Title of TC
Solid Electrical Insulating Materials

A Background
The history of TC15 reflects in many ways the dynamics of the IEC in its search for pertinence and value to users of insulation materials. Though over the years other committees have been created to address various aspects of insulation, TC15 retains its heritage as one of the oldest committees on insulating materials and their testing.

During its tenure, the TC15 committee has watched the ebb and flow of groups seeking to systematize or organize evaluation of electrical insulation to reflect then contemporary management theories or organizations. TC15 continued to grow responding to industry needs by creating subcommittees to address short time tests, endurance tests, flammability and materials specifications that eventually achieved TC status in their own right. As a result, by the end of the 20th Century, TC15 had shrunk to two subcommittees: 15C – material specification and 15E – short and long term endurance testing.

In 2005, in response to the need to consolidate the coordination of testing materials and systems, then located in TC98 and SC15E, a single technical committee, TC112, was established. The remaining element of TC15 -- SC15C – was elevated to full Technical Committee status and responsible for solid electrical insulating materials with the following scope:

'To prepare international standards including specifications for solid electrical insulating materials alone and in simple combinations. This includes coatings which are applied in the liquid state but cure to solids, such as varnishes and coatings.'

Note: TC15 strictly understands "simple combination" as insulation materials (e.g. combined flexible materials according to IEC 60626) and not as combinations of insulation materials due to the manufacturing process of electrical devices. This does not exclude that during testing it might be necessary to include electrodes on specimens of material.

B Business Environment
B.1 General
Solid electrical insulating materials cover the whole range of materials starting from glass and ceramic, sleevings, paper, and press boards, films and laminates, mica products, tapes, and varnishes and resins. Insulating materials are used in the field of electrical power generation and distribution, in electrical motors and transformers, in all kinds of electrical and electronic appliances and equipment. The appropriate selection and use of insulating materials enhances the reliability and safety of electrical equipment. With the materials and user technologies well-established and globally similar, a relatively small number of manufacturers, the most important of which are multinational companies, produce basic materials which are sold through local and regional distributors and fabricators. The market for these insulating materials exceeds 1000 Million
US$ per year. Innovation is driven by manufacturers’ efforts to better serve specific market segments.

B.2 Market demand
The standards of TC15 are widely used in the IEC. The specifications are the basis for commercial definitions in trade. Customers of TC15 reside in all parts of the supply chain, but are primarily insulating materials manufacturers, equipment manufacturers and certain materials specifiers. Since the standards in the range of TC15 are widely used, regular maintenance is necessary. The successive development of new materials or improved properties of materials requires additionally a continuous monitoring of the market in order to offer the appropriate standards.

B.3 Trends in technology
The steadily increasing demand for electrical products throughout the world is matched by the increasing consolidation and mergers within industry. And with trade becoming more global, TC15 faces an increasing demand for the international standardisations within its scope of products.

Most important insulation uses are relatively similar throughout the world, with frequent development of specialized variants of existing insulation materials and components. While Markets are stable, technology is changing because of the need to meet climate change and facilitate recycling.

B.4 Market trends
Because engineering knowledge is widely communicated, international trade in equipment using electrical insulation products covered by TC15 standards is widespread and will likely continue. However, many important materials are proprietary to one or a few large multinational manufacturers and are made predominantly in a few countries and shipped throughout the world. This factor underscores the users’ desire that the product meet widely-accepted standards with minimum testing and qualification costs.

B.5 Ecological environment
Manufacturers are pressed to reduce waste, volatile solvents, and toxic chemicals, since most insulating materials use petrochemicals, polymers, and persistent, may hazardous raw materials and intermediates. Standards developed in the scope of TC15 consider this wherever possible.

C System approach aspects
TC15 publishes specifications for widely used electrical equipment. All electrical systems require insulation and most use some materials covered in the TC15 compendium. The System approach relevance of TC15 is as follows:

Systems Committees
TC2 Electrical accessories
TC14 Power transformers
TC23 Printed circuits
TC52 Rotating machinery
TC96 Small power transformers
TC112 Evaluation and qualification of electrical insulating materials and systems
D Objectives and strategies (3 to 5 years)
Strategy: Conduct periodic systematic review of the 160 documents issued by TC15 to ensure currency and value to all using entities

Objective 1: Engage in on-going monitoring and review of developing industrial technologies and revise TC15 standards accordingly or introduce new standards.


E Action plan
1) Initiate review of committee documents with an MRD of 2013 and, if appropriate, begin revision and approval process when technology changes or other modification are required.

2) Initiate review of committee documents with an MRD of 2014, and, if appropriate, begin revision and approval process, when technology changes or other modifications are required.

3) Initiate review of committee documents with an MRD of 2015, and, if appropriate, begin revision and approval process when technology changes or other modifications are required.

4) Initiate review of committee documents with an MRD of 2016, and, if appropriate, begin revision and approval process when technology changes or other modifications are required.

F Useful links to IEC web site
TC 15 dashboard giving access to Membership, TC/SC Officers, Scope, Liaisons, WG/MT/PT structure, Publications issued along with their Stability Dates, Work Programme and similar information for SCs, if any.

Name or signature of the secretary
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