INDIAN STANDARDS INSTITUTION (ISI)

SIXTH ANNUAL REPORT

APRIL 1952 — MARCH 1953

19 UNIVERSITY ROAD
DELHI 8

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INDIAN STANDARDS INSTITUTION
1952-53

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THIS REPORT WILL BE PRESENTED BY THE EXECUTIVE COMMITTEE TO THE GENERAL COUNCIL OF ISI AT ITS NEXT ANNUAL MEETING

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SHRI T. T. KRISHNAMACHARI

MINISTER FOR COMMERCE & INDUSTRY, GOVERNMENT OF INDIA, AND PRESIDENT, ISI, 1952-

Shri Tiruvallur Thattai Krishnamachari, born on 26 November 1899 and educated at Madras Christian College, has been conspicuous in the political and economic life of the country for the past quarter century. Entering business in 1921, he was elected representative of the Indian Commerce Constituency to the Madras Legislative Assembly in 1937, where he was in the forefront for his contributions in the legislative and other work of the Assembly during the time of the Congress Ministry. He took keen interest in the Indian mercantile organizations in the Madras State and the economic life of the State in general.

In October 1942, he was elected to the Central Assembly, and after entering the Constituent Assembly of India in 1946, he served as a member of the Drafting Committee for the Indian Constitution.

Shri Krishnamachari was member of the Indian Financial Delegation that visited London in 1948; he specializes in the economic and financial aspects of administration. He was returned to the House of the People from Madras City Constituency in the last general elections. Since May 1952, he is the Minister for Commerce & Industry, Government of India.

Indian Standards Institution can take just pride in having a leader of his eminence and experience as its President.

INDIAN STANDARDS INSTITUTION

GENERAL INFORMATION

Aims and Objects

The Indian Standards Institution was set up in 1947, in pursuance of a decision of the Government of India, for the purpose of preparing and promoting standards for Indian industry. This decision followed upon the recommendations of the Industrial Research Planning Committee (1945), and was welcomed by industry as the fulfilment of a demand, first put forward by the Twelfth Industries Conference held at Lucknow in 1940. The objects of the ISI include the preparation, promotion and general adoption, at the national and international levels, of standards relating to materials, commodities, structures, practices and operations. The ISI aims at rationalization of industry by co-ordinating the efforts of producers and consumers for the improvement of appliances, processes and products. It promotes quality control methods, and provides for the registration of Standard Marks applicable to materials, commodities, etc, conforming to Indian Standards issued by it.

Organization and Work

The overall control of the Institution rests with a General Council (GC), representative of industry, Central and State Governments, scientific organizations, subscribing members and the Division Councils of the ISI. The Executive Committee (EC), appointed by the GC, is responsible for the actual management of the affairs of the Institution. Financial matters are under the purview of a Finance Committee (FC), similarly appointed. The income of the Institution is derived from Government grants from the Centre and the States, membership subscriptions and sale of standards.

In the preparation of standards, the ISI functions through 370 Sectional Committees and Subcommittees, consisting of scientists, technologists and representatives drawn from industrial and Government organizations. These Committees are appointed by the EC or the four Division Councils of the ISI, namely, the Engineering Division Council (EDC), the Textile Division Council (TDC), the Chemical Division Council (CDC) and the Building Division Council (BDC).

Proposals for formulating Indian Standards are normally entertained from the members of the ISI. Every proposal is scrutinized thoroughly, first by the appropriate Division Council and then by the Executive Committee. If the proposal is approved, the Division Council assigns the work to the Sectional Committee concerned with the subject, if one exists, or sets up a new committee.

A Sectional Committee is representative of the various interests concerned, but is weighted in favour of the consumers' interests. The Sectional Committees form Subcommittees, when required, and instruct them to prepare a working document or a draft on the subject. After the draft is approved by the Sectional Committee, it is issued in circulation, for the purpose of eliciting comments, to interested parties in India and abroad. This draft is re-considered in the light of the comments received, and when finalized, becomes a recommendation of the Sectional Committee. It is, then, submitted for approval to the chairman of the Division Council concerned and to the chairman of EC to whom power has been delegated to authorize its publication as an Indian Standard.

Indian Standards are issued after an exhaustive study of the data and literature on the subject, testing in laboratories, discussions in Committees and circulation to interested parties. A period of one to three years may, therefore, elapse from the date that an item is proposed for standardization to the time when the relevant standard is finally printed.

The bulk of the technical work towards the preparation of standards is done by ISI committees. The staff in the ISI Directorate co-ordinates the work of these Committees, undertakes the necessary secretarial duties, ensures that delays are avoided, secures that standards are appropriately examined at each stage of formulation, arranges their publication and promotes their implementation.

Implementation

Out of a total of 372 Indian Standards published up to 31 March 1953, 199 had been adopted by various Government departments for the purpose of making their own purchases. However, despite this acceptance of Indian Standards by the Government, so far as industry and commerce is concerned, their adoption continues to be purely voluntary. Membership of the ISI involves no compulsion to follow Indian Standards, either in manufacture or in making purchases.

In principle, ISI believes that the acceptance of Indian Standards by industry or Government can best be promoted through the intrinsic merit of these standards themselves. The fact that Indian Standards are formulated in collaboration with the largest number of interests concerned should, it is believed, ensure a very wide welcome for these standards. As an aid to industrialists to produce quality goods and for the consumers to recognize them, the ISI has on its programme the establishment of certification marks to be stamped by licensed manufacturers on their goods conforming to Indian Standards under the ISI (Certification Marks) Act, 1952. When it comes into operation, the Certification Marks Scheme would be a boon not only to the industrialists and the

consumers in the country but is expected also to help in strengthening the export trade.

International Sphere

The ISI works not only at the national level, but also co-operates in the work of the standards organizations of overseas countries, and notably in the work of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), two important bodies engaged in international standardization. The ISI is at present an actively participating (P) Member of 48 and an interested (O) Member of 28 ISO technical committees, holding the Secretariats for the Technical Committees on Lac (ISO/TC 50) and Mica (ISO/TC 56).

The ISI co-operates also on the executive level of these two international standardizing bodies. It is an elected member of the governing Council of ISO and the Committee of Action of the IEC, and Dr. Lal C. Verman, Director, ISI, is the elected Vice-President of ISO since 1949.

Membership

The membership of the ISI is open to all organizations and persons interested in the objects of the ISI. There are three categories of membership (i) Sustaining Members and Sustaining Members (Associates), (ii) Ordinary Members, and (iii) Committee Members. The first category is open to all organizations, companies, firms, bodies and technological institutions. The associate membership is limited to firms, companies, etc with an annual business of less than Rs 2,50,000. Individuals interested in the work of ISI can join as ordinary members, while persons serving on the ISI Councils and Committees are classed as committee members. The privileges enjoyed by the members depend upon the class of membership. Members have the right to propose subjects with regard to which standards might be developed, to give evidence before the technical committees, and continuously to receive information concerning the development of standards on subjects in which they are interested.

Publications

Besides the Indian Standards issued from time to time, the ISI Bulletin, which is published once a quarter and contains articles, research papers and other information relating to standardization matters and activities in India and abroad, serves as a useful informative medium for members, subscribers and others.

The ISI also issues an ISI Handbook of Publications giving general information about its organizational set-up and a comprehensive list of Indian Standards with a brief description of each.

ACKNOWLEDGEMENTS

The ISI records with pleasure, gratitude and pride its deep appreciation of the financial support and specialized technical assistance, received during the year, from an increasing circle of its members and other individuals and organizations interested in it. The ISI believes that this pattern of growing co-operative activity is an index of an all-round realization that through standardization lies the road to industrial and trade efficiency, and that, with the support it receives, the ISI is making its vital contribution towards economic advancement of the country. Encouraged by the faith reposed in, and conscious of the expectations from it, the ISI looks forward with confidence to the future of its working in progressive partnership with interests representing trade, industry, science, technology and government.

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SIXTH ANNUAL REPORT

OF THE

INDIAN STANDARDS INSTITUTION

(APRIL 1952-MARCH 1953)

1. GENERAL REVIEW

1.1 Since the inception of the ISI six years ago, the Institution has expanded the field of its activities considerably. From the humble beginnings made in 1947, when only one Division Council was working, the ISI now has four fully constituted Division Councils and a Section, the precursor of a new Agricultural and Food Products Division to be formed in the near future. Two more Sections, of Steel Economy and Statistics, are also to be established shortly. The Certification Marks Scheme based on the ISI (Certification Marks) Act, passed by the Parliament in February 1952, is also a new development which would be put into operation after the necessary rules under the Act are framed and notified by the Government of India. The Scheme should prove a powerful instrument not only for maintaining but also for improving the quality of the indigenous products and raising the general level of production in the country.

1.2 The number of Committees working on different subjects is on the increase, and there are now 370 active Committees and Councils with a membership of nearly 3,750 experts selected from various industries, consumer interests and technologists. The corresponding figures for last year were 300 committees and 2,700 members. The Building Division Council and the Agriculture Section, set up during the year, made considerable headway, the former by setting up 20 Sectional Committees to deal with practically every aspect of the building trade, and the latter by taking up for standardization the subjects of food grain storage structures, pest control products, etc. The other Division Councils also continued to grow. As an index of the increase in the activities, it may be stated that 181 meetings of committees and subcommittees were held during the year, as against 142 meetings last year. During the year, the ISI published 81 new standards, bringing up the total of published standards to 372. In addition, 19 standards were under print, and 93 draft standards had passed the committee stage of finalization by the end of the year. The ISI received increasing support from the various interests in the country as is shown by the increase in the number of subscribing members from 758 to 813. The income from subscriptions alone in 1952 was Rs 2.19 lakhs, which is nearly twice the figure of 1948.

1.3 In the international sphere, the ISI continued to participate actively in the administrative as well as the technical work of the ISO and IEC. India was elected to the governing Council of the ISO from its very beginning in 1947, and continued through re-election to hold that office during the year. Dr. Lal C. Verman, Director, ISI, who was elected as Vice-President of the ISO for the first time in 1949 was re-elected for another term of three years. The meetings of the ISO Technical Committees on Lac and Mica were very helpful in arriving at decisions which would eventually lead to final international agreement on the standards for these materials, and thus smoothen out the many difficulties in the Indian export of these commodities, for which India holds almost a monopoly. An additional responsibility in the international sphere was placed on the ISI by the election of India to the Committee of Action of the IEC for a period of nine years.

2. GENERAL COUNCIL (GC)

2.1 Annual Meeting — The eighth meeting of the GC was held on 27 March 1953, when the President, Shri T. T. Krishnamachari, Minister for Commerce & Industry, reviewed the general progress of work of the ISI during the year.

Lala Shri Ram and Dr. K. S. Krishnan were re-elected as Vice-Presidents for 1953-54, and the representatives of the GC on Executive Committee (EC) and Finance Committee (FC) were also elected. The Director General of Supplies & Disposals — replacing Deputy Director General (Inspection) — and Industrial Adviser (Engineering), Ministry of Commerce & Industry (Development Wing) were co-opted on the GC. The Engineering Association of India, one of the five representatives of Sustaining Members of the ISI on the GC, whose term of office expired on 31 December 1952, was re-elected for a further period of three years. Dr. K. M. Chakravarty, Sindri, was elected to represent Ordinary Members of the ISI on the GC.

The GC sanctioned the budget proposals for 1953-54, along with the revised estimates for 1952-53 (Appendix 14.16). Other business included the approval of certain incidental amendments to the ISI Constitution as recommended by the EC, and adoption of brief reports of overseas tours of Dr. Lal C. Verman, Director, ISI, and Dr. K. L. Moudgill, Deputy Director (Chemicals), both of whom had represented the Indian viewpoint at the meetings of the Technical Committees of the ISO and established contacts with a number of organizations concerned with standardization work.

The composition of the GC as on 31 March 1953 is given in Appendix 14.1 (page 17).

2.2 Executive Committee (EC) — The EC held six meetings during the year dealing with the general administration of the Institution and took decisions on matters referred to it by the

Division Councils. Lala Shri Ram was re-elected Chairman for 1953-54.

The EC approved of the proposal to invite the representatives of the Commonwealth standards organizations to hold a meeting in Delhi to consider co-ordination of certain standards and particularly those involving questions likely to be incorporated in Government regulations and legal instruments, as for example, electrical appliances, electrical cables and electrical equipment for machine tools. It is regretted that the member countries did not find it convenient to undertake the necessary journey during the cold weather, especially as they were to be present in Europe during the summer in connection with the meetings of the ISO Council and ISO Technical Committees. The proposal had, therefore, to be dropped.

Regarding the appointment of Indian delegates or observers to attend meetings of the Technical Committees of the ISO in which India is interested, the Director was authorized to nominate them in consultation with the chairmen of the Standing Working Committees and the Sectional Committees concerned. Further, the EC nominated the Director, Dr. Lal C. Verman, as the official Indian delegate to attend meetings of the ISO Council, the Committee of Action of the IEC and some of the Technical Committees of the ISO and IEC, to be held in various European countries during June and July 1953.

The EC constituted a Subcommittee to consider a proposal for the re-designation of posts and pay scales in the ISI Directorate.

Under a directive from the GC, the EC appointed a special committee to advise the ISI in matters concerning the ISI (Certification Marks) Act which was passed in February 1952. Rules concerning the Certification Marks Scheme have to be framed by the Government of India, but this special committee has been authorized to advise on matters concerning the scheme till it is put into operation after the framing of the necessary Rules by the Government of India.

The EC approved of an arrangement whereby the ISI publications are being supplied free, as required, to the research institutions of the Council of Scientific & Industrial Research. An arrangement for exchange of publications with the Lord Reay Maharashtra Industrial Museum, Poona, was also approved.

The composition of the EC, as on 31 March 1953, is given in Appendix 14.2 (page 18).

2.3 Finance Committee (FC) — The FC held six meetings during the year, two of them jointly with the EC, concerning the financial aspects of the ISI organization.

The composition of the FC, as on 31 March 1953 is given in Appendix 14.3 (page 19).

2.4 Standing Selection Committee (SSC) — Appointments of members of the staff in pay scales exceeding Rs 500/- per month are made by the SSC, which met 13 times during the year and made selections for the various posts. References to these appointments are made in the appropriate section.

3. ISI FIVE-YEAR PLAN

3.1 The Planning Commission has now given its final decision on the various proposals submitted by the ISI as its contribution to the national Five-Year Plan. The Commission has recognized that proper standards are essential for improving the quality of products, especially of raw materials and semi-manufactured goods in which small-scale production prevails in the country. Appreciating that such standards, besides benefiting the domestic consumers, are of great value for the export trade, and that lack of uniformity and adulterations (which are helped by the absence of standard specifications) should be thoroughly eliminated, the Planning Commission have earmarked a sum of Rs 27 lakhs to be given to the ISI for the years 1952-56 for starting a number of new activities as also for accelerating the pace of development of the existing activities.

3.2 In pursuance of these plans, the Building Division Council was inaugurated on 24 April 1952, and has made very considerable progress in organizing the work through 20 Sectional Committees, concerning a large variety of materials of interest to the building industry of the country as also building practices.

3.3 For co-ordinating the national work on electrical standardization with the work of the International Electrotechnical Commission (IEC), the ISI had set up the Indian National Committee of the IEC (INC-IEC) under the Engineering Division in 1950, when the national responsibility for the IEC work was transferred from the Institution of Engineers (India) to the ISI. The association of the ISI with the IEC during the last three years has resulted in increased consciousness on the part of the Indian electrical manufacturing industry and trade for an increased participation in the international work. Though at one time a suggestion was made to establish a new Division in the ISI to deal with electrical engineering, yet the Plan provided for the creation of a small Section in the Engineering Division. This has now been done, and a small staff, consisting of an Assistant Director and a Technical Assistant, has been appointed. The work of this Section is described under appropriate headings in this Report.

3.4 The proposal for the formation of an Agricultural and Food Products Division required consultations between the Ministry of Commerce & Industry on the one hand and the Ministry of Food & Agriculture on the other. As a result of the discussions held in an inter-departmental meeting between the representatives of these two Ministries, the way was paved for the creation of the Agricultural and Food Products Division which would work in co-operation with the various departments of the Ministry of Food & Agriculture. As a first step, an Agricultural Section has been formed in the ISI. It is engaged on the urgent problem of formulation of standards for food grain storage structures and a standard code of practice for the storage, handling and transport of grains.

3.5 It was not found possible to start a separate Steel Economy Section for want of appropriate staff, but by the end of the year a Sectional Committee had been formed under the BDC and the preliminary work for the initiation of the project was under way. The Steel Economy Section is to be entrusted with the work of reviewing the existing standards in the field of structural steel

engineering and laying standards on hot-rolled and cold-rolled steel sections, purlins, typical structure designs, codes of practice for designing steel structures with particular attention to safety factors, and a number of allied problems. It is expected that as a result of the activities of this section, and by implementing the proposals that may be formulated by the experts in the field, an estimated saving of about 25 percent of the total annual requirements of steel would be effected, amounting to an annual saving of Rs 2½ crores, besides conserving the supplies of this material which is in great demand in the country.

3.6 Likewise, the Statistical Section, which is intended to assist in surveys of industries, improvement of sampling procedures prescribed in Indian Standards and study of methods of quality control, could not be started during the year. It is expected that like the Steel Economy Section this section too would commence work early next year.

4. DIVISIONS AND SECTIONS

4.1 General — A brief outline of the work of the various Division Councils and Sections is given in the following paragraphs. The composition of the EDC, TDC, CDC and BDC, as on 31 March 1953, is listed in Appendices 14.4, 14.5, 14.6 and 14.7 (pages 19-24) respectively. Appendix 14.8 (page 26) gives statistics of standards in various stages of preparation, while Appendix 14.9 (page 26) contains a list of new subjects considered for standardization during the year. A comprehensive statement relating to the salient features of the work of various Committees is contained in Appendix 14.10 (page 32).

