



STANDARDIZATION OF ENVIRONMENTAL ASPECTS FOR ELECTRICAL AND ELECTRONIC PRODUCTS

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BUREAU OF INDIAN STANDARDS



- **The National Standards Body of India**
- **Bureau of Indian Standards (BIS) took over work of Indian Standards Institution (ISI) through enactment of BIS Act (1986) by the Indian Parliament**
- **ISI was set up in 1947 as a registered society, under a Government of India resolution.**



Prime Minister Jawaharlal Nehru Lays the Foundation Stone of the New Building of the ISI on 21 August 1954. The Political Union, the Press Committee, Shri S. T. Chakravartulu, Secretary and Chairman of Council of Ministers, Government of India, and President ISI, and Shri. Sri Ram, Secretary, ISI (On Extreme Left)

Indian Standards Institution
1947

BIS Act
1986

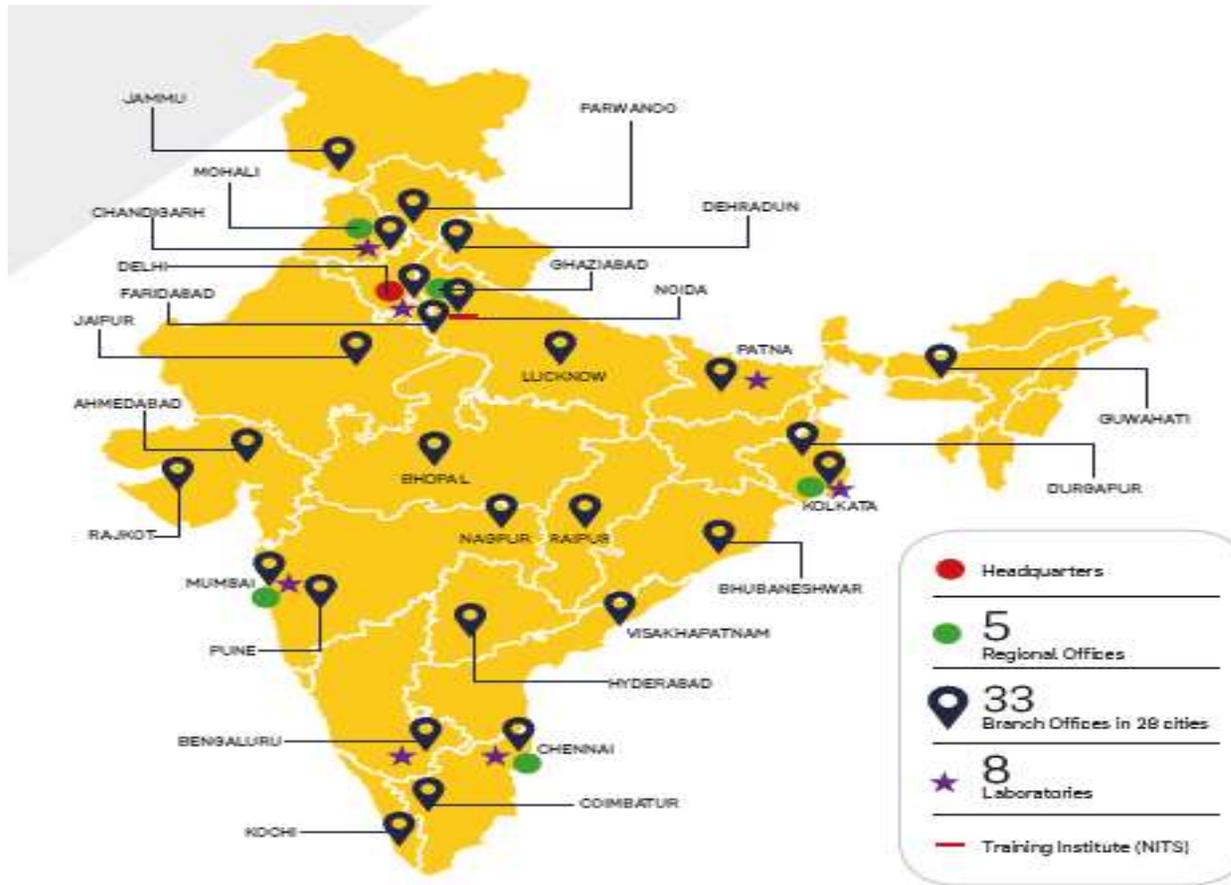
BIS Act
2016

The Prime Minister Pt. Jawahar Lal Nehru performing the foundation stone laying ceremony of the Indian Standard Institution near Mathura Road Delhi on 21.8.1954 standing on his left are : Shri T. T. Krishnamachari the then Minister of Commerce and Industry and Shri Sri Ram alongwith Dr. Verma.

