44X standards are safety related, they are widely used both

- by regulators for detailing their technical laws and regulations (e.g. European Machinery Directive 2006/42/EC) and
- in B2B contracts.

The publication of the horizontal safety standards in the IEC/EN 61508 series by IEC/SC 65A created a need for a machine sector standard which was published as EN 62061.

In cases where inherent safety cannot be achieved by inherent safety measures with reasonable economic effort appropriate technical protective measures are required. For these applications the market requires more modern technical solutions and these can be satisfied by, for example, electrosensitive protective equipment (ESPE). This market requirement is driving the maintenance work for IEC 61496 parts 1, 2, 3 and 4.

A demand has been recognized for guidance on the application of presence sensing equipment to machinery and work has taken place in coordination with ISO/TC 199 to satisfy this need resulting in the publication of IEC/TS 62046.

B.3 Trends in technology

The following technology trends are an ongoing process:

- safety functions,
- functional safety incl. software,
- development and application of smart sensors,
- remote diagnostics of plant and equipment,
- use of communication networks (bus systems) for machinery safety related control functions,
- cableless control,
- switching devices on semiconductor basis.

As far as already applicable for safety related aspects the present editions of CLC/TC 44X standards duly reflect the “state of the art”. Further new developments of these trends will be taken into account as soon as they are mature enough for safety related applications in the machinery field. This is particularly true with regard to IEC 61496-4 which is being split into three sub parts. The impact on IEC/TC 44 work will be that CENELEC National Committees will continue to need to provide experts experienced in the latest state of the art in safety related software technology.

B.4 Market trends

IEC/TC 44 has to address the increased worldwide applicability of its standards. For machine manufacturers the global market does not only mean the removal of barriers to trade for single machines but globally operating customers (e.g. car manufacturers, chemical industry). They will expect common solutions which can be used not only in one country or region but worldwide in order that they can harmonize their sites and plants globally to:

- rationalize their production procedures,
- save costs by means of globally organized purchase of production equipment,
- apply unified technical occupational health and safety provisions.

The consequence of these market trends will be that IEC/TC 44 fosters its activities to increase worldwide applicability of its standards. This will include active input of expertise from CLC members and the commitment to adopt identical standards. CENELEC experts will need to make IEC/TC 44 working groups aware of the Essential Health and Safety Requirements (ESHRs) of the Machinery Directive and encourage them to draft standards that allow them to comply without the need for Common Modifications.

B.5 Ecological environment

CLC/TC 44X considers that although the effect on the environment of electrical equipment within its scope is very small it should be considered in future work. CLC/TC 44X standards do not deal with the product requirements of components because these are dealt with in the relevant product TCs. Only enclosures may need specific ecological requirements in CLC/TC 44X standards. Provisions for energy efficiency and disposal /recycling are taken into account in the activities of CLC/TC 44X.

B.6 Involvement of societal stakeholders

CLC/TC 44X participation is principally from manufacturers, test houses and certification bodies. Due to the relationship with IEC/TC 44 this is at both European and international level.

B.7 Involvement of SMEs

Representatives of NORMAPME have attended CLC/TC 44X meetings representing SMEs. They were made aware that CLC/TC 44X standards are drafted in IEC/TC 44 and comments need to be made on draft standards through the IEC route to be able to be taken into account. This is the only way in which the development of standards adopted by CLC/TC 44X can be influenced. CLC/TC 44X makes their experts aware of CEN-CENELEC Guide 17 “Guidance for writing standards taking into account micro, small and medium-sized enterprises (SMEs) needs”

C System approach aspects

The publications of CLC/TC TC 44X are referenced in the CEN A-, B-, C- standards system for machinery:

A-standards describe the basic principles of machinery safety as well as a systematic risk assessment. These include CLC/TC 44X and ISO/TC 199 standards.

B1- type standards deal with the requirements of risk reduction for the specific hazards associated with a machine or an assembly of machines, B2-type standards describe the requirements for specific safety devices (emergency stop, two-hand controls, light curtains etc.).

C-type standards describe the requirements for specific machines.

EN 60204-1 is a typical example of a B1-type standard. If there is no C-type standard available for a certain kind of machine, this standard can also be applied directly for electrical hazards.

CLC/TC 44X acts as supplier for the following committees where CLC/TC 44X standards are referenced: TC 2, TC 3, TC 17B, TC 17D, SC 22X, TC 26, TC 27, TC 64, TC 88, TC 105.

CLC/TC 44X is a customer of the following committees whose standards CLC/TC 44X reference: TC 17B, TC 17D, TC 64, TC 65, SC 65A, TC 77, TC 78, TC 89, TC 99 and CISPR.

D Objectives and strategies (3 to 5 years)

- Timely EN adoptions of IEC/TC 44 publications
- Feedback of European requirements to IEC/TC 44 taking into account the EHSRs of the Machinery Directive
- Encouraging active participation of CENELEC members at both CENELEC and IEC level
- Review of current CLC/TC 44X publications

E Action plan

All in D are ongoing

F Useful links to CENELEC web site

TC home page giving access to Membership, TC/SC Officers, Scope, Publications, Work programme [password-protected area].

http://www.cenelec.eu/dyn/www/f?p=104:7:3155566815285551::::FSP_ORG_ID,FSP_LANG_ID:111,25

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