In Fig 1 are presented graphs indicating the increase in the number of Sectional Committees and Subcommittees, their meetings and membership. Figure 2 shows the growth of draft Indian Standards in circulation and published Indian Standards.

4.2 Engineering Division Council — The EDC held its fifth meeting on 28 March 1953, while the ninth meeting of its Standing Working Committee (SWCE) was held on 20 November 1952.

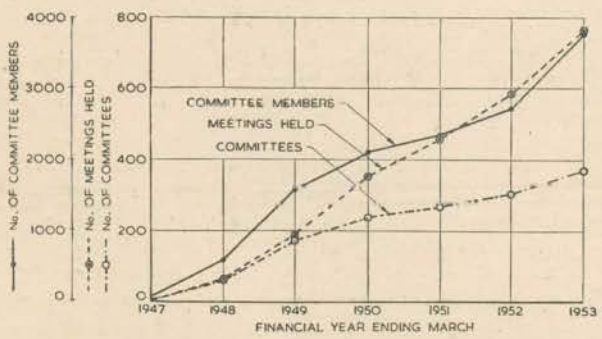

FIG 1 GROWTH OF ACTIVITIES OF COMMITTEES

In a decision of basic importance, the EDC endorsed the British Standard Specification on Unified Screw Thread Systems for the ranges ¼ to 4 in. diameter in the coarse series, ¼ to 1½ in. diameter in the fine series, and from ¼ in. diameter upwards in the special thread series. The Unified Screw Thread System represents the result of a prolonged series of negotiations between Canada, the UK and the USA, for evolving an agreed system of screw threads to facilitate exchange of equipment between these countries. As India is an important customer of these countries for engineering equipment, the adoption of the Unified Screw Thread System as standard for India will, it is believed, help eliminate the present conflicts between the various systems now in use in the country, and bring us in line with the latest practices being steadily introduced in the major producing countries of the West.

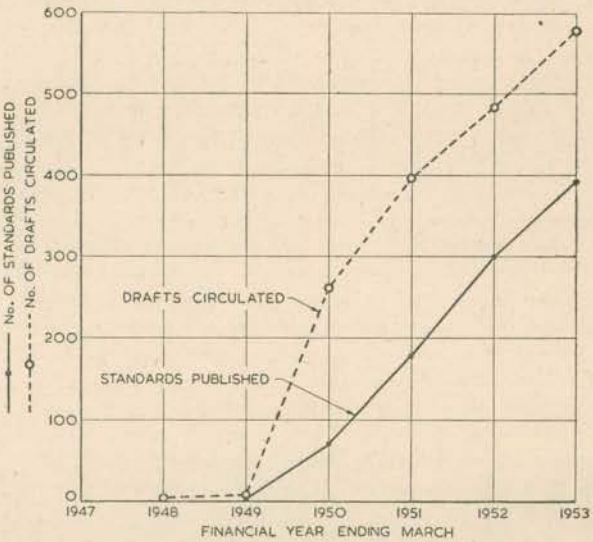

FIG 2 GROWTH OF STANDARDS

The INC-IEC, which works as a Standing Working Committee of the EDC for electrical industries, held its fourth meeting on 14 October 1952. In accordance with the decisions of the Committee, the ISI has now under way a scheme to ascertain, from well-established associations of manufacturers, particulars of products manufactured by their members in conformity with Indian Standards. This investigation will help in finding out how far Indian Standards are actually being adopted by industry.

Another enquiry concerns the manufacture of watt-hour meters and a variety of commonly used electrical instruments. Large quantities are already being manufactured in the country, and it is hoped that standards for such instruments, when formulated, would give a clear lead to the manufacturers.

The work of the INC-IEC on the international level has been mentioned under item **7.3** of this Report.

A brief account of the work done by the Division during the year in different subjects is given below. The subjects under the consideration of the EDC include:

Ferrous Metals; Non-ferrous Metals; Manganese Ore; Mica; Electrical Conductors and Insulators; Electrical Plant and Switchgear; Electrical Accessories; Radio Equipment; Batteries; Refractories; Sports Goods; Bicycles, Bicycle Parts and Accessories; Internal Combustion Engines; Oil-Burning Domestic Appliances; and Hand-Tools.

Ferrous Metals — Specifications for special quality steel sheets used in the manufacture of metal containers, enamelled ware, lanterns, etc, and standards for malleable iron castings were

finalized. On the recommendation of the Tariff Commission, the expanded metal industry was given protection by the Government of India and the Institution was asked to formulate standards. A specification for expanded metal for general purposes was finalized and another for expanded metal for concrete reinforcement was under preparation. Draft specifications for electrical steel sheets, tin-plates, etc, were at various stages of preparation. The possibility of preparing a colour code for the identification of ferrous materials is also being investigated.

Non-Ferrous Metals — Standards for basic non-ferrous metals having already been formulated, standards for products such as structural aluminium alloys, and lead sheets and lead pipes for chemical purposes; chemical analysis of antimony solders, bearing metals, etc, are now being finalized. To minimize further the possibility of arguments between suppliers and purchasers, the more important methods of chemical analysis of metals and alloys were either published or finalized, or were in different stages of development.

Manganese Ore — Manganese ore is one of our more important export commodities, and Indian Standards on metallurgical and battery grades have been published already. The question of preparing standard samples of the ore for use as reference in analyses is now under consideration. This step should eliminate the necessity of obtaining standard samples from abroad.

Mica — The work of the second meeting of ISO/TC 56 Mica is detailed under item **7.1.2**.

Electrical Conductors and Insulators — With the rapid development of power projects in India, electrical conductors have already assumed considerable importance. As the supplies of electrolytic copper available to the country are not large enough to meet all the demands, aluminium conductors are steadily replacing copper conductors wherever technical circumstances permit. A specification for aluminium and steel-cored aluminium conductors was finalized, besides the specification for copper conductors already published. Specifications for rubber-insulated cables and bare annealed copper wires were finalized, while drafts for enamelled copper wires, cotton-covered copper wires and reels for covered wires reached advanced stages of formulation. Work on varnished cambric cables, PVC-insulated cables and flexible cords for use at 250 volts for electric power and lighting purposes was started. Draft specifications for high tension and low tension insulators are also in hand.

Electrical Plant and Switchgear — The committee on this subject has already covered a number of important items, such as ceiling fans, 3-phase induction motors, etc. During the year it took up work, among other subjects, on table fans and standard recommended voltages and frequency for AC transmission and distribution systems.

Electrical Accessories — The work of formulating standards for tungsten filament electric lamps reached advanced stage of finalization.

Radio Equipment — Draft specifications covering subjects, such as fixed paper dielectric capacitors, safety requirements of broadcast radio receivers, minimum electrical performance of radio receivers, etc, were approved for circulation.

Batteries — A standard on lead acid batteries for automobiles, as also a number of standards covering Leclanché cells of different types, were published, while standards on radio batteries and stationary accumulators were in advanced stages of processing at the end of the year.

Refractories — Three Indian Standards on moderate heat duty fireclay refractories of groups 'A' and 'B' and high heat duty fireclay refractories, published in 1949, were revised this year to bring them in line with the advances since made. A standard on methods of sampling, chemical analysis and physical testing of refractory materials was finalized. Work on the draft Standard for fireclay refractories for oil-fired furnaces of naval ships, undertaken at the request of the Indian Navy, reached the final stages. This standard, when published, is expected to encourage Indian manufacturers to meet the requirements of the Indian Navy for high grade refractories. Another finalized standard, which is expected to play, in due course, an important role in the steel, glass and coke oven industries is that dealing with silica refractories for general purposes.

As a result of the trials conducted by the Railways at the recommendation of the relevant Committee of the EDC, the Railways have now decided to use moderate heat duty fireclay refractories group 'A' in place of high heat duty fireclay refractories in certain types of locomotives. It is expected that this changeover will result in considerable savings to the Railways.

Sports Goods — In connection with the work undertaken at the instance of the Export Promotion Committee of the Government of India, draft Standards for cricket and hockey balls; shuttlecocks; guts for tennis, badminton and squash rackets; and footballs, volley-balls, basketballs, water polo balls, etc; were finalized. These standards, the first of their kind in the world, it is hoped, would assist in the development of this industry, and in augmenting exports.

Other Items — Other items of general interest to the engineering industry, which are now being studied, include internal combustion engines, hurricane lanterns and oil pressure lamps, bicycles, bicycle components and accessories, safes and locks, agricultural implements and hand tools, and principles of general engineering drawings. A number of draft standards bearing on most of these subjects are in various stages of development.

During the year, 22 meetings of Sectional Committees and 31 of Subcommittees were held. In addition to 17 Indian Standards published, 11 draft Standards finalized, 38 put into circulation, 55 draft Standards prepared for circulation during the year, 80 drafts were under preparation at the end of the year.

4.3 Textile Division Council — The various Committees of the TDC were this year engaged in work that is expected to make fundamental contribution to the development of such large-scale and cottage industries as carpets, druggets, coir, textile accessories, silk reeling, etc. Thus, the tentative Standards for grading and methods of test for silk, which are being developed in collaboration with the Central Silk Board, are expected to fulfil a long-felt need of the silk industry, now

largely run as a cottage industry, for help in its systematic progress so that consumers can be assured of continuous supplies of standard quality products.

Carpets, druggets, and coir and its products form important items of export. However, because of the lack of standards, goods of varying quality are being exported at present. Since these items earn hard currency for India, standardization of the various types of carpets, druggets and coir products was taken in hand, and a number of draft Standards are in advanced stages of preparation. These Standards are expected to assist in the development and stabilization of the export trade in these commodities.

The Ropes and Cordages Sectional Committee (TDC 14) was formed during the year to deal with various types of ropes and cordages made of cotton, jute, sisal, hemp, manila, etc. It may be observed that the subject of cotton ropes for power transmission purposes is already covered by another Committee and is, therefore, not under the purview of the new Committee, although greatest possible co-ordination is maintained in the work of the two Committees.

An indirect contribution towards the extension of existing food supplies is being made by the standardization of tamarind kernel powder (TKP) which is replacing, either fully or partially, cereal starches as sizing agents for jute and cotton textiles. The standardization of bobbins and other accessories required by the textile industry is also expected to give an impetus to the manufacture of these products from indigenous materials.

This summary brings out some important aspects of the policy of the TDC, such as helping the manufacturer to produce quality products from indigenous materials and guiding the consumer through standardization to secure reliable and trustworthy materials.

A brief account of the work done during the year is recorded below. The subjects which received the attention of the TDC fall under the following groups:

Physical Characteristics of Textiles; Textile Chemistry; Cotton, Yarn and Cloth; Jute; Wool; Rayon and Rayon Products; Hosiery and Knitted Garments; Handloom Cloth; Coir and Coir Products; Textile Sizing and Finishing Materials; Textile Stores and Machinery; Textile Building and the National Flag of India.

Physical Characteristics of Textiles — The formulation of methods of test for physical characteristics of fibre, yarn and fabrics made of cotton, wool, jute and silk has made considerable progress. During the year the Committee concerned devoted considerable attention to the finalization of 21 tentative Standards on the grading and classification of raw silk. The future programme of work of the Committee includes formulation of test methods on wool and jute, and also the remaining items on cotton.

Textile Chemistry — The Committee dealing with this item prepared a Standard on Simple Methods for Identification of Common Commercial Textile Fibres. Other subjects which received the Committee's attention during the year were:

i) Revision of IS : 199-1950 Methods for the Estimation of Moisture, Total Size, Starch, Ash and Wax Content in Grey and Bleached Cotton Textile Materials to suit the present requirements of the industry,

ii) Methods for Comparing and Determining the Relative Desizing Efficiency of Enzymes,

iii) Method for Determining the Relaxation Shrinkage of Woven Woollen Fabrics,

iv) Method for Determining the Relaxation and Felting Shrinkage of Knitted Woollen Fabrics,

v) Methods for Estimation of Micro-Quantity of Prohibited Metals in Cotton Textiles, and

vi) Colour Fastness Tests.

Cotton, Yarn and Cloth — A series of 18 Indian Standards has been published already. During the year the committee has also formulated Standard Specifications for Mercerized Cotton Fabric — Grade 'A' for Aircraft, and Mercerized Cotton Fabric for Gliders. Further, the committee has on its programme of work the formulation of Standard Specifications for filter cloth for sugar and oil industries, and for harness materials, fabric for covering plywood, braided cord, etc, for aircraft.

Jute — The Standards on grading of Kucha and Pucca Raw Jute have already been published. Specification for Hessians is being finalized. Specifications for bales, trusses and bundles for the various varieties of jute products are being formulated.

Wool — Specification for Handloom Carpets (Mirzapur) for Export was finalized and the Specification for Druggets for Export progressed to an advanced stage. Further activities include formulation of standards on carpets such as are made in Agra, Rajasthan, etc, and a series of standards on woollen cloth.

Rayon and Rayon Products — Standard methods of test for rayon and estron filament yarn were prepared. A number of Specifications on the various varieties of rayon cloth are also under preparation.

Hosiery and Knitted Garments — Preparatory to formulation of standards, a questionnaire to collect data on various aspects of standardization of cotton hosiery and knitted garments was issued. Similar data was collected regarding woollen hosiery. Plans are also being made for taking up the work of formulation of Standards for sports and athletics hosiery goods.

Handloom Cloth — Samples of handloom cotton and woollen cloth are being collected through the Directors of Industries of various States along with the constructional particulars of the cloth.

Coir and Coir Products — Specification for Grading of Cochin Coir Fibre received renewed attention. Future plans of work include formulation of test methods and specifications for coir products.

Textile Sizing and Finishing Materials — Specification for Tamarind Kernel Powder for Use in the Cotton Textile Industry has already been published. During the year a draft specification for TKP for Jute Industry was prepared and circulated for comments.

Textile Stores and Machinery — A Specification for Solid Bobbins for Dry Jute Spinning Frames was finalized. The work on other items of jute mill stores such as swells, spool centres, picking

sticks, also progressed to an advanced stage. Cotton mill stores such as bobbins, shuttles and skewers are also receiving attention.

Textile Building — Items of mill-planning, e.g., spacing of machinery, illumination and air-conditioning are in hand. A code on safeguards for cotton textile mills reached an advanced stage.

National Flag of India — The Specification for the National Flag of India (Cotton Khadi) has been published already. Experimental work in respect of silk khadi was completed with the co-operation of the Technical Development Establishment, Textiles and Clothing, Kanpur, and a Specification on the subject will be formulated shortly. Tests on wool khadi are being made at Kanpur, and as soon as reports are available, the work of formulation of a Standard will be taken up.

During the year, 7 meetings of Sectional Committees and 7 of Subcommittees were held. In addition to 4 Indian Standards published, 27 draft Standards finalized, 22 put into wide circulation, 4 prepared for circulation during the year, 91 drafts were under preparation at the end of the year.

4.4 Chemical Division Council — The CDC held its fifth meeting on 26 March 1953 while the sixth and seventh meetings of its Standing Working Committee (SWCC) were held on 27 June 1952 and 26 March 1953, respectively.

Two new Sectional Committees were set up during the year. The first of these, CDC 18, will collaborate with the work of the Chemical Industries Committee of the International Labour Office (ILO) in establishing international marks of protection for affixing to containers of dangerous, obnoxious and toxic chemicals so as to warn workers of the chief hazards inherent in the handling and use of such substances. The Committee will be India's spokesman in international work on this subject. The other new Committee, CDC 19, has been set up for laying down Standards for Pest Control Products. This Committee will take up work on a number of insecticides, fungicides, fumigants, etc. It is already considering benzene hexachloride, 50 percent water dispersible powder. This Committee will co-ordinate its work with that of the proposed ISO Technical Committee on Pest Control Products when the latter is established.

The Committee on Bitumen and Tar Products, which was dealt with conjointly by the CDC and EDC, will now be the joint responsibility of the BDC and CDC, and subjects of a purely chemical nature will be allotted to the appropriate Committee of the CDC.

During the year, the CDC has to its credit the publication of standards on such vitally important materials as ethyl alcohol, rectified spirit, power alcohol and related materials. The standards published on paints, varnishes and allied products are expected to help the industry in producing, and the consumer in selecting, a wider range of reliable products than has been possible so far. On paints and allied products only, a total of 169 standards have appeared so far, while 39 drafts are now in various stages of preparation. Many of the published Standards have been adopted for the purchase requirements of a number of Government departments. It is expected that, in the near future, all the needs of the paint trade that could be reasonably met by standardization would be covered by Indian Standards. An example of how the CDC has been fostering the interests of Indian products is the effort made to assist the budding titanium dioxide industry of this country by amending 11 Specifications on paints and suggesting the use of alternative compositions containing this material so that a pigment of recognized value in the paint industry, now manufactured in the country, may be used more freely.

In the sphere of assessing and standardizing the various material requirements of the leather, glass, vegetable oils, lubricants, solvents and other industries, considerable progress was made during the year. A large number of draft Specifications, having a bearing on the requirements of these industries, were in different stages of preparation, and it is expected that, with their publication, these industries would be able to put their production on a more rationalized basis than has been possible so far.

A brief summary of the progress made in various spheres of activity is given below. The materials at present under the consideration of the CDC are:

Heavy Chemicals; Fine Chemicals; Coal and Coke; Plastics, Paints and Rubber; Lubricants; Essential Oils; Vegetable Oils and Soaps; Lac; Paper; Leather and Glassware.