- **The Indian Standards Institution (ISI) founded in 1947**
- **BIS Act 1986 gave statutory status to BIS**
- **BIS Act 2016 makes BIS National Standards Body of India**



OUR PRESENCE



OUR VISION

Bureau of Indian Standards aims to satisfy the customer needs for quality of goods and services through standardization and quality control. The Indian Standards also lead to industrial growth, quality production and competitive efficiency in the country, and give Indian products a competitive advantage in an increasingly global marketplace.



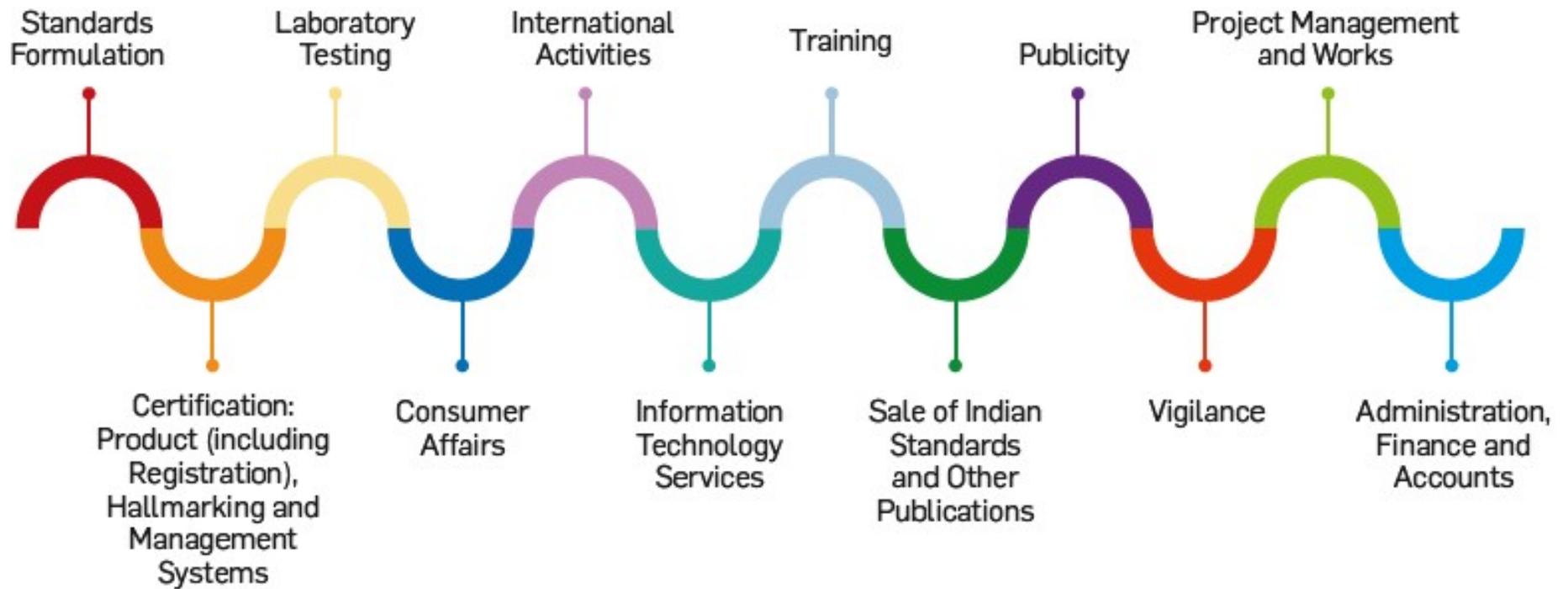
OBJECTIVES



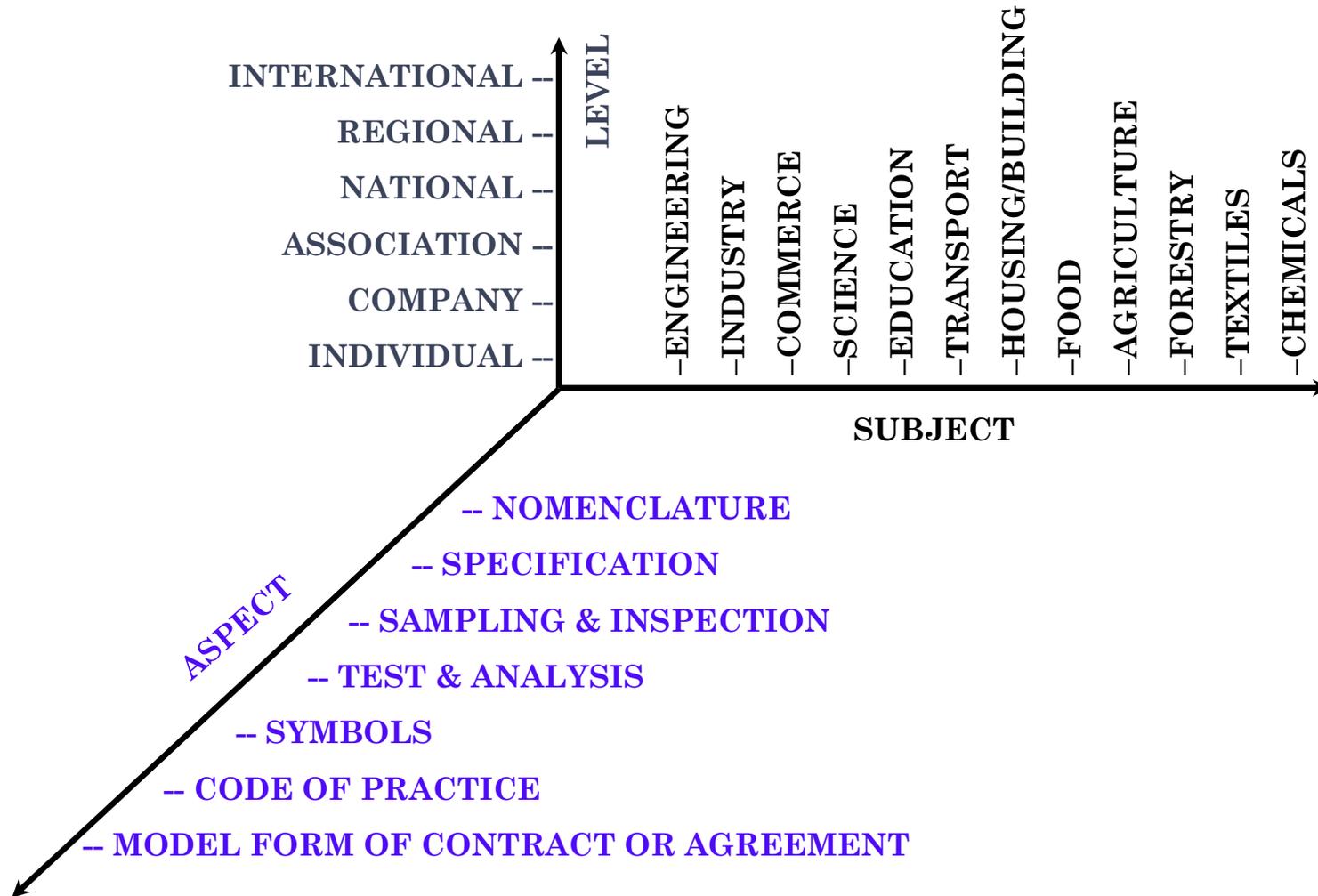
Harmonious development of activities of standardisation, marking and quality certification of goods made in India.

Thrust to standardisation and quality control for growth and development of industry and meeting consumer needs.

