SMB/3617/R

STRATEGIC POLICY STATEMENT

IEC/TC or SC	Secretariat	Date
55	USA	2007-10-29

Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

Title of TC
Winding wires

A. Background

Technical Committee N° 55 was created in 1962 and has met regularly to develop and maintain standards for winding wires.

Scope: To prepare international standards for wires for electrical winding, irrespective of conductor material, shape, size, or type of covering, taking into account the needs in all fields of electrical engineering.

Working Groups: MT1

Participating (P) Members: AT, CN, FR, DE, IN, IT, JP, PL, RO, RU, ES, SE, UK, US
Liaisons: TC 91, TC 96, TC 108, TC 112

B. Environment

B.1 Business environment

The winding wire industry is a mature industry, one that is evolving to meet the demands of expanding applications of its products. Present standards reflect the consensus of the members for the technology and materials represented. Changes are based on new technology as they apply to methods of test and material for products and packaging, new product designs, or in addressing environmental and health considerations. Winding wires are used widely throughout a broad spectrum of electrotechnical industries mainly for creating electromagnetic fields and transforming electrical energy. The range of applications of winding wires extends from the use of extremely fine wires for electronics and telecommunications applications, to the use of large insulated and covered wires for large motor and power transformation industries. Demand and use of winding wires is slowly increasing as industrialized nations recover from declining economies, and demand for electricity in developing nations grows.

B.2 Market demand

The Committee will analyze and incorporate in its standards, the trends and changes in market demand for all types of winding wires traded between countries.

One aspect of actual market demand concerns the production and standardization of special insulated conductors for safety applications, presenting zero defects in the insulation, such as the conductors provided with “basic insulation” instead of the usual “functional insulation” of the enamelled wires. This particular type of insulated conductors can be produced both as enamelled wire with special technology, and as extruded wire.

The scope of this new product is to be applied in safety electrical equipment (transformers, motors), usually with an operating voltage of 300 V, in conformance with the insulation properties requested for the safety equipment.

IEC TC 55 has approved new work, proposing specifications and test methods developed by the

German National Committee, concerning zero-defect enamelled wires. TC 55 expects to address documents concerning extruded wires in the future.

B.3 Trends in technology and trade

The winding wire industry is a very mature one, because winding wires are commodities. This is because in the present day market, the winding wire industry is present and well developed practically everywhere in the world.

Winding wires are not “products, but semi-finished materials used by customers as materials in electrical equipment for creating electromagnetic fields and transforming electrical energy.

The sustainability of the market is difficult and very linked with the fluctuations of general economic trends. Since the winding wire industry is strongly connected with the trends of end user markets (automotive, domestic appliances, electrical rotating machinery, transformers, other electrical equipment), the particular technical demands of the end users are very important on the market. As such, IEC/TC 55 strives to maintain a cooperative relationship with main end user representatives on the Committee, in order to open new scenarios in the future of the industry, to:

1) Maintain an awareness of new trends in relevant technology to the winding wires industry; and
2) Support the use of environmentally sound materials and processes in the production and use of winding wires, e.g. through the standardization of special alloys (for soldering the enamelled wires) not containing lead or other potentially hazardous metals.

Ongoing participation in the work of the Technical Committee and its Working Group by producers, suppliers and users is highly encouraged. Increased activity toward environmental protection could pose significant difficulties on the winding wire market, particularly in Europe, due to stricter regulations concerning NMP (N-Methylpyrolidone) and other solvents and components of insulating varnishes, because these are not replaceable based on existing electrical and electronic equipment production practices. TC 55 actions to take place:

1) Support test methods respecting environment protection and human health.
2) Collaborate with the electric and electronic equipment industry, in order to promote the use of winding wire that is produced using varnishes not containing NMP or other suspected solvents.
3) Collaborate with the chemical industry in order to find alternative solvents and components not containing NMP or other suspected solvents.
4) Discuss with the appropriate authorities to postpone for the time being, the issuing of regulations for which compliance is not possible.

B.4 Ecological environment

TC 55 intends to give due consideration to the effects that any standard it publishes and maintains may have on the environment. Particular attention and decisions have been taken in the preparation of test methods involving possible dangers to the test equipment operators, including the use of lead in soldering tests, and of freon and oils in chemical tests. These methods provide precautions relating to exhaust fumes and hot temperatures.

In recent years, with the increased cost of copper, customers have attempted to limit their costs by reducing conductor sizes to those below established wire cross-sectional area tolerances. TC 55 strongly recommends the manufacture of energy efficient equipment, and for manufacturers of electrical and electronic equipment to maintain technically correct designs in order to avoid excessive heat dissipation over the life of the equipment, to sustain protection of the environment and energy savings.

TC 55 is currently surveying its members on:
1) new rules and regulations to avoid possible danger from test equipment and test operations
2) the most common lead free solder alloys used around the world.
3) new alternative refrigerants to R22 that provide necessary precautions in favour of the environment and human health.

TC 55 will also consider future amendments to standards for winding wire spools to encourage recycling. TC 55 regularly takes into account, the recommendations of IEC Guide 109. Since the main work of the Committee is to develop specifications that define the performance properties of winding wires, users are provided with the information needed to select a type of wire that both meets the appropriate functional requirements and has the least impact on the environment during processing or end use. In the broader sense, the Committee takes into consideration, the consequences of its decisions upon human health and wellbeing, energy efficiency and renewable energies.