As a matter of general policy, for the guidance of all the committees of the CDC, it has been laid down that in analytical procedures and testing in general, wherever only a maximum limit has been specified and no assay is essential, colorimetric or turbidimetric methods should be used, while, as far as possible, the test procedures and temperatures specified should be uniform.

Heavy Chemicals — The major achievement in organic heavy chemicals was the publication of Standards on power alcohol, rectified and denatured spirit, and absolute alcohol. Steps are being taken to prepare specific gravity tables for ethyl alcohol-water mixtures at the Indian Standard Temperature of 27°C with the help of the national laboratories of the Council of Scientific & Industrial Research. Different samples of activated charcoal are being tested for performance before laying down a Standard for activated carbons used for decolorization in vegetable oils and sugar industries. Emulsifying type of disinfectant fluids are proposed to be tested with different strains for germicidal activity at 25° to 30°C before formulation of Standards on this subject.

In the sphere of inorganic heavy chemicals, information on the various characteristics of barytes, required for rubber industry, is being collected. A suitable method is being developed for the determination of small quantities of carbon monoxide in compressed carbon dioxide. The standardization of red lead and litharge for secondary cells as also of sodium chlorate has been deferred for the present.

Fine Chemicals — The programme comprises standardization of a wide range of materials such as organic esters, sulphur compounds, solvents, etc, which are used in such diverse industries as foods, photography, electroplating, pharmaceutical, etc.

Coal and Coke — Drafts on the sampling, grading and testing of these important materials are in

various stages of preparation. A draft Standard on hard coke is also being considered.

Plastics, Paints and Rubber — Exhaustive testing of a number of samples of cashew nut shell liquid, which is a monopoly product of India figuring in the exports of the country, is being carried out with a view to adopting suitable methods for testing and also for getting the necessary technical data on which to base a standard for the material. Data on the performance of indigenously produced phenol-formaldehyde moulding powders is also being collected.

In the field of paints, the ISI, with the unanimous support of industrialists, consumers and technologists, urged the Government of India to take early steps by legislation and through its purchase policy to enforce marketing of all liquid paints by volume instead of by weight. This step is expected to check the practices of "loading" paints with inferior materials. As marine paints are becoming important with the development of the seaborne trade, the question of laying down standards for them is engaging the attention of the Committee on Paints. Performance data on these paints would be available when the Naval laboratories start functioning.

At the request of the Pulleys and Belts Committee, the Rubber Products Committee is taking up the preparation of working documents for the standardization of fan belts and rubber V-Belts as an urgent item. Investigations on the need for formulating standards on auxiliaries for the compounding of rubber have also been undertaken.

Essential Oils — Draft standards for a few essential oils as well as for methods of test for them were finalized; and some of the provisions of the latter have been appreciated by international experts in this field. Drafts relating to a number of other essential oils are in various stages of preparation. Investigations for prescribing Lovibond Colour numbers for 12 grades of rosin, proposed to be adopted on the basis of American Standards are now going on, and it is proposed that the Forest Research Institute be authorized to keep and maintain prototype glass standards, and to prepare, issue and test secondary material standards against the prototype for use by producers and purchasers. A study of the manufacturing processes of turpentine of pharmaceutical grade is also going on with a view to arriving at a suitable standard for the material.

Vegetable Oils — Draft standards on the methods of sampling and of testing vegetable oils as also for the more important edible and non-edible oils, such as groundnut, mustard and mahua, were prepared in close co-operation with the Directorate of Marketing & Inspection. Active collaboration with the Central Food Standards Committee under the Ministry of Health has also been continued.

Lubricants — One part of a standard on methods of testing for lubricants has already been published, while a standard on methods of test for greases is under preparation. The individual lubricants, greases and similar materials are now receiving attention and a few standards on these subjects have been published.

Lac — The most important event during the year was the meeting of the ISO/TC 50 Lac, information about which is given under item **7.1.1**. On the national level, tests are being carried out for determining the adhesive quality of sealing wax compositions on types of paper used for sealed packages.

Paper — Different types of paper samples, both indigenous and imported, are being collected for experimental work for grading of different types of paper and establishing test methods. The question of the recognition of the internationally proposed paper sizes such as the 'A Series' along with the usual sizes current in India is being taken up.

Leather — The Committee has already undertaken formulation of standards for widely varying types of leathers and leather articles, such as, calf leather, chrome lace leather, ammunition boots, chaplis, etc. Tests on chamois leather are being carried out to enable the preparation of a standard on the subject.

Glassware — The programme in this field covers the standardization of diverse types of glass products and raw materials, ranging from sheet glass laboratory glassware, glass phials and ampoules to glass making sands, etc.

Other Items — Among miscellaneous subjects, drawing inks have been taken up for standardization by the relevant committee, while work on leatherite has been deferred till results of tests now being carried out become available.

During the year, 14 meetings of Sectional Committees and 36 of Subcommittees were held. In addition to 54 Indian Standards published, 47 draft standards finalized, 37 put into wide circulation, 64 prepared for circulation during the year, 48 drafts were under preparation at the end of the year.

4.5 Building Division Council — The BDC was inaugurated on 24 April 1952. In his inaugural address, the Commerce Minister, Shri D. P. Karmarkar, referred to the important role of the building industry in the national economy at a time when the nation was embarking upon an extensive programme of development and reconstruction in all spheres of activities. He stressed the need for achieving rationalization in all aspects of the building industry so that maximum benefits could be obtained from the enhanced economy and the improved quality resulting from such co-ordinated standardization.

The formal setting up of the BDC saw the culmination of the Institution's untiring efforts to fulfil a long-felt demand for taking up standardization in the building field and was enthusiastically welcomed by the industry as a common platform on which the interests of the consumers and the producers could be protected and promoted alike, without fear of any of them being affected adversely.

The BDC, on its inception, took immediate cognizance of two important points, namely, the delay that had occurred in the launching of a full-scale programme of standardization in the building field and the call for standards from several quarters for dealing with problems of housing shortage, slum clearance, re-development and industrial housing. The BDC adopted a policy which had two aspects: the first one was concerned with initiation of work in a number of specific

fields which had been hitherto kept pending, and the second and more important one was concerned with long term projects in a number of fundamental and allied fields. These two, together, made a comprehensive programme covering broadly all important phases of work in the building field. To implement this policy, in addition to the 5 Sectional Committees which had been previously attached to the EDC and the CDC and were transferred to the BDC, 16 new Sectional Committees were set up, each one covering a particular aspect of work.

Briefly summarized, the work of the BDC during the year was:

i) active promotion of a number of pending projects,

ii) filling up the gap created by work on several specific subjects not directly related to each other, setting up of new Committees and initiation of work in a number of fundamental fields so that work in major spheres would proceed side by side with the work in specific subjects. For instance, the work on Functional Requirements of Buildings was initiated along with the work on the preparation of a building code so that the code would be based upon requirements determined by the functions which the building or its components would serve. Again, dimensional standardization of building components, such as bricks, doors and windows, etc, was taken up together with the work on a scheme of modular co-ordination among the dimensions of the components, making it possible to derive the maximum benefits from such dimensional rationalization,

iii) programme of research and experimental work on a number of important problems which had emerged during the preparation of standards; the data obtained from such work was to provide the basis for the review of standards at a later stage, and

iv) active pursuit for initiating work in an important field like steel, and its economical use in building.

The early part of the year was occupied with a large amount of non-technical secretarial work connected with the actual setting up of the Sectional Committees and their organization. Subsequently, preliminary investigation into the production and consumption aspects of materials was conducted in respect of subjects accepted for standardization, which led to the collection of a large amount of technical data furnishing the basic information for the work of the various Sectional Committees.

A brief account of the work done during the year in some of the subjects is given below. The materials at present under the purview of the Division Council are:

Cement, Concrete; Building Limes; Bricks and Stones; Flooring Materials of all Types; Timber and its Products; Builder's Hardware; Tar and Bituminous Products; Application of Building Finishes; Steel and Test Sieves.

Cement and Concrete — Two Standards were finalized. The first one is the Code of Practice for Plain and Reinforced Concrete for General Building Construction. It is expected to be popular and widely used by engineers and builders in the country. The second, a Specification, deals with Portland Blast Furnace Slag Cement and anticipates its manufacture in this country. The production of this type of cement would pave the way for the utilization of a great quantity of waste material and would augment the nation's supply of portland cement which is an essential material in the construction programme. Work on Specifications for asbestos sheets, concrete pipes and on Code of Practice for Plain and Reinforced Concrete for Dams and other Massive Structures is in an advanced stage.

Building Limes — Lime, an important binding material which has been in use from ancient times, requires urgent attention, as it has lately gone out of use causing depletion in the binder material resources. Preliminary work has been done in this field, and a draft is under consideration of the Subcommittee.

Bricks and Stones — These materials, being the basic construction materials, have received serious attention, and dimensional rationalization of bricks and stones together with quality standards is being attempted. The work is in the investigational stage.

Flooring Materials — The work on flooring materials, such as oxychloride flooring and linoleums, has progressed to an advanced stage. Flooring tiles, bituminous material, etc, are being investigated.

Timber and Timber Products — One of the important Standards finalized was that of Zonal Classification of Timbers according to their use, giving basic data useful to the consumers, dealers in timber and the Forest departments. In the field of timber products, the Specification for Plywood Tea-Chests was revised and brought in line with the requirements of the tea industry and the potentialities of the tea-chest and plywood industries.

Builder's Hardware — Standards on several new items such as rat tail type spring hinges, doors and windows, double helical spring hinges and wood screws were finalized and work was commenced on a number of new projects, such as wire nails, rim locks and latches, roofing hardware, etc. The work on some of these items is already in advanced stages.

Tar and Bituminous Products — In the field of Tar and Bituminous Products, two Standards, namely, Digboi Type Cutback Bitumen and Glossary of Terms Relating to Bitumen and Tar, were finalized during the year.

The work on certain miscellaneous building materials, such as pozzolana, building finishes other than paints, etc, is in the initial stages.

In auxiliary fields, such as sanitary appliances, a number of draft Standards, covering valves of different types, sanitary appliances and fixtures, are in different stages of drafting.

Sieves — Indian Standard Specification for Test Sieves, which unifies the different series of test sieves used in the USA and the UK, was finalized. This Standard is designed to encourage the manufacture of test sieves in the country. The Sieves Committee made a fundamental contribution by

designing a micro-meter projector for facilitating quick examination and calibration of test sieves.

Methods of Construction — Work on a comprehensive Building Code embracing all aspects of building work is in progress, and several chapters are in the draft stage. A Code for Building Bye-laws has been prepared by the Subcommittee.

Functional Requirements of Buildings — Among the fundamental subjects taken up by the Division Council, progress has been made in the following:

i) Fire Safety of Buildings and Consequent Fire Grading,
ii) Orientation of Buildings,
iii) Daylight Standards for Buildings,
iv) Structural Safety of Buildings, and
v) Heat and Sound Insulation.

The work on each of these items is in various stages of compilation, and a few drafts have been taken into consideration.

Modular Co-ordination — In this field of fundamental work a building module of 4 in. has been provisionally accepted. As a direct result of this decision of the Modular Co-ordination Committee, the Doors and Windows Committee adopted a 4 in. module in the dimensional standardization.

The Brick Committee is also investigating the question of adopting a unified size of bricks related to this module.

Other Subjects — Two other subjects of fundamental interest taken up are:

i) Standard Design Conditions for Air Conditioning for various parts of the country and Standard Comfort Conditions, and
ii) Standardization of Methods of Fluid Flow Measurement.

The work on the first item is progressing satisfactorily, and the Meteorological Department has been giving considerable assistance in this work.

During the year under review, 14 meetings of Sectional Committees and 43 of Subcommittees were held. In addition to 4 Indian Standards published, 8 draft Standards finalized, 3 put into wide circulation, 13 prepared for circulation during the year, 26 drafts were under preparation at the end of the year.

4.6 Agriculture Section — The Institution took a further step towards the formation of the Agriculture and Food Products Division Council by establishing a small Agriculture Section. This Section commenced work on preparing Standards for food grain storage structures, sugar, and pest control products. In the absence of the Division Council, three Sectional Committees, namely EC 7, EC 8 and CDC 19, were set up under the auspices of the EC and the CDC, to deal with the work in the three fields mentioned above. The EC 7 and CDC 19 made considerable progress in their work while EC 8 had just embarked on its work.

A brief account of the work done by this Section during the year is given below:

Food Grain Storage — The objective in this field is to make a definite contribution in the sphere of preservation and extension of the supplies of food grains in the country. This is proposed to be achieved, firstly, by establishing standards for the construction of such storage structures as could be easily constructed with the available raw materials, and secondly, by preparing easily adaptable codes of practice for handling, storage and transportation of food grains. The subject of storage is being considered for three levels, namely, those of cultivators, trade and Government. Accordingly, for dealing with structures suitable for trade and Government purposes, five regional Subcommittees consisting of representatives of Government and trade interests were set up. As regards storage structures at cultivators' level, information is being collected for suggesting such improvements in the existing indigenous structures as are within easy reach of the cultivator. For dealing with the preparation of codes of practice for handling, storage and transportation of food grains, another Subcommittee was set up.

The six Subcommittees met at least once during the year and formed drafting panels which are busy with the preparation of draft standards.

At the instance of these Subcommittees, and with the co-operation of the Indian Aluminium Co. Ltd., Calcutta, experimentation on the storage of food grains in bulk bins made of aluminium was initiated, and experimental bins of 750 maunds capacity will be given field trials at Dhalli (near Simla), Ambala, Trivandrum and Cuttack. It is hoped that the local laboratories will extend facilities for recording data on this project.

Sugar — A proposal was received from the Indian Central Sugarcane Committee for looking into the possibility of bringing about a reduction in the existing colour and grain size grades in the sugar standards issued by the Indian Institute of Sugar Technology, Kanpur, and also for specifying such methods of test for evaluation of grades, in addition to the visual methods of test in vogue, as could be utilized as reference methods in case of arbitration.

Pest Control Products — The work of this Committee has been mentioned under item **4.4**.

During the year, one meeting of Sectional Committee, and 6 of Subcommittees were held. With regard to formulation of standards, eleven drafts were under preparation at the end of the year.

5. IMPLEMENTATION OF INDIAN STANDARDS

5.1 Indian Standards, being the result of the co-operative efforts of consumers, producers and technologists, should be acceptable for voluntary adoption by all concerned. Moreover, since in the production of Indian Standards the purchase specifications of the various Government departments are taken into consideration, they find them suitable for replacing their present specifications. An index of the popularity of Indian Standards is that their sale this year amounted to Rs 30,000 (*see* item **9.6**). The ISI has taken up the matter of implementing Indian Standards with the purchasing departments of both the Government of India as well as State Governments. The achievements so far in this direction are reasonably satisfactory, but a great deal more remains to be done. The total number of Indian Standards adopted

by various purchasing departments of the Government of India is 199.

The matter of implementation of Indian Standards by State Governments has also been pursued, and the response, though slow, has been satisfactory. The ISI (Certification Marks) Act 1952, when put into operation, would go a long way in furthering the implementation of Indian Standards by encouraging their voluntary enforcement.

Appendix 14.11 (page 41) gives a list of Indian Standards which had been recognized up to the end of the year for purchase purposes by the organizations referred to against each.

6. RESEARCH AND TESTING WORK

6.1 Prior to the final establishment of a standard, it is often necessary to carry out considerable research work so that the standards prescribed subsequently may stand on a sound and scientific basis, both as regards requirements and methods of test. As such, it has been the practice of the ISI to entrust controversial or ambiguous points arising out of the work of the different committees and requiring further experimental, testing or research work, to well-established and adequately equipped laboratories or organizations for investigation. The results of these investigations are taken into consideration for the improvement and revision of published standards, or for laying down specific requirements, methods of test, etc, in new draft standards. Such investigations not only bring the Indian Standards into line with the manufacturing practices and processes, but also take cognizance of the variations in properties, testing methods and atmospheric conditions prevalent in the country. Such work has sometimes extended to making a survey of the testing facilities available in the country.

6.2 Several laboratories and organizations have undertaken such investigational work for the ISI, and the number of problems considered has been on the increase. Compared to the last year's figure of 46, fifty-one problems were being investigated this year. Among the problems now on hand are such comprehensive long-range projects as the collection of performance data on marine paints, trichromatic analysis of Indian Standard colour shades by using Illuminant 'C', evaluation of colour and cloth requirements for the national flag, study of the manufacturing processes for turpentine, study of the behaviour of Indian and overseas fire bricks, performance tests on abrasives, petrological examination of building stones, etc. Several materials and methods of test are also being studied.

Co-operation of all laboratories and other organizations, which include a number of National Laboratories of the CSIR, is highly appreciated by the ISI and all interests participating in the standardization programme of the ISI. A complete list of the projects under investigation during the year is given in Appendix 14.12 (page 42).

7. ISI AND INTERNATIONAL STANDARDIZATION

7.1 Main Events — The important events during the year on the international level, from the Indian viewpoint, were the re-election of Dr. Lal C. Verman, Director, ISI, as Vice-President of the ISO for a further term of three years ending 31 December 1954, the meetings of ISO/TC 50 Lac and ISO/TC 56 Mica, for both of which India holds the secretariats, and the election of India to the Committee of Action of the IEC for a term of nine years.

7.1.1 *ISO/TC 50 Lac* — The second meeting of ISO/TC 50 was held in New York on 23 to 25 June 1952 under the chairmanship of Dr. Lal C. Verman, Director, ISI. The Indian delegation included:

i) Dr. P. K. Bose, Director, Indian Lac Research Institute (Leader),
ii) Shri R. S. Jayaswal, Calcutta Shellac Trade Association, and
iii) Shri Romesh Bhandari, Vice-Consul for India in New York.