ACTIVITIES



STANDARDIZATION SPACE



Areas of Standardization

Chemical

Civil Engineering

Electronics and
Information
Technology

ELECTROTECHNICAL

Food and
Agriculture

Management and
Systems

Mechanical
Engineering

Medical Equipment
and Hospital
Planning

Metallurgical
Engineering

Petrochemical,
Coal & Related
Products

Production and
General
Engineering

Textiles

Transport
Engineering

Water Resources

Services Sector



STANDARDIZATION SET UP

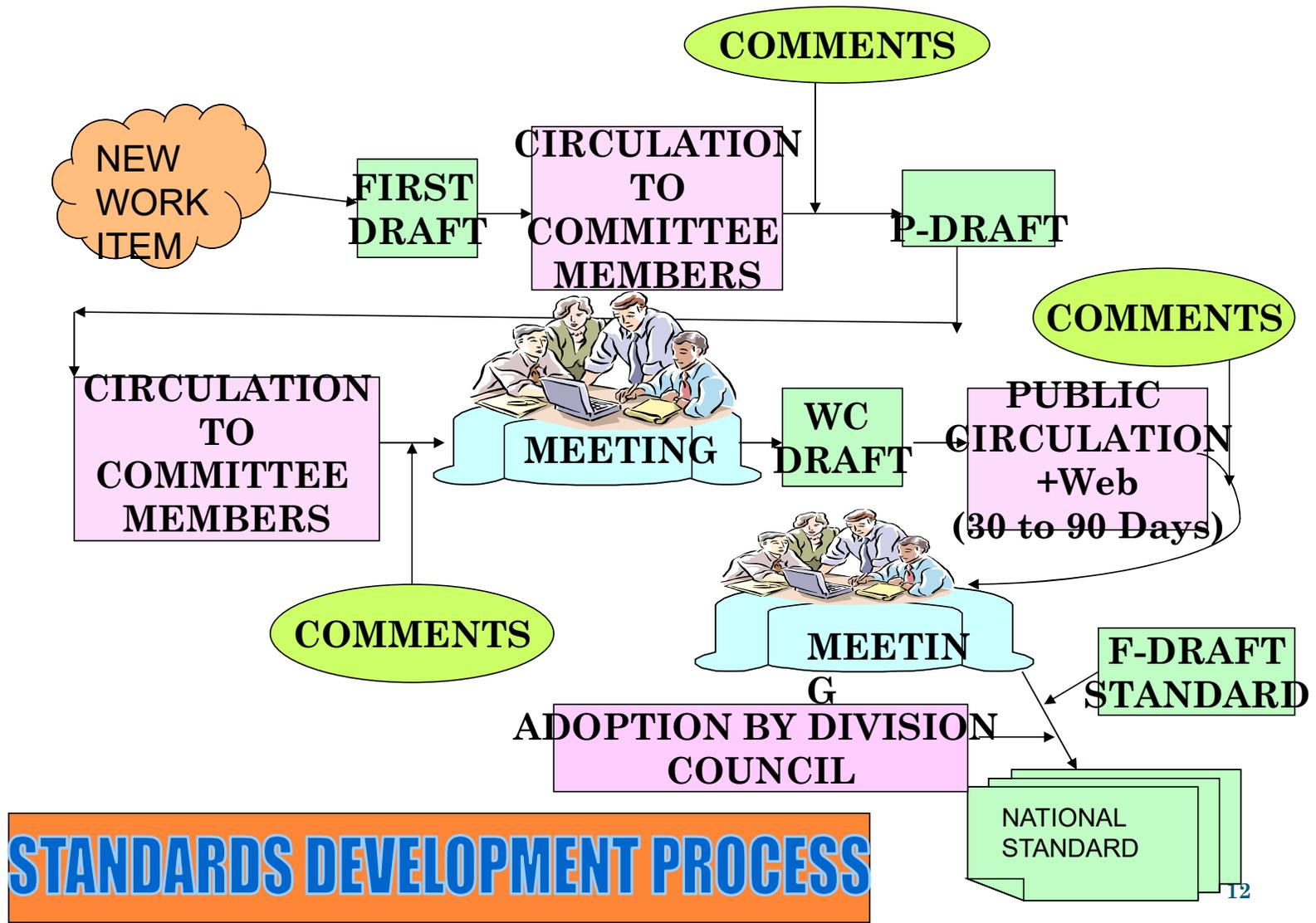


- **Standard formulation activity of Bureau is functioning under Standard Advisory Committee.**
- **There are 15 Technical Sectors under SAC and each of these sector has a Division Council (CED, ETDC, CHDC etc.) with more than 842 Committees/Panels involving more than 10000 Experts having formulated more than 19000 standards**



