

BUSINESS PLAN

CENELEC/TC or SC CLC/TC 7X	Secretariat Germany	Date 2013-06-16
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TC or SC title: Overhead electrical conductors

A Background

CLC/TC 7 'Overhead electrical conductors' existed for a long time and published European standards for electrical conductors and conductor wires, but was disbanded due to a proposal of the British National Committee in 2002.

In the meantime, international standardization of overhead electrical conductors and their components was controlled by IEC/TC 7, especially for conductors (stranded with round or formed wires and with or without gaps between layers), variety of conductor wires and core wires, guidance for fabrication and utilization of conductors as well as test methods for assessment of overhead electrical conductor performance and operation. Ten (10) European countries are P-members in IEC/TC 7, and the developed IEC standards were accepted as European standards in the parallel voting process as per the Dresden IEC-CENELEC agreement.

Recent IEC activities affect existing European standards (requirements for greases, Al-Mg-Si alloy wires, zinc coated steel wires). Therefore, CENELEC activities are necessary. A re-vitalized CLC/TC 7X can coordinate these activities, defend European interests and motivate European countries for more active cooperation in IEC/TC 7.

The work of CLC/TC7 - the mirror committee of IEC/TC 7 - shall be guided by the principles of the IEC-CENELEC Dresden agreement:

- Effective use of expertise resources
- Acceleration of project processing
- Acknowledgment of priority of IEC/TC 7 activities
- Active cooperation of European IEC/TC 7-members with the target of harmonization of similar IEC and CENELEC standards
- Parallel voting on new developed IEC standards in IEC and CENELEC
- Adaptation of IEC standards to European specific features.

B Business Environment**B.1 General**

In Europe, changes are still ongoing in the power sector. Unbundling, electric power trading and integration of renewable energy sources are the key words. These activities require reinforcement and restructuring of the electrical grids, increase of transmission capacities of the overhead lines and new links between the countries. The European electrical grid has to be completed in the south-eastern regions especially. At the same time, older overhead lines started reaching the end of their lifetime and may need refurbishment, upgrading or up-rating and, in many cases, replacement of conductors. These trends increase the pressure on CLC/TC 7X to offer standards of a variety of conductor types and sizes. The refurbishment of existing lines requires the availability of more conductor types (stranded with round or formed wires and with or without gaps) as well as new kinds of alloys (such as heat resistant aluminium alloy or aluminium alloy with optimised mechanical strength and conductivity) and materials (annealed aluminium, composite cores, etc.).

The surge in optical needs for the purpose of communication, supervision and control between substations in electrical transmission and distribution systems have already led to the development of a number of conductors with optical fibre units. The demand of monitoring power transmission capacities of overhead lines and the development of increased control and metering continue the application of conductors with optical fibre units.

The shortage of new line corridors led to the development of compact overhead lines using covered overhead electrical conductors which can reduce the clearance between the phase conductors and to earthed parts of supports or obstacles.

Business is affected by fluctuant prices of metals, oil and other global indicators.

B.2 Market demand

The customers of CLC/TC 7X standards are electricity utilities, overhead line contractors, conductor manufacturers and consultants. These customers are represented within CLC/TC 7X membership.

CLC/TC7 standards are well accepted in Europe and guarantee high quality of the specified products and materials. European overhead electrical conductor standards are often specified in projects in Africa and Asia financed by international lenders such as European Investment Bank or World Bank.

Duplication of some CENELEC and IEC standards exists. The demand for unification of international standards and reducing the numbers of standards can be met by a strong co-operation between CLC/TC 7X and IEC/TC 7. On the basis of the IEC-CENELEC Dresden agreement, duplications shall be reduced and avoided by the concentration of expertise in common working groups and the target of standard harmonisation and parallel voting.

The market demands new conductor and material standards as well as maintenance of the existing ones. New materials and conductor types introduced in the market require decisions by CLC/TC 7X whether to standardise or not.

B.3 Trends in technology

The high costs of energy losses are leading to larger conductor sizes and conductors with higher conductivity. There is also a need for conductors which can operate at high temperature to be used for upgrading existing lines. Materials have been developed in order to limit the sag in high temperature ranges, formed wires have been introduced to reduce wind pressure on conductor as well as susceptibility to vibration. Special treatments of conductors are developed for audible noise reduction.

New types of conductor features in various aspects, such as high temperature operation, annealed aluminium conductors steel supported (ACSS) and conductors with composite cores are on the market. CLC/TC 7X will face the challenge to develop the product standards including performance and test requirements to assist electrical utilities to procure and operate such conductors.

B.4 Market trends

The main function of overhead electrical conductors is to transmit electricity to customers on the premise of safety and environmental protection. The mostly used conductor type is the ordinary aluminium conductor steel reinforced (ACSR) nowadays. The conductor types as per EN 50182 can meet the requirements of the most transmission line projects. However, conductors with higher reliability, conductivity and capacity as well as higher economical performance have already been introduced in the market. The features of these new conductor types (see B.3 above) lie in new materials and techniques. CLC/TC 7X has to be prepared to develop and publish new standards in order to meet the changes regarding conductor types used.

B.5 Ecological environment

The main components of bare conductors are aluminium, copper and steel. All these materials are fully recyclable and with very little impact on the environment. Scrap value of bare conductors is very high which ensure 100% of recycling. Corona effects, audible noise and radio interference have to be concerned more when developing EHV and UHV transmission lines.

By providing standards of overhead electrical conductors with higher conductivity and capacity, CLC/TC 7X can contribute to electrical loss reduction in the power transmission grid. Electrical loss reduction has the effect of carbon emission reduction.

B.6 Involvement of societal stakeholders

The societal stakeholders are generally the end users of electricity, safety and health authorities and environmental protection organizations. They are interested in an optimum management of natural resources, reduction of losses and minimization of emission and construction costs. Societal stakeholders are involved via the membership of safety and health authorities in the National Committees.

B.7 Involvement of SMEs

CLC/TC 7X experts also come from small and medium sized enterprises (SME) such as manufacturers, consultants and designing and/ or building companies. Involvement of SMEs is ensured via their active membership in National Committees.

C System approach aspects

CLC/TC7 will actively continue to promote the establishment of liaisons to other committees:

- CLC/TC 11 Overhead lines
- CLC/TC 86A Fibres and cables.

D Objectives and strategies (3 to 5 years)

Objectives

1. Meeting the time frame for the standardisation work as given by CENELEC
2. Ensure the work is prioritised in relation to the available resources
3. Keep CLC/TC 7X standards up to date to reflect new customers requirements and changing technologies

Strategies

1. Encourage convenors, project leaders and experts to use the collaboration tools for planning work and meetings
2. Monitor the market and technology trends to assist the development of standards
3. Strong co-operation with IEC/TC 7

E Action plan

1. Prepare and circulate a list of all European comments compiled on the IEC 62641 final draft
2. Submit the list of all European comments to IEC/TC 7
3. Strong co-operation with IEC/TC 7 in the project IEC 62774 (coated metallic wires) with the target of harmonisation with EN 50189 (zinc coated steel wires) and parallel voting process

F Useful links to CENELEC web site

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

http://www.cenelec.eu/dyn/www/f?p=104:7:4020718039856363::::FSP_ORG_ID:11507

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