Delegates from the following overseas countries took part in the deliberations:

France	(2 delegates)
Germany	(1 delegate)
UK	(1 delegate)
USA	(12 delegates)

In addition, a specialist from Thailand and a representative of the IEC/TC 15 Insulating Materials, were present by special invitation.

The Committee considered in great detail the comments received on the second draft proposals for Seedlac, Shellac and Dry Bleached Lac. The proposals were based on the decisions arrived at during the first meeting of the Committee in Delhi in January 1950, when agreement on most of the points had been reached. The discussion during this second meeting centred more round the methods of test for the determination of physical and chemical properties rather than on the specification limits. The sampling procedure received detailed consideration, and an agreed solution based on the UK proposals, was ultimately reached.

The draft Specification on Dry Bleached Lac underwent the greatest change, since the Committee decided to include Wet Bleached Lac also in the same Specification. The title was, therefore, changed to Bleached Lac, and the modifications took into account that wet bleached lac has five times higher moisture content than dry bleached lac.

As a result of these deliberations, research on such items as colour determination, bleachability, acid value of shellac, cold alcohol solubles, etc, is to be continued so as to eliminate uncertainties in testing and to reduce the number of prescribed methods of test in the three Standards to a minimum.

Third Draft Proposals for Seedlac, Shellac and Bleached Lac, based on the decisions arrived at the second meeting are now being circulated to Participating Member Bodies for comments. On approval by them, the proposal will become Draft ISO Recommendations, which will be submitted for approval to all the ISO member bodies as ISO Recommendations.

7.1.2 *ISO/TC 56 Mica* — The second meeting of ISO/TC 56 Mica, took place on 9, 10 and 11 June 1952 at Columbia University under the chairmanship of Shri Chandmull Rajgarhia, President

of the Federation of Mica Associations of Bihar. The Indian delegation also included:

i) Shri Ramgopal Aggarwala, General Manager, Chrestien Mica Industries Ltd (Leader),

ii) Shri P. Kota Reddy, Madras Mica Association and South India Mica Mine Owners' Association,

iii) Shri M. R. Reddy, South India Mica Mine Owners' Association,

iv) Shri M. B. Reddy, Gudur Mica Products Co.,

v) Shri Y. N. Reddy, Madras Mica Association, and

vi) Dr. Lal C. Verman, Director, ISI, Spokesman of the Delegation and Secretary to the Committee.

The other countries represented at the meeting were:

Brazil	(1 delegate)
France	(3 delegates)
Germany	(1 delegate)
UK	(2 delegates)
USA	(32 delegates)

Two specialists from Japan were also present by special invitation.

The agenda of the Committee included the consideration of comments of various Member Bodies on two international draft recommendations, one on Grading of Processed Mica and the other on Classification of Processed Muscovite Mica, which had been compiled by the Secretariat on the basis of earlier decisions arrived at in the first meeting of the Committee held in New Delhi in January 1950. While a greater part of these drafts had been generally agreed to by the Member Bodies of the Committee during circulation stage, a few points of disagreement, which comprised the comments, came up for lively discussion. The general trend of opinion was that while the consuming countries desired to enforce stringent requirements, the producers felt that all requirements should be related to the physical possibility of their being able to satisfy them at an economical level. Limitations of a natural product like mica and the inherent difficulties in its grading and classification according to visual standards were generally recognized. General agreement was ultimately reached and both the drafts were adopted with certain modifications.

The project concerning Classification of Processed Muscovite Mica requires further work concerning the preparation of master standard samples intended for use as reference standards in case of disputes. The Indian Delegation presented a full set of master standard samples covering both mica block and splittings. The US delegates also presented standard samples of Muscovite Block Mica of Brazilian origin. It was agreed that standard samples of splittings need not be considered at this meeting, because decisions at the meeting had somewhat altered the specifications. So far as standard samples of block mica are concerned, it was found that agreement was not possible even after a small working group of the Committee had met and examined both sets of samples on hand. Since the time available during the 3-day meeting was not adequate, another group, including delegates from all countries represented except Brazil, was appointed to meet at a later date during the period of ASTM Golden Jubilee celebrations. This working group, accordingly, met on 23 June 1952 at the headquarters of the National Electrical Manufacturers' Association in New York, when members of the ASTM Subcommittee D-9 on Mica were also present. The group agreed on a few of the samples selected out of the Indian batch, and it was decided that the American interests should also prepare a set of standard samples of mica of Indian origin and submit them for examination of the Indian Committee.

Draft proposals concerning Phlogopite Mica presented by France were also considered and adopted.

While the work on preparing standard reference samples will be continued in future, the final drafts of three sets of recommendations agreed to in New York are to be prepared and circulated by ISI as soon as possible for general acceptance as ISO Recommendations.

A proposal was accepted establishing liaison between ISO/TC 56 Mica and the International Electrotechnical Commission (IEC) Technical Committee on Insulating Materials, and Mr. K. G. Coutlee of the Bell Telephone Laboratories, New York, was designated to represent the former on the latter.

The ISI has since circulated the third draft proposal for Methods of Grading Processed Mica, Classification of Processed Muscovite Ruby Mica and second draft proposal for Phlogopite Mica.

7.1.3 The greatest gains from these two meetings were that Indian producers and technologists were able to establish direct contacts with the consumers and technical experts of the countries which are chief buyers of our lac and mica. These contacts removed many past misgivings and doubts that existed in the minds of our own people and also people abroad. On the whole, it now appears that future negotiations, even by correspondence, would be greatly facilitated due to the better understanding brought about during the course of the meetings of these two ISO Technical Committees.

7.2 Other ISO Committees — In addition to the activities noted above, the ISI has also been taking a keen interest in the work of many other ISO Technical Committees:

i) The meeting of the ISO/TC 8, Shipbuilding, held in The Hague on 24 to 29 November 1952, was attended by Com. B. S. Baswani of the Office of the Naval Adviser to the High Commissioner for India, London. At this meeting, the standardization of life boats, safety factors with regard to masts and lifting gear, ship propellers, measures for the interchangeability of symbols, and galvanized steel wire ropes were discussed. Agreement was reached on a number of points, and working groups were established to look into controversial matters.

ii) Shri N. G. Chakraborti of the Bhartia Electric Steel Co. Ltd., Calcutta, represented India at the meeting of ISO/TC 17 Iron and Steel, held in New York on 9 to 12 June 1952. Agreements were arrived at on the standardization of certain methods of test for steel products. These included Rockwell,

Brinell and Vickers (Diamond Pyramid) tests for hardness, the Bend test, and the Izod and Charpy impact tests. Three working groups were established to deal with tensile strength testing, sheet metal and strip testing, and testing of wires.

iii) Dr. Lal C. Verman, Director, ISI, attended the meeting of ISO/TC 28 Petroleum Products, held in New York on 12 and 13 June 1952. At this first meeting of the Committee, the future programme of work was discussed. It included items of urgent and more or less non-controversial character, such as a study of the oil measurement tables, test methods for determining the knock rating of motor fuels, and terminology of petroleum products. On the question of recent change in the standard value of viscosity of water by a declaration of the US Bureau of Standards, the Committee was of the view that any change in a basic natural constant of this character, which affected commercial measurements of viscosity of petroleum products, should not be introduced without consultation with interests concerned, and may be considered only after due examination by scientific organizations of Member Bodies of the Committee.

iv) The meetings of the two Subcommittees of the Committee on Textiles, namely ISO/TC 38/SC 2 Shrinkage of Fabrics in Washing (in New York on 16 June 1952), and ISO/TC 38/SC 5 Yarn Testing (in New York on 12 to 16 June 1952) were attended by Shri J. K. Srivastava of the New Victoria Mills Ltd., Kanpur. In both these Committees, certain details of methods of test for shrinkage and yarn strength were agreed to, which are expected to furnish the material for drafting international standards on the subject.

v) The meeting of the Subcommittee ISO/TC 38/SC 1, Textiles — Colour Fastness Tests, with particular Reference to Light, Washing and Perspiration, held in New York on 10 to 12 November 1952, was attended by Mr. A. Low, Representative of Indian Jute Mills Association in New York, as an Observer. The Committee discussed details of the various methods of test for colour fastness, and the altered methods are now being re-drafted.

vi) The meeting of ISO/TC 48, Laboratory Glassware and Related Apparatus, held in London on 5 to 7 November 1952, was attended by Dr. S. R. Lele, Managing Director, Industrial & Engineering Apparatus Co. Ltd., Bombay. The principles involved in construction and adjustment of volumetric glassware and hydrometers, as also in laying down thermometer specifications, were fully discussed. As a result, it was decided that information on whether member countries can undertake or inform about tests on resistance and leak-proofing of laboratory glassware should be obtained. In order to establish correct usages, a new working group on Terminology for Laboratory Glassware and Related Apparatus has been established.

7.2.1 The following three draft ISO Recommendations were approved during the year:

i) Dimensions of Stretcher, Stretcher Carriers and Hospital Trolleys,

ii) Pipe Thread for Gas List Tubes and Screwed Fittings, and

iii) Identification Colours and Symbols for Pipes Conveying Fluids.

7.3 International Electrotechnical Commission (IEC) — In all, 26 meetings of the technical committees and subcommittees of the IEC were held during the year. Although the Indian National Committee (INC-IEC) could not take a very active part in the IEC work, Mr. F. Wade Cooper, of the General Electric Co. of India Ltd., Calcutta, presented the Indian viewpoint at the meetings of IEC/TC 17/SC 2D Switchgear — Efficiency, and IEC/TC 2 Rotating Machinery. He also attended the IEC Committee of Action as Observer.

A total of nine IEC Recommendations were received by the ISI for comments prior to their publication as IEC Standards. The relevant Sectional Committees considered them on behalf of the INC-IEC. Titles of these IEC Recommendations along with the comments are given below:

i) *Safety Requirements for Electric Mains Operated Radio Receiving Apparatus* — It was found that this Recommendation was incomplete, inasmuch as it did not cover the safety requirements under tropical conditions. However, the IEC agreed to restrict the scope of this Recommendation to non-tropical conditions, while India offered to furnish the material for drafting a supplement for tropical requirements.

ii) *Basic Climatic and Mechanical Robustness Testing Procedure for Components*

iii) *Measurements on Receivers for Amplitude Modulation Broadcast Transmissions* — Comments on a few clauses were sent, and some of these were incorporated in the document before its finalization. The draft will be published as an IEC Standard shortly.

iv) *Standardization of Rated Currents of Fuse-links of Low Voltage Fuses*

v) *Plugs and Sockets-Outlets for Domestic and Similar General Uses*

vi) *Fuses for Voltages not Exceeding* 1,000 *V for DC and AC*

vii) *Capacitors for Power Systems — 1st Part* — This document was not approved in its original form, as it did not include tropical requirements for fuses. However, ISI has undertaken the task of furnishing necessary data on service conditions existing in India. It is expected that the data will be considered for incorporation before the publication of the document.

viii) *Lamp Caps and Holders Together with Gauges for the Control of Interchangeability*

ix) *Porcelain Insulators for Overhead Lines with a Nominal Voltage of* 1,000 *V and Upwards* — The INC-IEC is not in favour of publication of this document, and a number of comments both technical and editorial were sent. As the necessary majority

vote in favour of the document has not been obtained, the document has not been approved by the IEC, and a revised draft is expected shortly.

Nine draft IEC Recommendations and 27 preliminary draft IEC proposals are now under consideration of the various Committees.

8. ISI AND OTHER NATIONAL STANDARDS AUTHORITIES

8.1 As in the past, friendly and co-operative relations were maintained by the ISI during the year with the national standards bodies of the Commonwealth and other countries. The exchange of publications, draft standards, and minutes of first meetings of technical committees, with other countries, which is a regular feature of these relations, helps the ISI technical committees to keep in touch with the latest trends in standardization all over the world, thus giving the members a comprehensive background for their work. Moreover, since the formulation of international standards, based on the co-ordination of national standards, is the ultimate objective of the ISO, such an exchange prepared the ground for international co-operation, understanding and progress.

8.2 The ISI received draft standards and proceedings of first meetings as recorded in Table I. The list does not include the numerous similar documents received from the ISO, the IEC and their technical committees. The ISI sent out 110 draft standards and 16 proceedings of first meetings to other countries.

Among the new committees formed by other countries, mention may be made of committees on glass electrodes, dental industry standards, women's and children's dressing gowns and house-coats, time measurement equipment, radiology, portable air-conditioning units, mechanical plant for building roads, constructional work, etc.

9. PUBLICATIONS

9.1 Standards — Eighty-one new Indian Standards were published during the year, and 19 were under print on 31 March 1953, bringing the total number of Indian Standards published and in press to 391 at the end of the year. A list of the standards published during the year, and in press on 31 March 1953 is given in Appendix 14.13 (page 44).

9.2 ISI Bulletin — The publication of the fifth volume of the ISI Bulletin began with the January 1953 issue. The circulation of the Bulletin went up from 2,250 to 2,750 during the year. Of these, 90 copies were distributed to subscribers, 155 given in exchange for technical journals in India and abroad, and the remaining distributed to members and officers of the ISI.

9.3 ISI Handbook of Publications — An addendum to the ISI Handbook of Publications, first published in 1951, was issued, bringing the catalogue up-to-date till August 1952. Of the 101 Indian Standards included in the Addendum, 70 had already been listed among the 320 covered by the Handbook, and the remaining 31 were new publications.

9.4 Articles Published in Other Journals — A list of articles contributed by the ISI staff during the year to various technical and trade journals, on invitation, is given in Table II.

9.5 Press Notes — In order to keep the general public, as well as industrial, commercial and other interests in the country informed about the activities of the ISI, press notes, detailing features of published standards as also of draft standards under circulation and other ISI activities, are issued through the Press Information Bureau, Government of India. During the year, 100 press notes, 38 on 96 published standards, 45 on 92 draft Indian Standards and 17 covering other activities of the ISI, were issued. Besides the

TABLE I DRAFT STANDARDS AND PROCEEDINGS OF FIRST MEETINGS RECEIVED FROM COMMONWEALTH AND OVERSEAS COUNTRIES

(*Clause* 8.2)

SOURCE	NUMBER OF	
	Draft Standards	Proceedings of First Meetings
Australia	22	7
Austria	6	—
Belgium	23	—
Canada	11	—
Chile	14	—
Denmark	3	—
Eire	17	—
France	372	—
Germany	310	—
Israel	38	—
Italy	—	—
Netherlands	2	—
New Zealand	21	—
Poland	29	—
Portugal	5	—
South Africa	51	24
Spain	71	—
UK	319	72
TOTAL	1,314	103

TABLE II ARTICLES CONTRIBUTED

(*Clause* 9.4)

SL NO.	TITLE	AUTHOR	PUBLICATION	DATE
1.	Standards Marks	Shri Jainath Kaul	Jute and Gunny Review	April 1952
2.	Indian Standards Institution and Electrical Standards	Shri Jainath Kaul	Indian Electrical Contractor and Trader	August 1952
3.	Metrology	Dr. Lal C. Verman	Tamil Encyclopaedia	Under publication
4.	International Standardization Conferences	Dr. Lal C. Verman	Paintindia	November 1952
5.	Industrial Standardization	Shri V. P. Johar	Indian Spectator	December 15, 1952
6.	Indian Standards Stride Forward	Shri V. P. Johar	Indian Export Trade Journal	Annual Number 1952-53
7.	More Standards for Metallurgical Industries	Shri V. P. Johar	The Eastern Metals Review	Annual Number 1953

daily and weekly press, most of the Indian technical journals continued to take a keen interest in the work of the ISI and published the press notes in their columns.

9.6 Sale of Standards — Sale of Indian Standards totalled Rs 30,000 during the year, as against Rs 29,400 of last year, while the issues supplied free of cost to subscribing members, committee members, Government departments, CSIR laboratories, overseas standards bodies, etc, amounted to 1·25 lakh copies as against 1 lakh of last year. The sales of overseas standards amounted to Rs 42,000, recording an increase of about Rs 8,000/- over last year's sale. Figures of sale of standards for the past six years are given in Table III and Fig 3.

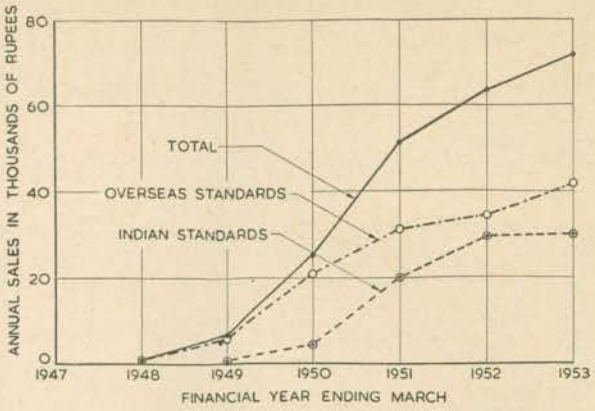

FIG 3 GROWTH OF SALE OF INDIAN AND OVERSEAS STANDARDS

TABLE III SALE OF PUBLICATIONS

SOURCE ORGANIZATION	YEAR					
	1947-48 Rs	1948-49 Rs	1949-50 Rs	1950-51 Rs	1951-52 Rs	1952-53 Rs
ISI	—	600	4,300	20,000	29,400	30,000
BSI	700	5,100	16,700	24,500	25,500	35,000
ASA	—	—	800	2,400	1,200	2,500
ASTM	—	—	3,100	3,900	7,000	2,500
Others	—	—	300	600	600	1,800
TOTAL	700	5,700	25,200	51,400	63,700	71,800

10. LIBRARY

10.1 The number of standard specifications of various countries, catalogued and indexed, exceeded 27,000 on 31 March 1953, while the total number of books was over 300. The collection of French and German standards, started in 1948 and 1950, respectively, is now complete. Lists of new accessions to the Library were published each quarter in the *ISI Bulletin* for information of members and subscribers. The translation of standards literature from French, German, Italian, Russian and Spanish into English formed a significant feature of the services rendered by the Library. The Library also collected and supplied information on standardization in India and abroad to meet various enquiries. During the year, exchange of publications was arranged with the Library of Congress, Washington; American Petroleum Institute; Petroleum Institute (UK); and Concrete Association of India, Bombay. Table IV shows the extension of the library service during the last four years.