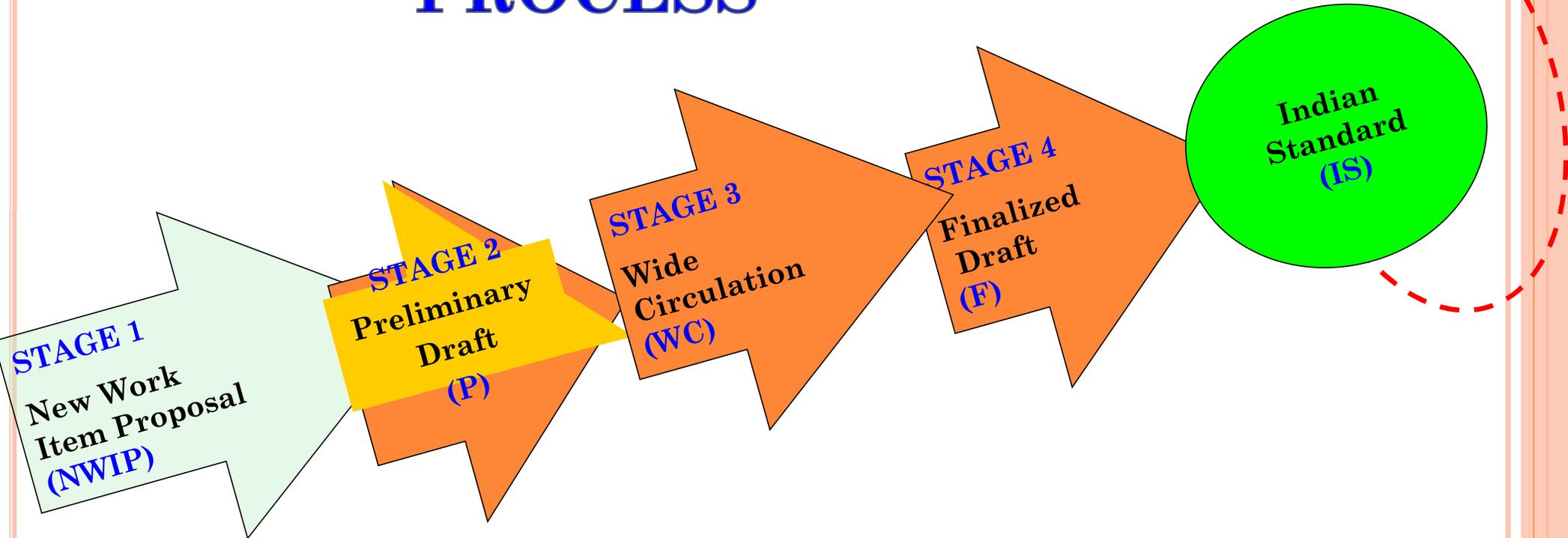
COMPOSITION OF STANDARD FORMULATION COMMITTEE





STANDARDS DEVELOPMENT PROCESS

STANDARDS DEVELOPMENT PROCESS



Stage 2 : Building consensus among committee members

Stage 3: Building national consensus

STANDARDS ARE DEVELOPED WITH FOLLOWING IN MIND



Safety

Ease of use and adaptability

Simple Technology

Value for money products

Energy Efficiency &
Environment

ELECTROTECHNICAL DIVISION COUNCIL (ETDC)

- **ETDC is responsible standardization in the field of electrical power generation, transmission, distribution and utilization equipment, and insulating materials, winding wires, measuring and process control instruments and primary and secondary batteries**
- **At present, 44 sectional committees are working under ETDC engaging more than 1600 experts**



LIST OF SECTIONAL COMMITTEES UNDER ETDC

Sl. No	SC NO	SECTIONAL COMMITTEE NAME
1	ETD 01	BASIC ELECTROTECHNICAL STANDARDS AND POWER QUALITY
2	ETD 02	SOLID ELECTRICAL INSULATING MATERIALS AND INSULATING SYSTEMS
3	ETD 03	FLUIDS FOR ELECTROTECHNICAL APPLICATIONS
4	ETD 06	ELECTRICAL INSULATORS AND ACCESSORIES
5	ETD 07	LOW VOLTAGE SWITCHGEAR & CONTROLGEAR
6	ETD 08	HIGH VOLTAGE SWITCHGEAR AND CONTROLGEAR
7	ETD 09	POWER CABLES
8	ETD 10	PRIMARY CELLS AND BATTERIES
9	ETD 11	SECONDARY CELLS AND BATTERIES
10	ETD 12	MEASURING EQUIPMENT FOR BASIC ELECTRICAL QUANTITIES
11	ETD 13	EQUIPMENT FOR ELECTRICAL ENERGY MEASUREMENT AND LOAD CONTROL

