



	IEC/TC or SC 101	Secretariat Germany	Date 2006-11
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Title of TC Electrostatics

A. Background

TC 101 was established in January 1996 as the continuation of SC 15D created in 1990. TC 101 has a horizontal safety function for part of its activities as given in the scope.

Scope

Standardisation in the field of electrostatics to provide general guidance on

- test methods to evaluate the generation, retention and dissipation of electrostatic charges;
- ascertaining the effect of electrostatic discharges;
- methods of simulation of electrostatic phenomena for testing purposes;
- requirements for design and implementation of handling areas or procedures, equipment,
- and materials used to reduce or eliminate electrostatic hazards or undesirable effects.

Limitations and exclusions:

The simulation of electrostatic discharges applied to powered electric and electronic equipment, systems and installations which is covered by TC 77.

Horizontal safety function:

To specify methods of test and relevant equipment to evaluate generation, retention and dissipation of electrostatic charges on materials.

Publications issued

The reference number for TC101's publications is IEC 61340 and currently there are :

- International standards – 8
- Technical specifications – 2
- Technical reports (Informative) - 1

Working Groups:

WG5: Protection of electronic devices against static electricity.

WG6: Test methods for simulation of electrostatic discharge events.

Joint Working Group

JWG7: Electrostatic properties of flexible intermediate bulk containers (FIBCs) - Test methods and requirements. Liaison partner is ISO/TC122/SC3 operating under Mode 5.

Project teams

PT 61340-1: Guide to the principle of electrostatic phenomena

PT 61340-4-6: Electrostatics – Part 4-6: Standard test methods for specific applications – Test methods for electrostatic safety of intermediate bulk containers (IBC)

Strategic Planning Group:

TC 101 has established a Strategic Planning Group (SPG) for Electrostatics consisting of TC 101 officers and Convenors. Representatives from interested equipment and material TCs are invited to cooperate.

Projects in development:

Currently the work programme consists of 11 work items, 3 related to new work, 4 to maintenance and 4 at PWI stage.

Liaisons:

TC 101 has liaisons with
IEC/TC 31, IEC/TC 44, IEC/TC 47, IEC/TC 77, SC 77B, TC 112
ISO/TC45, ISO/TC61, ISO/TC122/SC3, ISO/TC219.

Membership:

19 P-members: BE, CA, CH, CN, CZ, DE, ES, GB, FI, FR, IT, IL, JP, NL, PL, RO, SE, US, KR
11 O-members: AT, AU, BG, DK, NO, PT, CS, TH, TR, UA,, ZA

B. Environment**B.1 Business environment**

Electrostatic phenomena are in many cases unexpected and may, if undesirable, require the use of expensive preventative measures. They arise primarily because of the charge retention properties of insulating materials. If electrostatic phenomena are neglected then electronic devices can be damaged, unsuspecting people can be distracted or otherwise unsettled, and the risk of explosions in flammable atmospheres can be increased. The extent of electrostatic effects depends not only on the nature of materials or the construction of devices, but also on the environment and the expertise and training of the persons who handle those materials or devices.

The control of electrostatic phenomena requires a good understanding of the causes of problems. Standards that merely prescribe construction principles are in most cases not sufficiently helpful because unintentional changes in peripheral conditions can reduce the benefit of preventative measures taken. Therefore electrostatic experience is often described in the form of Technical Reports.

B.2 Market demand

Both equipment and material TCs and testing laboratories should initiate and/or use TC 101 standards to evaluate acceptance of new devices and/or materials for trouble free use. Liaison is considered to be the best method of co-operation. Existing reports will be converted to standards where possible. Device manufacturers and users should use materials and handling procedures defined in the TC 101 standards to reduce or eliminate electrostatic damage.

B.3 Trends in technology and trade

The accelerating use of plastic materials instead of conductive metals tends to increase electrostatic problems, unless the plastics contain conductive additives. As the size of electronic devices decreases, some devices inherently become more sensitive to electrostatic damage. Changes in technology, techniques or additional precautions are needed to prevent such damage. These are in the role of TC 101.

B.4 Ecological environment

TC 101 writes test methods, evaluation and static avoidance procedures; consequently their impact on the environment is small.

C. Work programme**C.1 Current work**

IEC 61340-1 TR Ed. 1 – this will give an introduction to the principles, relevance and application areas of electrostatic phenomena. This project is currently at the PWI stage due to lack of resources.

IEC 61340-1-2 Ed. 1 – the project was deleted

IEC 61340-3-1 Ed. 2 – at the FDIS stage

IEC 61340-3-2 Ed. 2. – at the FDIS stage

IEC 61340-3-3 Ed. 1 – this is at the PWI stage and is to be handled by the proposed JWG with TC47.

IEC 61340-4-2 Ed. 2 – at the PWI to allow correlate available data in this area
 IEC 61340-4-4 FIBC IS was published
 IEC 61340-4-6 Ed. 1 – at the A2CD stage to developed in conjunction with IEC 61340-4-4.
 IEC 61340-5-1 and -5-2 Ed. 2 – previously these publications were Technical Specifications. IEC 61340-5-1 is now in the maintenance programme to be converted into an International Standard. IEC 61340-5-1 will be considerably shortened and simplified. IEC 61340-5-2 will be expanded into a Technical Report – a guidance document containing principles, materials and techniques and other considerations to be taken into account when implementing IEC 61340-5-2.
 IEC 61340-5-3 - at the PWI stage
 IEC 61340-6-1 - new project was created

C.2 Resources/infrastructure needed

The Strategic Planning Group was set up to make recommends to TC101 for strategic directions, use of resources, and planning of the work programme. It will assess and propose priorities covering those market/industry needs which can benefit from TC101's expertise to specify test methods and give general guidance to prevent the high costs of dealing with the negative effects of electrostatic problems.

D. Future work

In the short to medium term the highest priority is given to achievement of the 61340-5-1 Standard and its User Guide 61340-5-2. This will also require progress on related projects 61340-5-3 . We anticipate that during the development of 61340-5-1 and -5-2, related test methods currently described in the existing -5-1 Technical Report (and some new test method requirements) will be identified for development as additional projects.

E. Maintenance cycle

Publication no.	Date of publication	Review date	Maintenance result date	Responsibility (Maintenance Team)
IEC 61340-2-1 Ed. 1	2002-06-14	2006	2012	8
IEC 61340-2-2 TR Ed.1.0	2000-07-31	2006	2012	8
IEC 61340-2-3 Ed.1.0	2000-03-03	2006	2012	8
IEC 61340-3-1 Ed. 1.0	2002-03-05	- 1)	2007	6
IEC 61340-3-2 Ed. 1.0	2002-03-25	- 1)	2007	6
IEC 61340-4-1 Ed.2.0	2003-12-11	2008	2011	
IEC 61340-4-3 Ed.1.0	2001-08-27	2007	2011	
IEC 61340-4-4 Ed. 1.0	2005-10-13	2007	2010	
IEC 61340-4-5 Ed. 1.0	2004-07-06	2008	2009	
IEC 61340-5-1 TS Ed.1.0	1998-12-15	MWIP 2)	2006	5
IEC 61340-5-2 TS Ed.1.0	1999-02-26	MWIP 2)	2006	5

- 1) Under review by the JWG between TC 47 and TC 101
- 2) MWIP – Maintenance work in progress

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