TABLE IV LIBRARY RECEIPTS AND SERVICE

ITEM	1949-50	1950-51	1951-52	1952-53
Standards	2,988	4,098	6,534	5,822
Draft Standards	607	1,143	1,302	1,314
Proceedings of First Meetings of Committees	142	151	93	79
Periodicals	72	102	130	175
Standards and Draft Standards Loaned and Consulted (*approx*)	2,450	2,800	3,280	4,000
Bibliographies Prepared (*approx*)	25	27	38	51

10.2 Besides the sets mentioned under item **17.2** of the Fifth Annual Report, the Library collected sets of standards issued by the following important organizations in India and abroad:

i) INDIA
- Ministry of Works, Housing & Supply, Directorate General of Supplies & Disposals
- Ministry of Railways (Railway Board)

ii) UNITED KINGDOM
- AnalaR Standards
- Association of Short Circuit Testing Authorities
- Institute of Petroleum
- Ministry of Supply (Non-Military and DTD and SDM)
- Radio Industry Council

iii) UNITED STATES OF AMERICA
- American Association of Textile Chemists
- American Bleached Shellac Manufacturers' Association
- American Chemical Society
- American Dental Association
- American Dry Milk Association
- American Iron & Steel Institute
- American Institute of Steel Construction
- American Leather Belting Association
- American Oil Chemists Society
- American Railway Engineering Association
- American Society of Refrigerating Engineers
- American Welding Society
- Asphalt Institute
- Associated Cooperage Industries of America
- American Wood Preservers Association
- Association of American Feed Control Officials
- Association of American Railroads
- Association of Iron & Steel Engineers
- Bethlehem Steel Export Corporation
- California Olive Association
- California Redwood Association
- Clay Sewer Pipe Association
- Dairy Industry Supply Association (USA)
- Douglas Fir Plywood Association
- The Essential Oil Association of USA
- Friction Materials Standards Institute
- General Electric Co. N.Y.
- Grey Iron Founders' Society, Inc.
- Grinding Wheel Institute
- Gypsum Association
- International Acetylene Association
- International Municipal Signal Association

Liquid Tight Paper Container Association
Manufacturers' Standardization Society of Valves and Fittings Industry
National Association of Waste Material Dealers
National Machine Tool Builders Association
National Safety Council
National Terrazzo and Mosaics Association
National Warm Air Heating and Air-Conditioning Association
North American Smelting Co.
Open Steel Flooring Institute
Resistance Welder Manufacturers Association
Rubber Manufacturers Association
SAE Aeronautical Material Specification
Scientific Apparatus Makers Association
Standard Oil Development Company
Steel Joist Institute
Structural Clay Products Institute
Southern Cypress Manufacturers Association
Tag Manufacturers Institute
Underwriters Laboratories Inc.
US Monorail Manufacturers Association
US Shellac Importers Association

iv) YUGOSLAVIA

Savegna Komisija Za Standardizaciju (JUST)

10.3 The Library also received publications issued by the following international organizations:

Bureau Internationale pour la Standardization
Economic Commission for Asia and the Far East (ECAFE)
International Bureau of Weights and Measures
International Civil Aviation Organization
International Commission on Rules for Approval of Electrical Equipment
International Electrotechnical Commission (IEC)
International Organization for Standardization (ISO)
International Silk Association
World Meteorological Organization.

10.4 The Library received 175 technical journals regularly, including 33 on standardization. The following 32 journals were added during the year:

Al-ind (Aluminium Industry Ltd., Kundara, S.I.)
Boletim De Normalizacao (Spain)
Building Research Station Digest (UK)
Bulletin of the Technical Club (Maithon)
Business Digest
Cashiers de Prescriptions Techniques General Centre Scientific et Technique du Batiment .
Composite Wood Notes (FRI)
Consumers Research Bulletin
Courier (UNESCO)
Engg and Industrial Times
Film Industry
Harpers Sports and Games
Indian Electrical Contractor and Trader
Indian Investor
Indian Print and Paper
Industrial Quality Control USA
Interchemical Review
Journal of Calendar Reform
Journal of the Electricity Deptt (Govt. of Madras)
Laboratory
Library Bulletin Geological Survey of India
Lighting Service
Memo (FAO)
Ontario Hydro Research News
Outshining Light
Plant Protection Bulletin of FAO
Road Research Notes (CRRI — Delhi)
Rotary News
Statistical Newsletter
Telecommunications
Wireless World, London
World Wool Digest.

11. MEMBERSHIP

11.1 The number of subscribing members listed in Appendix 14.14 (page 46) reached a total of 813 on 31 March 1953, as against 758 on 31 March 1952. The number of Sustaining Members (including Associates), increased from 680 to 743, the number of Ordinary Members decreased from 78 to 70. A detailed analysis of gains and losses in the three categories of membership, and the membership position as on 31 March 1953 are given in Table V. Figure 4 shows the growth of membership from year to year.

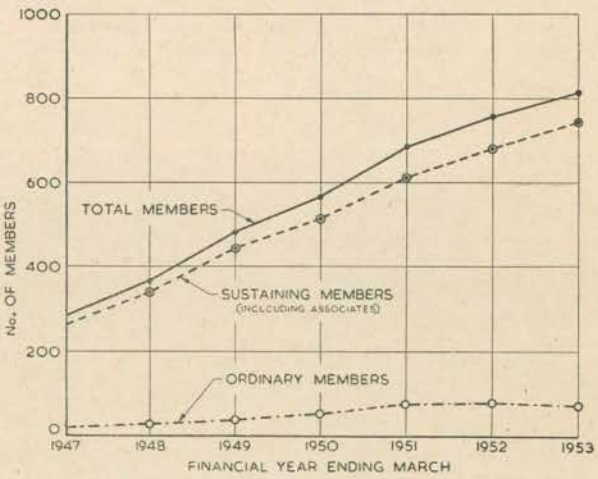

FIG 4 GROWTH OF MEMBERSHIP

11.2 During 1952-53, a total of 152 subscribing members (123 Sustaining Members and Associates, and 29 Ordinary Members), either resigned from membership or failed to pay their dues in time. However, canvassing efforts brought back 77 members (72 Sustaining Members and Associates and 5 Ordinary Members). The ISI thus lost a total of 75 members (51 Sustaining Members and Associates and 24 Ordinary Members) from the 1951-52 membership list. The addition of 131 new members, however, more than balanced the loss from 1951-52 membership, the net gain involving an increase of 64 Sustaining Members and Associates, and a decrease of 8 Ordinary Members.

TABLE V MEMBERSHIP POSITION IN 1952-53

(*Clause* 11.1)

CLASS OF MEMBERSHIP	MEMBERSHIP		LOSSES DUE TO			ADDITIONS BY			NET INCREASE
	1 April 1952	31 March 1953	Resignation	Non-payment	Total	Admission	Reinstatement	Total	
Sustaining Members	647	702	33	81	114	99	70	169	55
Sustaining Members (Associates)	33	42	4	5	9	16	2	18	9
Ordinary Members	78	70	10	19	29	16	5	21	−8
TOTAL	758	814	47	105	152	131	77	208	56

12. ISI DIRECTORATE

12.1 Staff — Several changes in the staff of the Institution occurred during the year. Shri C. N. Modawal and Shri V. P. Johar were appointed as Assistant Director (Agriculture) and Assistant Director (Public Relations), respectively, while Shri P. S. Mani, who took charge as Assistant Director (Electrical Engineering) in June 1952, resigned, and Shri S. K. Sen, Technical Officer, was promoted and appointed in his place. Shri S. Saha assumed charge as Technical Officer (Textiles). At the request of the Planning Commission, the lien of Shri K. Vyasulu, Technical Officer (Chemicals), who is now on deputation on the staff of the Planning Commission, was extended up to 28 February 1954. Consequently, the tenure of Shri D. Das Gupta, who is temporarily appointed to the post, was also extended to the same date.

On 31 March 1953, the position of the ISI staff was as given in Table VI

TABLE VI STAFF POSITION ON 31 MARCH 1953

Designation	Number of Posts	
	Sanctioned	Filled
Director	1	1
Officer on Special Duty	1	—
Deputy Director	4	2
Assistant Director	6	5
Secretary	2	2
Technical Officer	14	4
Superintendent	2	1
Technical Assistant	6	4
Librarian	1	1
Clerical Staff	86	69
Others (peons etc.)	34	24
Total	157	113

12.2 Distinguished Visitors — Shri T. T. Krishnamachari, Minister for Commerce & Industry and President of the ISI, paid a welcome visit to the ISI headquarters on 17 May 1952 and had informal talks with the officers during his stay of two hours. Other visitors included the Japanese Trade Delegation to India, the UN Statistical Quality Control Team of Experts, Shri L. K. Jha, Joint Secretary, Ministry of Commerce & Industry and Dr. Prespo Harsano and Mr. R. Kashmendi of Central Purchasing Office, Indonesia.

12.3 Other Activities — The officers of the ISI continue to contribute to the work of various specialist committees of organizations other than the ISI. Thus, Dr. Lal C. Verman, Director, ISI, was Chairman of the CSIR Plastics Research Committee and Member of the CSIR Statistical, Standards and Quality Control Committee, while Dr. K. L. Moudgill was member of the Salt Research Committee of the CSIR and the Experts Committee (Technological Research) of the Indian Central Oilseeds Committee.

The ISI was represented by its technical staff on a number of conferences and technical committees, such as

a) Conferences on tractors and agricultural implements and machinery, organized by the Ministry of Food & Agriculture,

b) Central Committee for Food Standards of the Ministry of Health,

c) Subcommittee to define standards for soil survey and Research Committee of the Central Board of Irrigation & Power,

d) Industrial housing study circle and industrial housing standards subcommittee of the Housing Panel, set up by the Planning Commission,

e) Public inquiry by the Tariff Commission into the question of continuance of protection to the plywood and plywood tea-chest industry,

f) Indian Central Sugarcane Committee, and

g) Wool Committee of the Indian Council of Agricultural Research.

Training courses in the SQC technique were conducted at Delhi, Calcutta, Madras and Bombay, from 13 October 1952 to 16 January 1953, by a 5-man team of SQC experts sent out by the United Nations Technical Assistance Administration. Dr. Lal C. Verman, Director, ISI, cooperated in the organization of these courses and served as member of the Central Co-ordinating Committee. Three ISI officers, namely Shri Maharaj Kishen, Assistant Director (Textiles), and Shri S. K. Sen and Shri M. V. Patankar, Technical Officers, were deputed to take the training at the Delhi centre.

13. FINANCE

13.1 Against an anticipated expenditure of Rs 8·06 lakhs, the actual amount spent was Rs 5·77 lakhs. The difference of Rs 2·29 lakhs was due to the fact that the Steel Economy and Statistical Sections, which were planned to be started during the year, could not be created on account of delay in recruiting suitable staff.

13.2 As regards the income, the Institution maintained a progressive increase in the revenue, and received Rs 6·92 lakhs against an anticipated income of Rs 7·35 lakhs. It collected Rs 2·19 lakhs as membership subscription for the calendar year 1952, as shown in Appendix 14.15 (page 52), as against the previous year's figure of Rs 2·06 lakhs.

13.2.1 As provided in the ISI Five-Year Plan, the Government of India contributed a sum of Rs 4·2 lakhs for the development of the ISI as against the last year's grant-in-aid of Rs 2·2 lakhs.

13.2.2 The ISI also continued to get substantial indirect financial support from individuals and organizations co-operating with it in its work. As members of ISI Sectional Committees and representatives of ISI, a very large number of specialists attended numerous meetings of technical committees of ISI, ISO and IEC within India and abroad. The travelling expenses in this connection were met either by the individuals themselves or their organizations. It is estimated that the indirect financial contribution, which the ISI received by its not being required to meet this essential expenditure, amounted approximately to Rs 2 lakhs during the year 1952-53.

13.3 Budget — The accounts of the ISI for the year 1952-53, as audited by the Comptroller and Auditor General of India and found correct, are detailed in Appendix 14.16 (page 54).

14. APPENDICES

APPENDIX 14.1

MEMBERS OF THE GENERAL COUNCIL (GC)

PRESIDENT (*Ex-officio*):	Shri T. T. Krishnamachari, Minister, Commerce & Industry, Government of India
VICE-PRESIDENTS:	Lala Shri Ram Dr. K. S. Krishnan
Secretary (*Ex-officio*):	Dr. Lal C. Verman, Director, ISI

Organization/Interest	*Representative*
a) *Government of India*	
MINISTRIES OF	
COMMERCE & INDUSTRY	Shri L. K. Jha, Joint Secretary
DEFENCE	Dr. D. S. Kothari, Scientific Adviser
FOOD & AGRICULTURE	Dr. B. C. Sen, Deputy Agricultural Marketing Adviser
HEALTH	Shri P. M. Menon, Joint Secretary
RAILWAYS	Shri B. S. Sindhu, Deputy Chief Controller of Standardization, Railway Board
TRANSPORT	Shri H. P. Mathrani, Consulting Engineer (Roads)
COMMUNICATIONS	Chief Engineer, Posts & Telegraphs
FINANCE	Shri K. R. P. Aiyangar, Joint Secretary
WORKS, HOUSING & SUPPLY	Shri N. G. Dewan, Superintending Engineer
INFORMATION & BROADCASTING	Shri C. L. Bhardwaj, Information Officer
NATURAL RESOURCES & SCIENTIFIC RESEARCH	Director, Indian Bureau of Mines
PRODUCTION	Shri P. M. Nayak, Deputy Secretary
IRRIGATION & POWER	Shri A. R. Khanna, Deputy Secretary
NOMINEES	Shri Biren Mookerji Lala Shri Ram
b) *Governments of States*	
PUNJAB	Director of Industries
BIHAR	Director of Industries
ASSAM	Secretary, Transport & Industries Department
MADRAS	Shri M. T. Raju, Director of Industries & Commerce
WEST BENGAL	Director of Industries
UTTAR PRADESH	Dr. D. R. Dhingra, Deputy Director of Industries (Education)
MADHYA PRADESH	Director of Industries
BOMBAY	Director of Industries
ORISSA	Shri V. S. Tilak, Director of Agriculture & Food Production
TRAVANCORE-COCHIN	Dr. P. V. Nair, Director of Industries & Commerce
SAURASHTRA	Shri M. V. Parekh, Director of Industries
PATIALA & EAST PUNJAB STATES UNION	Sardar Ranbir Singh, Secretary
HYDERABAD	Director of Commerce & Industries
RAJASTHAN	Shri Kanhiyalal Mittal, Deputy Secretary
JAMMU & KASHMIR	Director of Industries
MADHYA BHARAT	Director of Industries
MYSORE	Director of Industries & Commerce in Mysore
c) *Overseas Body*	
GOVERNMENT OF CEYLON	Mr. Egerton Christison Selvarayan Paul, Deputy Director of Industries
d) *Organizations or Bodies*	
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH	Dr. S. S. Bhatnagar, Director Dr. K. S. Krishnan, Director, National Physical Laboratory
INDIAN COUNCIL OF AGRICULTURAL RESEARCH	Agricultural Commissioner with the Government of India (Assistant Agricultural Commissioner with the Government of India — *Alternate*)
CENTRAL BOARD OF IRRIGATION & POWER	Member (Irrigation), Central Water & Power Commission
NATIONAL INSTITUTE OF SCIENCES OF INDIA	Prof. P. K. Kichlu, Delhi University

APPENDIX 14.1 — Members of GC — *Contd*

Organization/Interest	*Representative*
INSTITUTION OF ENGINEERS (India)	Shri E. A. Nadirshah, Chief Engineer, Concrete Association of India, Bombay Shri K. F. Antia
INDIAN INSTITUTE OF ARCHITECTS	Shri H. N. Dallas
FEDERATION OF INDIAN CHAMBERS OF COMMERCE	Dr. L. A. Bhatt, Technical Director, Biddle Sawyer & Co. (India) Ltd., Bombay Seth Ratanchand Hirachand, Director, Indian Hume Pipe Co. Ltd., Bombay
ASSOCIATED CHAMBERS OF COMMERCE	Mr. C. P. G. Wade, Burmah-Shell Oil Storage & Distributing Co. of India Ltd., New Delhi
ALL INDIA MANUFACTURERS ORGANIZATION	Shri Prabhu V. Mehta, Calico Dyeing & Printing Works, Bombay
INDIAN STATISTICAL INSTITUTE	Prof. P. C. Mahalanobis, Director
e) *Various Units of the ISI*	
TEXTILE DIVISION COUNCIL	Shri Bharat Ram, Delhi Cloth & General Mills Co. Ltd., Delhi Shri B. C. Munshaw Shri Surottam P. M. Hutheesing
ENGINEERING DIVISION COUNCIL	Shri S. L. Kirloskar, Col. A. G. C. Northcroft, Controller of Armament Development, Directorate of Technical Development, Ministry of Defence Prof. M. S. Thacker, Director, Indian Institute of Science, Bangalore
CHEMICAL DIVISION COUNCIL	Dr. A. Nagaraja Rao, Industrial Adviser (Chemicals), Ministry of Commerce & Industry Prof. T. R. Seshadri, Delhi University Dr. B. P. Pal, Director, Indian Agricultural Research Institute
BUILDING DIVISION COUNCIL	Shri A. N. Khosla, Chairman, Central Water & Power Commission Shri S. B. Joshi, Messrs S. B. Joshi & Co., Bombay Shri S. G. Telang, Manager, Indian Hume Pipe Co. Ltd., Delhi
f) *Sustaining Members*	
ASSOCIATED CEMENT COMPANIES LTD., BOMBAY	Dr. R. R. Hattiangadi
INDIAN ENGINEERING ASSOCIATION, CALCUTTA	Mr. H. Chiswell Jones, Metal Box of India Ltd., Calcutta
THE TATA IRON & STEEL CO. LTD., BOMBAY	Sir J. J. Ghandy, Director (Shri J. S. Vatchagandy, Chief Metallurgist — *Alternate*)
ENGINEERING ASSOCIATION OF INDIA, CALCUTTA	Shri B. K. Rohatgi
INDIAN JUTE MILLS ASSOCIATION, CALCUTTA	Mr. J. G. Walton, Thomas Duff & Co. (India) Ltd., Calcutta
g) *Sustaining Members (Associates)*	
ALL INDIA BICHROMATE MANUFACTURERS ASSOCIATION, BOMBAY	Shri Lalbhai Patel (Shri Purshotamdass Popatlal — *Alternate*)
h) *Ordinary Members*	Dr. K. M. Chakravarty
j) *Co-opted*	
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION	Dr. B. P. Pal, Director, Indian Agriculture Research Institute
DIRECTORATE GENERAL OF SUPPLIES & DISPOSALS	Mr. N. M. Buch, Director General
INDUSTRIAL ADVISER (Engineering), MINISTRY OF COMMERCE & INDUSTRY	Shri Jang Bir Singh