Sl. No	SC NO	SECTIONAL COMMITTEE NAME
12	ETD 14	ELECTRICAL WIRING ACCESSORIES
13	ETD 15	ROTATING MACHINERY
14	ETD 16	TRANSFORMERS
15	ETD 18	INDUSTRIAL PROCESS MEASUREMENT AND CONTROL
16	ETD 19	HIGH VOLTAGE ENGINEERING
17	ETD 20	ELECTRICAL INSTALLATIONS
18	ETD 21	ELECTRIC WELDING EQUIPMENT
19	ETD 22	ELECTRICAL APPARATUS FOR EXPLOSIVE ATMOSPHERES
20	ETD 23	LAMPS AND RELATED EQUIPMENTS
21	ETD 25	LIFTS AND ESCALLATORS
22	ETD 28	SOLAR PHOTOVOLTAIC ENERGY SYSTEMS
23	ETD 29	POWER CAPACITORS
24	ETD 30	SURGE ARRESTERS
25	ETD 31	POWER ELECTRONICS

Sl. No	SC NO	SECTIONAL COMMITTEE NAME
26	ETD 32	ELECTRICAL APPLIANCES
27	ETD 33	WINDING WIRES
28	ETD 34	INSTRUMENT TRANSFORMERS
29	ETD 35	POWER SYSTEMS RELAYS
30	ETD 36	TOOLS AND EQUIPMENT FOR LIVE WORKING
31	ETD 37	CONDUCTORS AND ACCESSORIES FOR OVERHEAD LINES
32	ETD 39	FUSES
33	ETD 40	HVDC POWER SYSTEMS
34	ETD 42	WIND TURBINES
35	ETD 43	STANDARDIZATION OF ENVIRONMENTAL ASPECTS FOR ELECTRICAL AND ELECTRONIC PRODUCTS
36	ETD 44	SAFETY OF MACHINERY
37	ETD 46	GRID INTEGRATION
38	ETD 47	RAILWAY ELECTRIC TRACTION EQUIPMENT

Sl. No	SC NO	SECTIONAL COMMITTEE NAME
39	ETD 48	STANDARDIZATION IN THE FIELD OF UHV AC TRANSMISSION SYSTEMS
40	ETD 49	ILLUMINATION ENGINEERING AND LUMINAIRES (NEW COMMITTEE)
41	ETD 50	LVDC POWER DISTRIBUTION SYSTEMS
42	ETD 51	ELECTROTECHNOLOGY IN MOBILITY
43	ETD 52	ELECTRICAL ENERGY STORAGE SYSTEMS
44	ETD 53	STANDARDIZATION OF THE MANAGEMENT OF ASSETS IN POWER NETWORKS



STANDARDIZATION OF ENVIRONMENTAL ASPECTS FOR ELECTRICAL AND ELECTRONIC PRODUCTS

- **The ETD 43 sectional committee on standardization of environmental aspects for electrical and electronic products is responsible for the formulation of necessary guidelines, basic standards, in the environmental area, in close cooperation with electrical and electronic product committees.**
- **India is a Participating member in the corresponding IEC committee IEC/TC 111 ‘Environmental standardization for electrical and electronic products and systems’**
- **Indian Standards published by ETD 43 have been harmonized with corresponding IEC standards**

ETD 43 – STANDARDS PUBLISHED

SI. No.	IS No.	TITLE
1.	<u>IS 16197 (Part 1) : 2014</u>	Determination of certain substances in electrotechnical products Part 1 introduction and overview
2.	<u>IS 16197 (Part 2) : 2014</u> <u>iec 62321-2:2013</u>	Determination of certain substances in electrotechnical products Part 2 disassembly disjointment and mechanical sample preparation
3.	<u>IS 16197 (Part 3 / Sec 1) : 2014</u> <u>iec 62321-3-1:2013</u>	Determination of certain substances in electrotechnical products Part 3 screening Sec 1 lead mercury cadmium total chromium and total bromine using x - Ray fluorescence spectrometry
4.	<u>IS 16197 (Part 3 / Sec 2) : 2014</u>	Determination of certain substances in electrotechnical products Part 3 screening Sec 2 total bromine in polymers and electronics by combustion - Ion chromatography

