

BUSINESS PLAN

CENELEC/TC	Secretariat	Date
CLC/TC 20	Germany	May 2023

CLC/TC 20 – Electric cables

A Background and structure

The scope of TC20 is to prepare harmonized standards in the field of insulated conductors, cables and their accessories, for both Low and High Voltage applications, with the exception of data and telecommunication cables.

CLC/TC 20 has 26 participating members and there are 7 countries/organisations with Observer status. TC20 first met in March 1973 in Germany (Munich). In the first years until 1978 and in the early nineties there have been 2 meetings per year, but mostly 1 plenary meeting per year has proven to be sufficient.

Old files show that from the beginning the work was done by using Working Groups. For instance at the 25th meeting the reports of WG1 (current ratings), WG2 (technical procedures), WG3 (code designation, marking), WG7 (arc welding), WG8 (lifts) and WG9, WG10, WG11, WG12 were considered. WG 1 was disbanded at the meeting in 2000, leaving WG9 to WG12 remaining. In 2008 a former Task Force was transferred into WG13, resulting in the current structure with 5 Working Groups:

WG 09	Cables for use by electricity supply companies
WG 10	Fire performance tests for cables
WG 11	Harmonisation of joints, accessories and terminations of electric cables
WG 12	Harmonisation of cables for railway rolling stock
WG 13	Covered overhead line conductors

Depending on the workload these Working Groups meet up to two times per year.

B Business Environment

B.1 General

Our society needs good quality, safe, reliable and sustainable cable solutions, now ranging from Low Voltage (LV) power supply up to High Voltage (HV) long distance transportation cables. The requirements on such mostly mature products with a long life expectancy are determined by both technical as well as economic aspects.

Overall cable market volumes are generally following the overall economic trends in particular the development of GDP (Gross Domestic Product) figures. Day-to-day pricing is affected by the global oil and metal price fluctuations.

The entrance of new member countries to CENELEC has reinforced the importance of European standards in the sector. Company mergers, amongst manufacturers as well as for other stakeholders, stimulate the internationalisation and rationalization of standards.

Test method standards are developed in close cooperation with IEC TC20. However, product standards for cables for fixed installation (for building installations as well as for the distribution and transport infrastructure) reflect the national installation practices and cover specific regional/national requirements.

B.2 Market demand

TC20 standards are widely used as the basis for commercial contracts. In particular manufacturers, material suppliers, test houses and approval organizations are strong users of TC20's standards. Generally all parties involved in the generation, transmission and distribution of electricity have an interest in CLC TC20 standards. The products range from LV domestic installation wiring and appliance wires through to HV supertension transmission cables. Analysis shows that manufacturers and users are represented on Working Groups and at TC level, but most participating users are from the utility sector. Although there is some participation from the newer CENELEC members, this needs further encouragement.

Many TC20 standards are ENs and are therefore implemented unchanged at national level. However, in particular for product standards for the distribution and transmission networks TC20 makes use of Harmonisation Documents (HDs) reflecting the local and national needs.

TC20 strives to continue to retain a coherent and inter-related set of documents in which the essential product standards are supported by those for components, test methods, current ratings and design criteria. For test method standards there is very wide, mostly global, usage. This preference for International Standards (IEC standards) reflects the strong consensus opinion that duplication of test methods must be avoided.

The majority of the work covers the maintenance of existing standards, as these standards can accommodate most of the technological developments for most cable types. However, some new standards, covering major extensions due to new technology or to satisfy new applications in particular relating to the use of renewable energy sources, are required. In recent years a group of standards for low fire hazard applications is under development to respond to the Mandate (M/443) under the Construction Product Regulation.

B.3 Trends in technology

For cable standards improvements derive mainly from technology developments for production processes, materials and components, and can be seen as gradual changes to a substantially mature situation. These developments, which improve the efficiency and durability of the cables, are incorporated into the standards via maintenance work.

The demands for modern infrastructure networks, which includes cross-border interconnections and the adoption to the efficient use of renewable energy sources, means that the TC is looking for the medium-long term at:

- developments in Smart Grid solutions
- developments for HVDC (high voltage direct current) polymeric cables;
- developments in subsea cables;
- developments in UHV (ultra-high voltage);
- application of superconductivity in cables; together with IEC TC20, IEC TC90 and CIGRE (International Council on Large Electric Systems).

To avoid inefficiency, CLC TC20 currently choose not to operate in HVDC, UHV or subsea cables, instead allowing the work to be managed internationally within IEC TC20

Electrical cables will also play an important role in future development of applications related to

- Smart Cities and Smart Home
- Internet of Things
- Industry 4.0
- EU Taxonomy
- Green Deal Industrial Plan
- Environmental sustainability
- UN Sustainable Development Goals (SDG)

and CENELEC TC 20 will take responsibility to develop necessary product standards as soon as any specific demand is defined.

Fire testing of cables has made much progress in recent years and further improvement of tests will continue to be included in the work programme.

There is continuing trend to specify low fire hazard cables; more product standards with halogen free and low smoke flame retardant materials are expected.

The technology and work of TC20 is not in an area with much political focus and co-regulation is at present no issue. Besides the existing mandate M/443 for cables (see B.2) no other EC standardization mandates which directly impact the work of TC20 are expected.

Recent standardization projects cover cables for photovoltaic installations (1,5 kV DC cables) and LV charging cables for electric vehicles.