APPENDIX 14.2

MEMBERS OF THE EXECUTIVE COMMITTE (EC)

CHAIRMAN: Lala Shri Ram

Organization/Interest	*Representative*
VICE-PRESIDENTS	Lala Shri Ram, New Delhi Dr. K. S. Krishnan, New Delhi
CHAIRMAN, TDC	Shri Bharat Ram, Delhi
MEMBER, TDC	Shri Surottam P. M. Hutheesing, Ahmedabad
CHAIRMAN, EDC	Shri S. L. Kirloskar, Poona
MEMBER, EDC	Prof. M. S. Thacker, Bangalore
CHAIRMAN, CDC	Dr. A. Nagaraja Rao, New Delhi
CHAIRMAN, BDC	Shri A. N. Khosla, New Delhi

APPENDIX 14.2 — Members of EC — *Contd*

Organization/Interest	*Representative*
Ministry of Finance	Shri K. R. P. Aiyangar, Joint Secretary
Ministry of Commerce & Industry	Shri L. K. Jha, Joint Secretary
Ministry of Defence	Dr. D. S. Kothari, Scientific Adviser
Ministry of Food & Agriculture	Dr. B. C. Sen, Deputy Agricultural Marketing Adviser
Institution of Engineers (India)	Shri E. A. Nadirshah, Bombay
General Council (Elected)	Prof. P. K. Kichlu, Delhi Shri Prabhu V. Mehta, Bombay Shri B. C. Munshaw, Bombay Shri H. P. Mathrani, New Delhi
Secretary (*Ex-officio*)	Dr. Lal C. Verman, Director, ISI

APPENDIX 14.3

MEMBERS OF THE FINANCE COMMITTEE (FC)

Chairman (*Ex-officio*): Shri K. R. P. Aiyangar

Organization/Interest	*Representative*
Ministry of Finance	Shri K. R. P. Aiyangar, Joint Secretary
Chairman, TDC	Shri Bharat Ram, Delhi
Chairman, EDC	Shri S. L. Kirloskar, Poona
Chairman, CDC	Dr. A. Nagaraja Rao
Chairman, BDC	Shri A. N. Khosla
General Council (Elected)	Lala Shri Ram, New Delhi Dr. K. S. Krishnan, New Delhi Shri L. K. Jha, Joint Secretary, Ministry of Commerce & Industry Shri B. C. Munshaw, Bombay
Secretary (*Ex-officio*)	Dr. Lal C. Verman, Director, ISI

APPENDIX 14.4

MEMBERS OF THE ENGINEERING DIVISION COUNCIL (EDC)

Chairman:	Shri S. L. Kirloskar
Vice-Chairmen:	Shri V. Venkataramayya Shri S. A. Gadkary

Organization/Interest	*Representative*
a) *Ministries & Departments of the Government of India*	
Central Standards Office, Ministry of Railways	Shri V. Venkataramayya, Deputy Chief Controller of Standardization (Civil)
Central Public Works Department	Shri M. S. Mathur, Chief Engineer (Shri N. G. Dewan, Superintending Engineer — *Alternate*)
Central Water & Power Commission	Dr. R. C. Hoon, Deputy Director Shri V. Venugopalan, Senior Project Officer (Shri H. S. Kulkarni, Deputy Chief Engineer — *Alternate*)
Indian Bureau of Mines	Shri V. R. Khedker, Director
Roads Organization, Ministry of Transport	Shri H. P. Mathrani, Consulting Engineer
Posts & Telegraphs Directorate, Ministry of Communications	Chief Engineer (Shri H. N. Shrivastava, Additional Chief Engineer — *Alternate*)
Civil Aviation Directorate, Ministry of Communications	Shri D. Chakraverti, Deputy Director General (Dr. P. Nilakantan, Deputy Director — *Alternate*)
Directorate of Technical Development, Ministry of Defence	Col. A. G. C. Northcroft, Controller of Armament Development
Directorate of Mechanical Engineering, Ministry of Defence	Col. W. J. Redmond-Lyon, Deputy Director
Engineer-in-Chief's Branch, Ministry of Defence	Brig. J. S. Dhillon, Brigadier Engineer, Staff
Directorate of Ordnance Factories, Ministry of Defence	Mr. P. Cutler, Superintendent, Ordnance Factory, Muradnagar

APPENDIX 14.4 — Members of EDC — *Contd*

Organization/Interest	*Representative*
Indian Air Force, Ministry of Defence	Sq./Ldr. O. P. Bhardwaj, Assistant Director, A.I.S. Technical Service (Research & Development), Air Headquarters
Indian Navy, Ministry of Defence	Dr. G. E. Gale, Scientific Adviser (Navy)
Directorate General of Supplies & Disposals (Inspection Wing)	Mr. F. Ashmore, Deputy Director General (Inspection)
Ministry of Commerce & Industry (Development Wing)	Shri Jang Bir Singh, Industrial Adviser (Engineering)
Directorate General of Health Services, Ministry of Health	Shri Ramesh S. Mehta, Superintending Engineer
Head of Agricultural Engineering Machinery, Ministry of Food & Agriculture	Shri C. P. Srivastava, Divisional Engineer (Inspection)
Forest Research Institute	Shri C. R. Ranganathan, President
All India Radio, Ministry of Information & Broadcasting	Shri B. V. Baliga, Wireless Adviser (Shri S. S. Aiyer, Director, Frequency Assignment — *Alternate*)
All India Council for Technical Education, Ministry of Education	Representative
b) *Organizations or Bodies*	
Council of Scientific & Industrial Research	Dr. Ernest Zipkes, Director, Central Road Research Institute Dr. K. S. Krishnan, Director, National Physical Laboratory (Dr. K. N. Mathur, Assistant Director — *Alternate*)
Central Board of Irrigation & Power	Shri M. L. Aggarwal, Secretary
Institution of Engineers (India)	Mr. H. J. Mulleneux, Messrs Mulleneux & Mulleneux Ltd., Bombay Shri S. A. Gadkary, Member (Hydro-Electric), Central Water & Power Commission Shri S. V. Ramaswami, Superintending Engineer, Bangalore (Dr. Shiv Narayan — *Alternate*)
Indian Roads Congress	Shri H. P. Sinha, Deputy Consulting Engineer
Indian Institute of Architects	Shri H. N. Dallas, Bombay
Indian Institute of Metals	Dr. D. P. Antia, Honorary Secretary
Mining, Geological & Metallurgical Institute of India	Mr. W. J. Asker, The General Electric Co. of India Ltd., Calcutta
Indian Mining Association	Shri G. M. Ray, Secretary, Standing Coalfields Committee
Indian Engineering Association	Mr. B. F. Goodchild, Messrs Saxby & Farmer (India) Ltd., Calcutta
Engineering Association of India	Prof. S. K. Roy, Jadavpur (Shri M. M. Kaul, Matchwel Electricals (India) Ltd., Delhi — *Alternate*)
All India Manufacturers' Organization	Shri K. G. Khosla, Messrs K. G. Khosla & Co., New Delhi Shri S. L. Kirloskar, Poona
Association of Indian Industries	Shri N. H. Mapara, Messrs Mapara Parekh & Co., Bombay
Indian Electrical Manufacturers' Association	Shri R. L. Kirloskar, Deputy General Manager, Messrs Kirloskar Electric Co. Ltd., Bangalore (Shri T. S. Sitapati, National Insulated Cable Co. of India Ltd., Calcutta — *Alternate*)
Steel Re-rolling Mills Association of India	Shri B. N. Gupta, Messrs Prakash Engineering Co. & Rolling Mills, Agra
Machine Tool Manufacturers' Association	Shri M. B. Jambhekar, Managing Director, Mysore Kirloskar Ltd., Harihar, Mysore
Coal Consumers' Association of India	Shri S. C. Ghosh, Superintendent Collieries, The Tata Iron & Steel Co. Ltd., Jamshedpur
c) *Industries*	
Iron & Steel	Shri J. S. Vatchagandhy, Chief Metallurgist, The Tata Iron & Steel Co. Ltd., Jamshedpur (Dr. D. R. Dhanbhoora, Superintendent of Research — *Alternate*) Shri B. A. Narayana Murti, Works Manager, The Mysore Iron & Steel Works, Bhadravati
Mechanical Engineering	Mr. A. J. Lund, General Manager, Cooper Engineering Ltd., Satara Shri N. K. Joshi, Messrs Kirloskar Bros. Ltd., Kirloskarvadi
Non-Ferrous Metals	Shri C. D. Jhamb, Director, Kamani Metals & Alloys Ltd., Calcutta Mr. J. G. Berry, Works Manager, Indian Copper Corporation Ltd., Ghatsila (Mr. R. M. Hannah, Assistant Works Manager — *Alternate*)
Electrical	Shri B. K. Rohatgi, Calcutta Mr. F. F. Van Rhijn, Managing Director, Philips Electrical Co. (India) Ltd., Calcutta
Mining	Shri D. Samanta, Patherdih Sudamdih Colliery, Patherdih
Agricultural Machinery & Implements	Shri S. K. Datta, Planning & Production Engineer, The Tata Iron & Steel Co. Ltd., Jamshedpur

APPENDIX 14.4 — Members of EDC — *Contd*

Organization/Interest	*Representative*
Shipbuilding	Mr. E. Smith, Superintendent & Manager, The Hooghly Docking & Engineering Co. Ltd., Howrah
Telephone & Telegraph Engineering	Shri R. Natarajan, Indian Telephone Industries, Durvani Nagar, Bangalore
Radio & Electronics	Shri R. K. Phatak, Radio Services, Bombay (Shri H. K. L. Arora, Radio Centre, Delhi — *Alternate*)
Aircraft	Dr. V. M. Ghatage, Chief Designer, Hindustan Aircraft Ltd., Bangalore (Shri K. T. G. Iyengar, Chief Project Engineer — *Alternate*) (Shri N. Srinivasan, Chief of Aerodynamics — *Alternate*)
Automobile	Shri Lakshmipati Misra, General Manager, Hindustan Motors Ltd., Calcutta
Cinematography	Shri B. M. Tata, Rajkamal Kala Mandir, Bombay
Scientific Instruments	Shri P. C. Mahajan, Works Manager, National Instruments Factory, Calcutta
Watches & Clocks	Shri N. C. Dass, Secretary, Anglo-Swiss Watch Co., Calcutta
Chemical Engineering	Shri J. D. Adhia, Chemical Engineer, Tata Chemicals Ltd., Mithapur (Shri C. M. Shah, Construction Engineer — *Alternate*)
d) *Co-opted*	
Government Test House, Alipore, Calcutta	Director
Metals Committee, Council of Scientific & Industrial Research	Director, National Metallurgical Laboratory
Indian Institute of Science, Bangalore	Prof. M. S. Thacker, Director
Engineering Research Department, Hyderabad	Director
Federation of Electricity Undertakings of India	Shri N. P. Kirpalani, Deputy Chief Engineer & Manager, Bombay Suburban Electric Supply Co. Ltd., Bombay
Signals Directorate, Army Headquarters, Ministry of Defence	Col. P. N. Luthra, Deputy Director, Signals

APPENDIX 14.5

MEMBERS OF THE TEXTILE DIVISION COUNCIL (TDC)

Chairman: Shri Bharat Ram

Organization/Interest	*Representative*
a) *Ministries & Departments of the Government of India*	
Office of the Textile Commissioner	Shri M. C. Dutt, Deputy Director (Production) (Shri A. K. Das Gupta — *Alternate*)
Directorate General of Supplies & Disposals (Inspection Wing)	Shri Randhir Singh, Assistant Director of Inspection (Textiles) (Shri S. N. Das Gupta — *Alternate*)
Government Test House, Alipore, Calcutta	Director
Directorate of Technical Development, Ministry of Defence	Col. N. N. Chopra, Controller of Stores Development, MGO's Branch Lt.-Col. A. N. Kapur, Chief Superintendent (Development) Dr. T. S. Subramanian, Superintendent, Technical Development Establishment Laboratories, Kanpur
Forest Research Institute	Dr. R. V. Bhat, Officer-In-Charge, Cellulose & Paper Branch
All India Council for Technical Education	Head of the Textile Department, Delhi Polytechnic
Directorate of Marketing & Inspection	Dr. B. C. Sen, Deputy Agricultural Marketing Adviser to the Government of India
b) *Organizations or Bodies*	
Institution of Engineers (India)	Shri P. V. S. Iyengar, Engineering Adviser to Sir J. P. Srivastava Group of Industries
Council of Scientific & Industrial Research	Dr. B. K. Vaidya, Assistant Director, Ahmedabad Textile Industry's Research Association, Ahmedabad
Indian Council of Agricultural Research	Dr. B. N. Uppal, Agricultural Commissioner with the Government of India (Dr. Sham Singh — *Alternate*)
Indian Central Cotton Committee	Shri R. G. Saraiya, Bombay (Shri Chimanlal B. Parikh — *Alternate*)
Technological Laboratory, Indian Central Cotton Committee	Dr. C. Nanjundayya, Director, Technological Laboratory, Bombay
Indian Central Jute Committee	Dr. B. C. Kundu, Director, Jute Agricultural Research Institute

APPENDIX 14.5 — Members of TDC — *Contd*

Organization/Interest	*Representative*
TRAVANCORE COIR MATS & MATTING MANUFACTURERS' ASSOCIATION	Mr. R. S. Smith, Messrs Darragh Smail & Co. Ltd., Alleppey (Mr. H. Sutton — *Alternate*)
TEXTILE ASSOCIATION (INDIA)	Shri G. N. Vaidya, Manager, Victoria Mills Ltd., Bombay
AHMEDABAD MILLOWNERS' ASSOCIATION	Shri Surottam P. M. Hutheesing, Ahmedabad
SOUTHERN INDIA MILLOWNERS' ASSOCIATION	Shri K. Sreenivasan, The Kasthuri Mills Ltd., Coimbatore
BENGAL MILLOWNERS' ASSOCIATION	Shri B. M. Bagri, Calcutta
MASKATI CLOTH MARKET ASSOCIATION	Shri Ramanlal Fakirchand Mashruwala, Honorary Secretary (Shri Chandulal Jeshingbhai Shah, Joint Secretary — *Alternate*)
FEDERATION OF WOOLLEN MANUFACTURES IN INDIA	Shri Maganlal B. Patel, Shri Dinesh Mills Ltd., Baroda
INDIAN JUTE MILLS ASSOCIATION	Mr. J. M. Duncan, Messrs Bird & Co. Ltd., Calcutta
INDIAN JUTE MILLS ASSOCIATION RESEARCH INSTITUTE	Dr. W. G. Macmillan, Research Director
INDIAN HEMP ASSOCIATION	Shri B. L. Jalan, Calcutta
EAST INDIA COTTON ASSOCIATION	Shri Madan Mohan R. Ruia, Ram Narain & Sons Ltd., Bombay
CENTRAL SILK BOARD, INDIA	Shri R. Sharma, Secretary
(c) *Industries*	
COTTON TEXTILES	Shri Bharat Ram, Managing Director, Delhi Cloth & General Mills Co. Ltd., Delhi Shri Arvind Narottam, The Asoka Mills Ltd., Ahmedabad (Shri C. H. Desai, Arvind Mills Ltd., Ahmedabad — *Alternate*
COTTON GROWING	Shri Raje J. R. Deshmukh, East Khandesh
JUTE TEXTILES	Dr. P. B. Sarkar, Director, Technological Research Laboratories, Indian Central Jute Committee, Calcutta
JUTE GROWING	Shri Indu Bhusan Mazumdar, President, Polarbat Union Board & Union Jute Committee, 24 Parganas
*SILK	Shri A. P. Rao, General Manager, Government Silk Weaving Factory, Mysore
ARTIFICIAL SILK AND OTHER SYNTHETIC FIBRES AND TEXTILES	Shri D. K. Khetani, Khetani Textile Industries Ltd., Bombay
HEMP AND COIR	Mr. J. P. Robertson, Manager, Ganges Rope Co. Ltd., Calcutta
WOOL	Shri T. N. Khaitan, Raymond Woollen Mills Ltd., Bombay (Mr. H. Bolton — *Alternate*)
TEXTILE MACHINERY	Shri D. P. Mandelia, Director, Texmaco (Gwalior) Ltd., Gwalior
TEXTILE MILL STORES	Shri B. K. Mehta, Kaliandas Jagmohandas, Bombay
KNITTED GARMENTS & HOSIERY	L. Kidar Nath Bhakoo, Lever Hosiery, Ludhiana
(d) *Co-opted*	
IMPERIAL CHEMICAL INDUSTRIES (INDIA) LTD.	Mr. J. P. Ward, Bombay
GOVERNMENT OF UTTAR PRADESH	Shri J. C. Seth, Principal, Government Central Weaving Institute, Banaras
EAST INDIA CARPET CO. LTD.	Director, East India Carpet Co. Ltd., Amritsar
FEDERATION OF GUJARAT MILLS & INDUSTRIES	Shri B. B. Joshi, New India Industries Ltd., Baroda
TEXTILE MANUFACTURERS' ASSOCIATION	Shri B. K. Munjal, Amritsar
NATIONAL ART SILK MILLS LTD.	Shri S. G. Natu, National Art Silk Mills Ltd., Bombay
TEXIND CORPORATION LTD.	Shri B. C. Munshaw, Bombay
UPPER INDIA CHAMBER OF COMMERCE	Shri S. D. Garg, Lakshmiratan Cotton Mills Co. Ltd., Kanpur (Shri S. N. Bagala, The Muir Mills Co. Ltd. — *Alternate*

APPENDIX 14.6

MEMBERS OF THE CHEMICAL DIVISION COUNCIL (CDC)

CHAIRMAN: Dr. A. Nagaraja Rao
VICE-CHAIRMAN: Col. N. N. Chopra

Organization/Interest	*Representative*
(a) *Ministries & Departments of the Government of India*	
DIRECTORATE GENERAL OF HEALTH SERVICES, MINISTRY OF HEALTH	Shri P. M. Nabar, Drugs Controller (India [Shri P. S. Ramachandran, Assistant Drugs Controller (India — *Alternate*]
INDIAN AGRICULTURAL RESEARCH INSTITUTE	Dr. B. P. Pal, Director

* Nomination of the second representative is awaited.