C. Work programme

C.1 Current work

A Programme of Work is firmly established, with each item of the Programme of Work assigned to a Project Leader. The status of projects is reported at each Working Group meeting. A completion date is listed for each project and updated for each meeting. Completion dates are based on priority, market relevance and requirements of the ISO/IEC Directives.

The Programme of Work is comprised of three basic areas:
1) New work involving new standards or new parts to existing standards initiated by National Committees or Working Group experts; and

2) Revision, modification or review of existing standards. This area is assigned by the TC 55 Secretary and is based upon the guidelines established in Section E, Maintenance Cycles (below).

3) Collaboration with parallel committees will lead to the evaluation and qualification of new electrical insulation materials and systems, with positive implications on winding wires insulation, for instance on the point of view of the analysis and determination of components.

C.2 Resources/infrastructure needed

The work and efforts of Working Group No. 1 are dependent upon dedicated experts. Ongoing participation by these experts is required to ensure the continued productivity of this group. The work and efforts of the new Working Group No. 2 will be dependent on the selection of experts in packaging of winding wires, and meeting mainly through teleconferences and web conferencing tools.

C.3 Safety aspects (only for committees which do not have a reference to safety in their scope)

D. Future work

Consideration should be given for new technologies, user requirements and environmental or economic influences. In an effort to improve the application and ease of use of the standards developed by the Committee, the structure of these standards is subject to review (the most recent restructuring occurred in 1990). Any restructuring shall be done within the context of ISO/IEC Directives and incorporate user input.

Another concentration of work is in harmonization efforts, to incorporate new or modify existing winding wire test methods, which will better satisfy more market areas so that the IEC 60851 series of standards is more broadly accepted and used.

Going forward, it is important for TC 55 WG1 to focus on investigating the possibility to produce and standardize special enamelled wires having zero defects in the electrical continuity test. Transformer producers have requested this special wire for safety applications. Also an effort toward the standardization of special insulated (extruded wire) is in progress.

E. Maintenance cycle				
Publication no.	**Date of publication**	**Review date**	**Maintenance result date**	**Responsibility (Maintenance Team)**
60172	1997	2008	2009	MT1
60264-1	1968	2006	2007	MT2
60264-2-1	1989	2008	2010	MT2
60264-2-2	1990	2007	2009	MT2
60264-2-3	1990	2007	2009	MT2
60264-3-1	1999	2009	2011	MT2
60264-3-2	1990	2009	2011	MT2
60264-3-3	1990	2007	2009	MT2
60264-3-4	1999	2009	2011	MT2
60264-3-5	1999	2009	2011	MT2
60264-4-1	1997	2007	2009	MT2
60264-4-2	1992	2007	2009	MT2
60264-5-1	1997	2008	2010	MT2
60264-5-2	2001	2010	2012	MT2
60317-0-1	2000	2005	2007	MT1
60317-0-2	2000	2008	2010	MT1
60317-0-3	2000	2005	2007	MT1
60317-0-4	2000	2007	2009	MT1
60317-0-5	2000	2009	2011	MT1
60317-0-6	2001	2009	2011	MT1
60317-1	1997	2007	2009	MT1
60317-2	2000	2010	2012	MT1
60317-3	1997	2008	2009	MT1
60317-4	2000	2010	2012	MT1
60317-7	1997	2008	2009	MT1
60317-8	1997	2008	2009	MT1
60317-10	1997	2008	2009	MT1
60317-11	1999	2008	2011	MT1
60317-12	1997	2007	2009	MT1
60317-13	1997	2007	2009	MT1
60317-14	1997	2007	2009	MT1
60317-15	1997	2007	2009	MT1
60317-16	1997	2006	2008	MT1
60317-17	1997	2007	2009	MT1
60317-18	1997	2007	2009	MT1
60317-19	2000	2010	2012	MT1
60317-20	2000	2010	2012	MT1
60317-21	2000	2010	2012	MT1
60317-22	1997	2007	2009	MT1
60317-23	2000	2010	2012	MT1
60317-24	1997	2007	2009	MT1
60317-25	1997	2007	2009	MT1
60317-26	1997	2007	2009	MT1
60317-27	1999	2009	2011	MT1
60317-29	1997	2007	2009	MT1
60317-30	1997	2007	2009	MT1
60317-31	1997	2008	2009	MT1
60317-32	1997	2008	2009	MT1
60317-33	1997	2008	2009	MT1

Publication no.	Date of publication	Review date	Maintenance result date	Responsibility (Maintenance Team)
60317-34	1997	2007	2009	MT1
60317-35	2000	2010	2012	MT1
60317-36	2000	2010	2012	MT1
60317-37	2000	2010	2012	MT1
60317-38	2000	2010	2012	MT1
60317-39	1997	2012	2014	MT1
60317-40	1997	2012	2014	MT1
60317-42	1997	2007	2009	MT1
60317-43	1997	2007	2009	MT1
60317-44	1997	2007	2009	MT1
60317-46	1997	2010	2012	MT1
60317-47	1997	2010	2012	MT1
60317-48	1999	2009	2011	MT1
60317-49	1999	2009	2011	MT1
60317-50	1999	2009	2011	MT1
60317-51	1999	2009	2011	MT1
60317-52	1999	2009	2011	MT1
60317-53	1999	2009	2011	MT1
60317-54	2001	2008	2013	MT1
60851-1	1996	2007	2009	MT1
60851-2	1997	2007	2009	MT1
60851-3	1997	2006	2009	MT1
60851-4	1997	2007	2010	MT1
60851-5	1997	2005	2008	MT1
60851-6	1997	2007	2010	MT1

Name or signature of the secretary
M LEIBOWITZ