B.4 Market trends

Much technical development work over the last 20 years has been in the area of low fire hazard cables. This demand is supported via new test method standards which will be further refined.

The growth in demand for electrical energy and the parallel demand for energy efficiency as an economic and environmental benefit, will promote infrastructure changes. As indicated in B.3, this could result in an eventual need for standardisation associated with cables for UHV, polymeric HVDC, subsea and for superconducting cables.

B.5 Ecological environment

The TC is monitoring the environmental aspects of its products and components both in relation to their end-of-life disposal or recycling and their in-service performance. A specific guidance document (IEC 62125 'Environmental statement specific to TC 20 – Electric cables') is available, and the officers of TC 20 will continue to monitor any requirement for a future EN. TC 111X is seen as a good source of information and encouragement, and its work will be continued to be monitored.

There is a strong awareness of the demands and potential impact of requirements and regulations relating to environmental and health and safety aspects. For example, for certain applications the

use of lead and halogens is restricted. Developments are carefully monitored to assess relevance to power cables.

There is a demand for more energy efficient operation of cables and IEC TC20 published information some years ago on suitable cable design and in particular on application parameters to achieve lower transmission losses and reduced heating effects, and hence reduced carbon footprint. Maintenance work will seek to raise the profile of this work which up-to-now has been limited due to other priorities.

B.6 Involvement of societal stakeholders

Societal stakeholders are usually end users of our products. As such they use our standards but are not very often involved in their preparation. However, they become more involved with cable products as soon as certification and quality assessment issues arise, and whenever reliability and sustainability issues are dealt with.

B.7 Involvement of SMEs

Many CLC/TC 20 experts are coming from the cable manufacturing industry and from national and European Trade Associations (e.g. Europacable) that include SMEs. Some of the test houses represented in CLC TC20 can also be considered as SMEs.

B.8 Regulatory affaires

TC 20 has noted the increasing demand for voluntary product standards to relate directly to regulatory requirements. TC 20 is also aware that legal requirements must, at all times, be respected, and that the provisions of Regulations and Directives must prevail over those of the voluntary standard.

For some Regulations and Directives there is a requirement to add information to the voluntary product standard, typically in the form of an Annex ZZ. This then allows the standard to be cited in the Official Journal of the European Union (OJEU), thus affording a presumption of conformity with the relevant Regulation or Directive.

For TC 20 the following Regulations and Directives lead directly to requests for an Annex ZZ:

- Low Voltage Directive (2014/35/EU) for cables from 50 V a.c. up to and including 1000 V a.c.
- Construction Products Regulation (EU/305/2011) for all types of cables for general applications in construction works subject to reaction to fire requirements

Other legislation, for instance the Directive on the restriction of the use of certain hazardous substances (RoHS - (2011/65/ EU)), can also affect voluntary product standards.

C System approach aspects

TC 20 products, by their very nature, are generally not suitable for coverage by a horizontal system approach to standardisation. This is principally due to factors such as:

- the wide variety of end-uses to which a particular cable type can be put;
- the role of cables as connecting devices (often over long distances) between a very broad range of electrical equipment;
- the use of cables as long-life products (many decades) and their installation in inaccessible places (e.g. buried).

TC 20 has liaisons and interfaces with several other TCs and SCs. These liaisons are necessary in order to:

- ensure power cable standards are prepared under the responsibility of TC20;
- develop cable standards in line with requirements of system and horizontal committees;
- co-operate with other cable committees on common issues like materials, test methods, fire and environmental matters.

Liaisons with TC 46X and TC 86A, for respectively data and telecommunication cables, are essential to ensure technical consistency on common cable issues.

Active cooperation is also established with TC64, TC9X, TC213 and CEN TC127. Other committees to monitor are amongst others: TCs 7X, 11, 23, 34, 69X, 82 and 111X.

D Objectives and strategies

Objectives

- 1 Maintain the time for development of TC20 work within required timescales and according to agreed maintenance cycles;
- 2 Regularly review TC20 product standards to reflect changing technologies and user requirements, for example in the area of fire performance, but ensure good stability for associated test methods;
- 3 Ensure that those standards that have had no recent systematic review are addressed;
- 4 Ensure that work is prioritized in relation to the available resources;
- 5 Maintain and promote the existing high awareness of TC20's work and standards, especially towards newer members and associate members of CLC;
- 6 Build upon the environmental considerations already developed in TC20.

Strategies:

- 1 Encourage convenors and project leaders to plan work, meetings and schedules up to three years ahead;
- 2 Ensure that convenors and project leaders are aware of best working practices, and have access to all available tools to assist their work;
- 3 Monitor market and technological trends;
- 4 Engage with CCMC at the earliest stage of any procedural or structural problems likely to cause delay;
- 5 Maximise consensus for both new work and amendments/revisions before formal entry into the procedures;
- 6 Regularly review target dates for all work.

E Action plan

The latest version of TC 20's work programme can be found on the relevant web page of the committee. The items listed below are some of the most significant ones and should all be completed or have made significant progress in the next 1 to 2 years.

- 1 Progress work under Mandate M/443;
- 2 In process for new edition of HD 603, 604, 626;
- 3 Continue the revision of HD 629 part 2 and new part 3;

F Useful link to CENELEC website

https://www.cenelec.eu/dyn/www/f?p=104:7:277400956339101:::FSP_ORG_ID,FSP_LANG_ID:1257155,25

Walter Winkelbauer