APPENDIX 14.6 — Members of CDC — *Contd*

Organization/Interest	*Representative*
Forest Research Institute	Dr. S. V. Puntambekar, Officer-in-Charge, Chemistry of Forest Products Branch
Central Standards Office, Ministry of Railways	Shri R. G. Bhatawadekar, Joint Director, Railway Testing and Research Centre, Chittaranjan
Directorate of Technical Development, Ministry of Defence	Col. N. N. Chopra, Controller of Stores Development, MGO's Branch
Directorate of Medical Services, Ministry of Defence	Surgn. Lt. Comdr. B. H. Marten, Office of the DGAFMS
Ministry of Commerce & Industry	Dr. A. Nagaraja Rao, Industrial Adviser (Chemicals) [Shri N. Srinivasan, Development Officer (Chemicals) — *Alternate*]
Government Test House, Alipore, Calcutta	Director (or his representative)
All-India Council for Technical Education, Ministry of Education	Head of the Department of Applied Science, Delhi Polytechnic
b) *Organizations or Bodies*	
Council of Scientific & Industrial Research	Dr. J. Gupta, Assistant Director, Inorganic Chemistry Division, National Chemical Laboratory of India Dr. Krishna Gopal Mathur, Assistant Director, Survey & Information Division, National Chemical Laboratory of India Dr. Mata Prasad, Principal, The Institute of Science
National Institute of Sciences of India	Prof. T. R. Seshadri, Professor of Chemistry, Delhi University (Dr. B. Mukerji, Director, Central Drugs Research Institute — *Alternate*)
Indian Council of Medical Research	Dr. J. N. Mukerji, New Delhi
Medical Council of India	Dr. K. N. Sinha, Professor of Pharmacology, Medical College, Nagpur
Indian Chemical Society	(In abeyance)
Institution of Engineers (India)	Dr. H. L. Roy, Calcutta
All-India Manufacturers' Organization	Shri C. P. Gupta, Raj Traders Ltd., Jaipur City
Indian Chemical Manufacturers' Association	Dr. I. B. Amin, Director, Alembic Chemical Works Co. Ltd., Baroda Shri Madan Lal H. Vakil, C/o Tata Chemicals Ltd., Calcutta
Pharmaceutical & Allied Manufacturers & Distributors' Association Ltd.	Mr. W. C. Caswell, Messrs Allen & Hanburys Ltd., Bombay
Indian Paint Manufacturers' Association	Shri S. S. Nayudu, Solar Paint & Varnish Manufacturing Co., Belghuria (Shri G. K. Mukherjee, Messrs Murarka Paint & Varnish Works Ltd., Calcutta — *Alternate*)
Paint Federation	Shri P. K. Adhikari, Messrs Jenson & Nicholson (India) Ltd., Calcutta (Mr. W. E. Norris, Technical Director, Goodlass Wall Ltd., Bombay — *Alternate*)
Indian Paper Mills' Association	Shri V. Poddar, Works Manager, Rohtas Industries Ltd., Dalmianagar (Dr. J. C. Aggarwal, Shri Gopal Paper Mills Ltd., P.O. Jamnanagar — *Alternate*)
Indian Rubber Board	Shri Lalit Mohan Jamnadas, Indian Rubber Industries Association, Bombay
Textile Association (India)	Shri Y. G. Pathak, Manager, Vasant Vijay Mills, Bombay (Shri Narhari H. Shah, Ahmedabad — *Alternate*)
c) *Industries*	
Coal Carbonization and Tar Products	Mr. C. J. Fielder, General Manager, Shalimar Tar Products (1935) Ltd., Calcutta (Mr. Basil Gray, Manager for North India — *Alternate*) Dr. S. K. Sircar, Works Manager, Bararee Coke Co. Ltd., Kusunda
Heavy Chemicals	Shri M. B. Bhagvat, Works Superintendent, Tata Chemicals Ltd., Mithapur (Shri J. D. Adlia, Chemical Engineer — *Alternate*) Shri C. Krishnamurthy, The Mysore Chemicals & Fertilizers Ltd., Mysore
Petroleum Products	Shri J. Chopra, Burmah-Shell Oil Storage & Distributing Co. of India Ltd., New Delhi (Mr. W. E. G. Humphrey — *Alternate*) Mr. A. A. Robinson, Standard-Vacuum Oil Co., New Delhi (Shri S. S. Gambhir — *Alternate*)
Oils, Fats, Greases and Soaps	Mr. P. T. John, Manager, Tata Oil Mills Co. Ltd., Tatapuram (Dr. M. B. Ichaporia, Acting Manager, Tata Oil Mills Co. Ltd., Bombay — *Alternate*) Dr. J. S. Badami, The Swastik Oil Mills Ltd., Bombay (Shri B. G. Pendharkar — *Alternate*)
Plastics and Rubber	Mr. E. N. Wood, Acting Technical Manager, Dunlop Rubber Co. (India) Ltd., Sahaganj (Shri P. K. Bose, Section Manager, Laboratories, Sahaganj — — *Alternate*) Shri B. M. Thakkar, The Industrial Plastics Corporation Ltd., Bombay (Shri R. C. Shah, Indian Plastics Ltd., Bombay — *Alternate*)

APPENDIX 14.6 — Members of CDC — *Contd*

Organization/Interest	*Representative*
Leather and Tanning	Shri T. Abdul Wahid, Deputy Secretary, Southern India Skin & Hide Merchants Association, Madras Shri Pyare Lal Jha, Chief Leather Chemist, Messrs Cooper Allen & Co. Kanpur
Paints, Varnishes, Pigments and Related Products	Shri R. B. Ghosh, P. C. Chanda & Co. Ltd., Calcutta Mr. W. E. Norris, Technical Director and Chief Chemist, Goodlass Wall Ltd., Bombay (Shri S. V. Sathaye, Factory Manager — *Alternate*)
Drugs and Pharmaceutical Products	Dr. Mahdi Hassan, Chemical, Industrial & Pharmaceutical Laboratories Ltd., Bombay (Dr. R. H. Usmani — *Alternate*) Dr. U. P. Basu, Director, Bengal Immunity Research Institute, Calcutta (Shri N. De Sarkar, Chemical Engineer — *Alternate*)
Glass and Ceramics	Shri T. Gupta, Hind Lamps Ltd., Shikohabad Shri A. K. Ganpule, General Manager, Parshuram Pottery Works Ltd., Morvi
Paper	Shri P. K. Nanda, Shri Gopal Paper Mills Ltd., P.O., Jamnanagar
Photographic Products	(In abeyance)
Wood Preservatives	do
Disinfectants	Shri J. Chakravarti, Lister Antiseptics & Dressings Co. (1928) Ltd., Calcutta
Fertilizers	Shri N. D. Gopinath, Fertilizers & Chemicals, Travancore, Ltd., Alwaye (Shri K. K. Sankunny Nair — *Alternate*)
Fine Chemicals	Shri N. Adhikari, Bengal Chemical & Pharmaceutical Works Ltd., Calcutta (Shri A. Lahiri — *Alternate*)
Dyestuffs	Mr. J. P. Ward, Imperial Chemical Industries (India) Ltd., Bombay [Mr. J. D. Ilett, Imperial Chemical Industries (India) Ltd., Calcutta — *Alternate*]
d) *Co-opted*	
Coal Consumers' Association of India	Shri G. S. Gupta, Resident Director, Central Distillery & Chemical Works Ltd., Meerut Cantt
Indian Rubber Industries Association	Dr. S. R. Agrawal, Orient Rubber Industries Ltd., Bombay (Shri K. V. Modak — *Alternate*)
Indian Central Sugarcane Committee	Prof. J. M. Saha, Director, Indian Institute of Sugar Technology, Kanpur (Dr. K. S. G. Doss, Physical Chemist — *Alternate*)
R. V. Briggs & Co. Ltd.	Mr. E. J. Breuleux, Managing Director
Directorate General of Supplies & Disposals	Shri K. C. Bhattacharya, Deputy Director (Chemicals), Government Test House, Alipore, Calcutta [Shri K. K. Chatterjee Assistant Director (Chemicals) — *Alternate*]
Directorate General, Ordnance Factories	Mr. R. Huddart, Deputy Director General
Naval Headquarters	Dr. G. E. Gale, Scientific Adviser (Navy) [Dr. V. V. Kelkar, Senior Scientist (Navy — *Alternate*]

APPENDIX 14.7

MEMBERS OF THE BUILDING DIVISION COUNCIL (BDC)

Chairman:	Shri A. N. Khosla
Vice-Chairman:	Shri E. A. Nadirshah

Organization/Interest	*Representative*
a) *Ministries & Departments of the Government of India*	
Directorate of Technical Development, Ministry of Defence	(DTD do not wish to nominate a representative at this stage)
Engineer-in-Chief's Branch, Ministry of Defence	Shri R. S. Mehandru
Roads Organization, Ministry of Transport	Shri H. P. Sinha, Additional Consulting Engineer (Roads)
Central Public Works Department	Shri M. S. Mathur, Chief Engineer (Shri N. G. Dewan, Superintending Engineer, Planning Circle — *Alternate*)
Central Water & Power Commission	Shri A. N. Khosla, Chairman [Shri Kanwar Sain, Member (Designs) — *Alternate*]

APPENDIX 14.7 — Members of BDC — *Contd*

Organization/Interest	*Representative*
Bureau of Standards (Medical Institutions), Ministry of Health	Shri J. D. Shastri, Senior Architect
Forest Research Institute	Captain N. J. Masani
Central Standards Office, Ministry of Railways	Shri V. Venkataramayya, Deputy Chief Controller (Civil)
All India Council for Technical Education, Ministry of Education	Shri N. K. Mitra
Directorate General of Supplies & Disposals (Ispection Wing)	Mr. F. Ashmore, Deputy Director General, (Inspection) (Shri R. N. Sarma, Director of Inspection — *Alternate*)
b) *Organizations or Bodies*	
Council of Scientific & Industrial Research	Dr. K. Billig, Director, Central Building Research Institute, Roorkee Shri Teja Singh Malik, Chairman, Local Planning Committee of the Central Building Research Institute
Central Board of Irrigation & Power	Shri M. L. Aggarwal, Secretary
Indian Roads Congress	Shri S. B. Joshi, Messrs S. B. Joshi & Co., Bombay (Shri H. P. Sinha, Ministry of Transport, New Delhi — *Alternate*)
Institution of Engineers (India)	Shri Chandulal C. Dangoria, Retd. Superintending Engineer, Hyderabad-Dn. Shri Akshoy Bose, Partner, Messrs Ballardie, Thompson & Matthews, Calcutta
Indian Institute of Architects	Shri H. N. Dallas, Bombay
The Concrete Association of India	Shri E. A. Nadirshah, Chief Engineer
c) *Industries*	
Bituminous Products	Shri Sujan Singh, Burmah-Shell Oil Storage & Distributing Co. of India Ltd., New Delhi (Shri J. Chopra — *Alternate*) Mr. C. J. Fielder, Shalimar Tar Products (1935) Ltd., Calcutta
Builders' Hardware and Ironmongery	Shri V. P. Mehta, Messrs Purshottam Ramji & Sons Ltd., Calcutta (Shri Yousuf Mowjee, Messrs M. C. Mowjee & Co. — *Alternate*) Shri S. F. Desai, Godrej & Boyce Mfg. Co. Ltd., Bombay
*Timber	Shri Inder Singh, Timber Traders' Association, Pathankot
Clay and Ceramic Products	Mr. A. W. Fisher, Messrs Burn & Co. Ltd., Calcutta (Shri M. D. Raja Gopalan — *Alternate*) Shri M. K. Ganpule, Messrs Parshuram Pottery Works Ltd., Wankaner
Steel Works and Structural	Mr. William Miller, Braithwaite, Burn & Jessop Construction Co. Ltd., Calcutta-1 (Mr. Paul Massarik — *Alternate*) Shri A. M. Kapadia, Director, Structural Engineering Works Ltd., Bombay (Shri K. K. Mitter, Director, National Structurals Ltd., Calcutta — *Alternate*)
Building Contractors	Shri M. V. Joglekar, Deputy Chief Engineer, Hindustan Construction Co. Ltd., Bombay (Shri R. G. Gandhi — *Alternate*) Shri Sardar Chand, Honorary Secretary, Central Builders Association, New Delhi
Cement Manufacture	Dr. R. R. Hattiangadi, Associated Cement Co. Ltd., Bombay (Shri V. N. Pai, Manager, Banmore Cement Works—*Alternate*)
Lime and Gypsum	Shri M. L. Suri, Northern India Lime Marketing Association, Dehra Dun
Natural Stone and Quarry Products	Shri B. Kedia, Blackstone Products Ltd., Calcutta
Plumbing	Shri B. K. Malhan, Managing Director, John Tinson & Co. Ltd., New Delhi
Electrical Wiring	Shri T. S. Sitapati, National Insulated Cable Co. of India Ltd., Calcutta (Mr. P. H. Bolland, Greaves Cotton Crompton Parkinson Ltd., Calcutta — *Alternate*)
Heating, Ventilating and Refrigeration	Shri J. C. Kapur, Air Conditioning Corporation Ltd., Bombay (Shri J. C. Basu Mallick, Principal, Kanchanpara Technical School, Kanchanpara — *Alternate*)
Cement Products	Shri S. G. Gokhale, Manager, The Indian Hume Pipe Co. Ltd., Delhi (Shri D. F. Darcga — *Alternate*)
Asbestos Products (Building)	Mr. W. H. Rooksby, Asbestos Cement Ltd., Bombay
Illumination	Mr. W. A. Ives, Lighting Advisory Service, Associated Electrical Industries (India) Ltd., Calcutta (Shri A. Chatterjee — *Alternate*)
d) *Co-opted*	
The Concrete Association of India (Research & Development Department)	Shri K. F. Antia, Bombay

* Nomination of the second representative is being referred to the GC.