SI. No.	IS No.	TITLE
5.	<u>IS 16197 (Part 4) : 2014</u> <u>iec 62321-4:2013</u>	Determination of certain substances in electrotechnical products Part 4 mercury in polymers metals and electronics by CV - AAS CV - AFS ICP – OES and ICP - MS
6.	<u>IS 16197 (Part 5) : 2014</u> <u>iec 62321-5:2013</u>	Determination of certain substances in electrotechnical products Part 5 cadmium lead and chromium in polymers and electronics and cadmium and lead in metals by AAS AFS ICP - OES and ICP - MS
7.	<u>IS 16197 (Part 6) : 2018</u> <u>IEC 62321-6 : 2015</u>	Determination of Certain Substances in Electrotechnical Products Part 6 Polybrominated Biphenyls and Polybrominated Diphenyl Ethers in Polymers by Gas Chromatography Mass Spectrometry GC-MS
8.	<u>IS 16197 (Part 7 / Sec 1) : 2018</u> <u>IEC 62321-1 : 2015</u>	Determination of Certain Substances in Electrotechnical Products Part 7 Hexavalent Chromium Section 1 Presence of Hexavalent Chromium Cr VI in Colourless and Coloured Corrosion-Protected Coatings on Metals by the Colorimetric Method
9.	<u>IS 16243 : 2017</u> <u>IEC/TR 62476 : 2010</u>	Guidance for Evaluation of Products with Respect to Substance-use Restrictions in Electrical and Electronic Products

SI. No.	IS No.	TITLE
10.	<u>IS 16244 : 2017</u> <u>IEC 62430 : 2009</u>	Environmentally Conscious Design for Electrical and Electronic Products
11.	<u>IS 16279 : 2018</u> <u>IEC/PAS 62545 : 2008</u>	Environmental Information on Electrical and Electronic Equipment EIEEE
12.	<u>IS 16584 : 2017</u> <u>IEC/TR 62635 : 2012</u>	Guidelines for End-of-Life Information Provided by Manufacturers and Recyclers and for Recyclable and for Recyclability Rate Calculation of Electrical and Electronic Equipment
13.	<u>IS 16587 : 2016</u> <u>IEC/TR 62725 : 2013</u>	Analysis of Quantification Methodologies for Greenhouse Gas Emissions for Electrical and Electronic Products and Systems
14.	<u>IS 16588 : 2017</u> <u>IEC/TR 62726 : 2014</u>	Guidance on Quantifying Greenhouse Gas Emission Reductions from the Baseline for Electrical and Electronic Products and Systems
15.	<u>IS 16862 : 2018</u> <u>IEC PAS 63015 : 2016</u>	Definition of Low-Halogen for Electronic Products

ETD 43 – STANDARDS UNDER DEVELOPMENT

Sl No.	Document no.	Title
1	ETD 43 (11320)	Guidance on material efficiency considerations in environmentally Conscious design of electrical and electronic products
2	ETD 43 (11639)	Determination of certain substances in electrotechnical products Part 7-2 Hexavalent chromium Determination of hexavalent chromium CrVI in polymers and electronics by the colorimetric method
3	ETD 43 (11640)	Determination of certain substances in electrotechnical products Part 8 Phthalates in polymers by gas chromatography-mass spectrometry GC-MS gas chromatography-mass spectrometry using a pyrolyzerthermal desorption accessory PyTD-GC-MS
4	ETD 43 (06835)	Material declaration for products of and for the electrotechnical industry
5	ETD 43 (11319)	Environmental standardization for electrical and electronic Products and systems Glossary of terms

IMPLEMENTATION OF STANDARDS



- **Implementation of standard is very important**
- **Normally standards are voluntary**
- **Select Standards have been made mandatory compliance of BIS Standard mark to protect consumer s' health and safety**
- **133 standards are covered under Mandatory certification**
- **50 standards are covered under Compulsory Registration Scheme**



THANK YOU