APPENDIX 14.8

POSITION OF STANDARDS UNDER EACH SECTIONAL COMMITTEE AS ON 31 MARCH 1953

Sl No.	Sectional Committee	†Stage							Total
		B*	B	C	D	E	F	G	
1	EC 1	Dissolved January 1949							
2	EC 2	2	3	1	–	–	–	3	9
3	EC 3	2	–	–	–	–	–	1	3
4	EC 4	–	–	–	–	–	–	1‡	1
5	EC 5	–	–	–	–	–	–	1	1
6	EC 6	Submitted report April 1949							
7	EC 7	–	10	1	–	–	–	–	11
8	EC 8	1	–	–	–	–	–	–	1
9	EDC 1	5	–	–	–	–	–	2	7
10	EDC 3	9	4	5	5	1	1	10	35
11	EDC 4	3	17	9	–	6	2	29	66
12	EDC 5	14	–	7	3	2	–	3	29
13	EDC 6	5	2	2	3	–	–	3	15
14	EDC 8	3	9	4	4	1	–	4	25
15	EDC 10	1	2	–	–	–	–	–	3
16	EDC 11	16	2	1	4	–	–	–	23
17	EDC 12	2	13	12	2	1	1	3	34
18	EDC 13	5	–	–	2	–	–	–	7
19	EDC 14	–	1	2	–	–	–	–	3
20	EDC 16	4	–	–	–	–	–	–	4
21	EDC 17	1	1	1	6	–	–	5	14
22	EDC 19	15	3	7	1	–	–	–	26
23	EDC 20	4	–	–	1	–	–	–	5
24	EDC 21	6	–	–	–	–	–	2	8
25	EDC 22	2	–	1	1	–	–	–	4
26	EDC 24	1	–	–	–	–	–	2	3
27	EDC 25	2	3	1	2	–	–	4	12
28	EDC 26	24	17	3	1	–	–	–	45
29	EDC 27	3	1	–	1	1	–	–	6
30	EDC 28	9	2	–	–	–	1	3	15
31	ECTDC 4	1	3	–	2	–	–	–	6
32	TDC 1	20	15	–	7	24	2	7	75
33	TDC 2	29	6	–	1	1	–	19	56
34	TDC 3	5	1	–	1	–	–	2	9
35	TDC 4	4	21	–	1	1	–	2	29
36	TDC 5	32	4	1	4	–	–	10	51
37	TDC 6	16	12	1	6	1	–	1	37
38	TDC 7	–	5	–	1	–	–	–	6
39	TDC 8	–	1	1	–	–	–	1	3
40	TDC 9	4	–	1	–	–	–	–	5
41	TDC 10	16	9	–	–	–	–	–	25
42	TDC 11	12	17	–	–	–	–	–	29
43	TDC 12	–	–	–	1	–	–	1	2
44	TDC 13	24	–	–	–	–	–	–	24
45	CDC 1	1	–	–	–	–	–	–	1
46	CDC 2	3	7	7	4	1	2	3	27
47	CDC 3	14	3	10	6	12	–	28	73
48	CDC 4	6	3	6	1	3	1	11	31
49	CDC 6	21	–	5	–	5	–	–	31
50	CDC 8	6	3	7	12	10	7	169	214
51	CDC 9	–	1	–	–	–	–	3	4
52	CDC 10	26	2	2	–	3	–	–	33
53	CDC 11	1	4	1	3	6	–	–	15
54	CDC 12	4	3	5	–	–	–	3	15
55	CDC 13	1	–	–	4	–	–	6	11
56	CDC 14	1	–	2	–	2	–	–	5
57	CDC 15	16	10	–	–	–	–	–	26
58	CDC 16	6	–	10	2	–	–	–	18
59	CDC 17	2	3	–	–	–	–	–	5
60	CDC 18	1	–	–	–	–	–	–	1
61	CDC 19	1	–	–	–	–	–	–	1
62	CEDC 1	10	6	9	5	5	–	8	43
63	CETDC 3	–	3	–	–	–	–	–	3
64	BDC 1	6	–	–	–	–	–	–	6
65	BDC 2	3	2	4	–	3	–	2	14
66	BDC 3	9	3	2	–	–	–	–	14
67	BDC 4	–	1	–	–	–	–	–	1
68	BDC 5	6	1	1	–	–	–	–	8
69	BDC 6	2	–	–	–	–	–	–	2
70	BDC 7	6	–	–	–	–	–	–	6
71	BDC 8	1	–	–	–	–	–	–	1
72	BDC 9	14	3	3	1	–	2	4	27
73	BDC 10	2	–	–	–	–	–	2	2
74	BDC 11	1	2	–	–	–	–	–	3
75	BDC 12	1	6	–	–	–	–	–	7
76	BDC 13	2	4	1	–	–	–	–	7
77	BDC 14	2	–	–	–	–	–	–	2
78	BDC 15	3	–	2	–	3	–	10	18
79	BDC 16	1	–	–	–	–	–	–	1
80	BDC 17	6	–	–	–	–	–	–	6
81	BDC 18	8	3	–	–	–	–	–	11
82	BDC 19	–	–	–	1	–	–	–	1
83	BCDC 2	4	1	–	1	2	–	6	14
	Total	499	258	138	100	94	19	372	1480
	Last Year's Total	509	189	130	83	92	9	291	1303

† Stage B* — Subjects accepted for standardization (not yet subdivided into titles for standards)
„ B — Draft standards under preparation
„ C — Draft standards compiled but not yet circulated
„ D — Draft standards in circulation
„ E — Draft standards finalized but not yet under print
„ F — Standards under print
„ G — Standards published

‡ Report of Committee EC 4 on Weights and Measures has been published and submitted to the Government of India for consideration.

Note — The figures relating to the BDC include the standards which had been published or were at various stages of preparation by the Sectional Committees transferred to the BDC from the EDC and the CDC.

APPENDIX 14.9

NEW SUBJECTS CONSIDERED

Sl No.	Subject	Proposed by	Allotted to Technical Committee
	Executive Committee (EC)		
1	Indexes for Periodicals	EC 2 — Documentation Sectional Committee	EC 2 — Documentation
2	Principles of Library Classification	do	do
3	Sugar	Indian Central Sugarcane Committee	EC 8 — Sugar

APPENDIX 14.9 — New Subjects Considered — *Contd*

Sl No.	Subject	Proposed by	Allotted to Technical Committee
	Engineering Division Council (EDC)		
4	Air-circuit Breakers up to 660 V non FLP	Secretary, Standing Coal Fields Committee	Under investigation
5	Athletic Goods such as Discus, Hammer, Shot, Javelin, etc	EDC 28 — Sports Goods Sectional Committee	EDC 28 — Sports Goods
6	Ball Bearing	National Bearing Co. Ltd., Jaipur	Accepted
7	Bed Switches	EDC 8 — Electrical Accessories Sectional Committee	EDC 8 : 2 — Wiring Accessories
8	Belt Fasteners for Transmission Belts	Bengal Belting Works Ltd.	Under investigation
9	Black Bolts and Nuts — Small, Hexagonal and Square, BSW and BSP	Directorate General of Supplies & Disposals	EDC 27 — Screw Threads
10	Blacking Foundry	Central Standards Office, Ministry of Railways	Under investigation
11	Boilers	Dr. K. M. Chakravarty	Not accepted
12	Bore Hole Turbine Pumps	Shri N. B. Amin, Baroda	do
13	Carbon Brushes for Electric Fans	Technical Development Establishment, Laboratories, Kanpur	Under investigation
14	Cartridge Fuses (Electrical)	Central Standards Office, Ministry of Railways	Accepted
15	Cash Boxes	EDC 22 — Safes Sectional Committee	EDC 22 — Safes
16	Cast Steel Wheels and Axles for Coal Tubs	Bharatia Electric Steel Co. Ltd.	Under investigation
17	Centrifugal Pumps	i) Nawab Zain Yar Jung Bahadur ii) Shri N. B. Amin, Baroda	Not accepted
18	Coal Mining Machinery	Mr. L. J. Barraclough	Accepted
19	Code of Practice for the Installation and Maintenance of Electrical Machinery	EDC 6 — Electrical Plant and Switchgear Sectional Committee	EDC 6 : 12 — Code of Practice for the Installation and Maintenance of Electrical Machinery
20	Cricket Stumps	EDC 28 — Sports Goods Sectional Committee	EDC 28 — Sports Goods
21	Crude Oil Engine-driven Road Rollers	Director General, Supplies & Disposals	Not accepted
22	Cutlery	Technical Development Establishment (Stores), Kanpur	Accepted
23	Electric Call Bells and Buzzers	EDC 8 — Electrical Accessories Sectional Committee	EDC 8 : 1 Domestic Electrical Appliances
24	Electric Saucepans	do	do
25	Electric Toasters	do	do
26	Engineering Products used in Coal Industry	Indian Mining Association	Accepted
27	Engines, Internal Combustion (using crude oil) Method of Testing also	Director General, Supplies & Disposals	EDC 14 — Internal Combustion Engines
28	Equipment Connected with Track and Field Sports	Chief Inspector of Physical Education, Orissa	EDC 28 — Sports Goods
29	Equipment Used in Gymnastics	do	do
30	Ferro Manganese	Central Standards Office, Ministry of Railways	EDC 3 — Basic Ferrous Metals
31	Foundry Mould Boxes	Bharatia Electric Steel Co. Ltd.	Under investigation
32	Furnaces	Dr. K. M. Chakravarty	Not accepted
33	H.T. and L.T. Porcelain Bushings for Indoor and Outdoor Transformers	General Electric Co. of India Ltd.	EDC 6 — Electrical Plant and Switchgear
34	Identification Colours and Symbols for Pipes Conveying Fluids	Chief Adviser, Factories, Ministry of Labour	Under investigation
35	Insulation Bricks	EDC 17 — Refractories Sectional Committee	EDC 17 : 7 — Insulation Firebricks
36	Iron & Steel Tubular Poles for Telegraph and Telephonic Purposes	Director General, Supplies & Disposals	Accepted
37	Iron-Clad Switches	EDC 8 — Electrical Accessories Sectional Committee	EDC 8 : 2 Wiring Accessories
38	Lift-Pumps	i) Nawab Zain Yar Jung Bahadur ii) Messrs Bhanna Mal Gulzari Mal	Not accepted
39	Low and Medium Lifts	Director General, Supplies & Disposals	do
40	Mining Type Transformers	Secretary, Standing Coalfields Committee	Under investigation
41	Mortar Grinding Mill	Director General, Supplies & Disposals	Not accepted
42	Nibs	Kulkarni Bros, Bombay	Under investigation

APPENDIX 14.9 — New Subjects Considered — *Contd*

Sl. No.	Subject	Proposed by	Allotted to Technical Committee
43	Nuts, Bolts, Screws, Rivets, etc	Shri M. P. Kanga	EDC 27 — Screw Threads
44	Oil Sticks	Central Standards Office, Ministry of Railways	EDC 13 — Abrasives
45	Packing for Plant and Machinery for Shipment Overseas	Director General, Supplies & Disposals	Accepted
46	Paste Valve Grinding (in 2 oz tubes) (coarse and fine)	Central Standards Office, Ministry of Railways	EDC 13 — Abrasives
47	Petrol Motor Engine-Driven Trailer Fire Pumps, Essential Elements	Director General, Supplies & Disposals	Accepted
48	Plumbago, Ordinary	Central Standards Office, Ministry of Railways	Under investigation
49	Plumbago, Superior	do	do
50	Precious Metals and Hall Marking of Jewellery	Prof. N. P. Gandhi	do
51	Pressure Stoves	EDC 10 — Oil-Burning Domestic Appliances Sectional Committee	EDC 10 — Oil-Burning Domestic Appliances
52	Procedure for Testing Internal Combustion Engines	EDC 14 — Internal Combustion Engines Sectional Committee	EDC 14 — Internal Combustion Engines
53	Protective Packaging	Imperial Chemical Industries (India) Ltd	Not accepted
54	Reciprocating Pump	Director General, Supplies & Disposals	do
55	Reciprocating Steam Engines for Electrical Purposes	Director General, Supplies & Disposals	Not accepted
56	Reels for Covered, Solid, Round Electrical Winding Wires	EDC 5 — Electrical Conductors and Insulators Sectional Committee	EDC 5 : 2 — Instruments and Machine Winding Wires
57	Reflectors and Shades, EL	Central Standards Office, Ministry of Railways	Not accepted
58	Schedule of Sizes of Composite Containers	do	Accepted
59	Schedule of Sizes of Tins and Cans	do	do
60	Screw Threads for Aviation Purposes	EDC 27 — Screw Threads Sectional Committee	EDC 27 — Screw Threads
61	Seals, Lead Circular Type for General Purposes	Director General, Supplies & Disposals	EDC 4 — Basic Non-Ferrous Metals
62	Six-Inch Round Dry Type Cells	EDC 25 — Batteries Sectional Committee	EDC 25 : 1 — Primary Cells
63	Soils Engineering	Engineer-in-Chief, Ministry of Defence	Not accepted
64	Soldering Irons	EDC 8 — Electrical Accessories Sectional Committee	EDC 8 : 1 — Domestic Electrical Appliances
65	Standard Colour Scheme for Identification of Cables	EDC 5 — Electrical Conductors and Insulators Sectional Committee	EDC 5 — Electrical Conductors and Insulators
66	Steam Operated Road Rollers— Coal or Wood Fired	Director General, Supplies & Disposals	Not accepted
67	Steel Cupboards	EDC 22 — Safes Sectional Committee	EDC 22 — Safes
68	Structural Aluminium Alloys	Aluminium Hindustan Ltd., Delhi	EDC 4 : 1 — Aluminium and Aluminium Alloys
69	Sugarcane Crushers	Messrs Bhana Mal Gulzari Mal	Not accepted
70	Taper Pins	EDC 27 — Screw Threads Sectional Committee	EDC 27 — Screw Threads
71	Thermos Flasks	Nawab Zain Yar Jung Bahadur	Accepted
72	Three-pin Plugs	EDC 8 — Electrical Accessories Sectional Committee	EDC 8 : 2 — Wiring Accessories
73	Tin Plate and Iron Containers	Printing & Metal Works, Delhi	Accepted
74	Underfeed Screw Type Stokers	Director General, Supplies & Disposals	Not accepted
75	Washers	EDC 27 — Screw Threads Sectional Committee	EDC 27 — Screw Threads
76	Weighing Machines, Platform	Director General, Supplies & Disposals	Accepted
77	Zip Fastners	i) Link Industries, Madras ii) Indian Tariff Commission	Under investigation
	Textile Division Council (TDC)		
78	Coir Ropes and Cordages	Indian Rope Manufacturers' Asscciation, Calcutta	TDC 14 — Ropes and Cordages
79	Cricket Matting	Shri S. K. Rajagopalan (Member BDC 2)	Under investigation
80	Fatigue Test for Coated Fabrics	Dr. V. B. Chipalkatti (Member, TDC 5)	do
84	Handkerchief	Shri C. J. Soneji (Member, TDC 1)	Deferred till the next meeting of TDC

APPENDIX 14.9 — New Subjects Considered — *Contd*

Sl No.	Subject	Proposed by	Allotted to Technical Committee
155	Painting of Iron and Steel — Code for	Ministry of Transport	BDC 8 — Building Finishes
156	Pozzolanas	BDC 2 — Cement and Concrete Sectional Committee	BDC 16 — Pozzolanas
157	Pipes, Lead — for Water	Directorate General of Supplies & Disposals	Referred to EDC
158	Pipes and Specials, Steel — for Water Mains and Hydraulic Power Pipe Lines	do	do
159	Potteries for Household	Prof. G. R. Paranjpe (Member, GC)	Deferred
160	Pressed Hard Building Boards	Central Standards Office, Ministry of Railways	BDC 20 — Wood Products
161	Rubber Flooring	Indian Rubber Manufacturers Ltd., Calcutta	BDC 5 — Non-Cement Floors and Roof Coverings
162	Road Bridges	Indian Roads Congress	BDC 14 — Bridges
163	Road Signs and Standards	Directorate General of Supplies & Disposals	Dropped
164	Road Engineering	Prof. G. R. Paranjpe	do
165	Road Slabs, Concrete	Central Standards Office, Ministry of Railways	Withdrawn by the Proposer
166	Road Stones and Chippings (Sizes)	do	do
167	Roofing Hardware Fittings	do	BDC 15 — Builder's Hardware
168	Refrigerator — Safety Standards for	BDC 18 — Refrigeration and Air-Conditioning Sectional Committee	BDC 18 — Refrigeration and Air-Conditioning
169	Road Tar — Emulsions of Road Tar and Road Tar Asphaltic Bitumen Mixtures for Penetration (Grouting and Semi-Grouting)	Central Standards Office, Ministry of Railways	BCDC 2 — Bitumen and Tar Products
170	Scales and Sizes of Drawings for Highway Projects	Indian Roads Congress	Withdrawn by the Proposer
171	Slates, Roofing	Central Standards Office, Ministry of Railways	BDC 5 — Non-Cement Floors and Roof Coverings
172	Stones, Natural, for Buildings (Dimension and Workmanship)	do	BDC 6 — Building Stones and Bricks
173	Structural Steel, Hot-Rolled Sections, Fabricated Light-Weight Sections and Typical Structural Designs	Planning Commission	BDC 7 — Structural Steel
174	Structural Steel — Codes of Practice for the Use of	do	do
175	Structural Steel — Reduction of Factors of Safety	do	do
176	Structural Steel — Use of Welding in Place of Riveting	Planning Commission	BDC 7 — Structural Steel
177	Softwood Joinery — Grading of	Central Standards Office, Ministry of Railways	BDC 9 — Timber
178	Stress Graded — Softwood Timber — Sizes of	do	do
179	Structural Safety of Buildings	Ganges Galvanizing Works, Howrah	BDC 12 — Functional Requirements of Buildings
180	Sound Insulation Standards for Buildings	ISI Directorate	do
181	Structural Steel — Use of — in Building, Welding and Cutting Terms, and Code of Practice for Welding	EDC 20 — Drawings Sectional Committee	BDC 7 — Structural Steel
182	Screws, Black and Galvanized, Mild Steel, Square or Hexagonal Head Coach, with Gimlet Points	Directorate General of Supplies & Disposals	BDC 15 — Builder's Hardware
183	Synthetic Resinous Flooring Products, Vinyl Plastics, etc	BDC 5 — Non-Cement Floors and Roof Coverings Sectional Committee	BDC 5 — Non-Cement Floors and Roof Coverings
184	Sluice Valves for Water Works	BDC 3 — Domestic Sanitary Appliances and Fittings Sectional Committee	BDC 3 — Domestic Sanitary Appliances and Fittings
185	Terminology in Buildings	ISI Directorate	BDC 1 — Terminology, Notations and Drawings
186	Trade Headings and Specifications for Building Work (Sequence)	Central Standards Office, Ministry of Railways	do
187	Tiles, Roofing and Clay Plain Roofing Tiles	ISI Directorate	BDC 5 — Non-Cement Floors and Roof Coverings

APPENDIX 14.9 — New Subjects Considered — *Contd*

Sl No.	Subject	Proposed by	Allotted to Technical Committee
188	Timber in Building Construction Floors	Central Standards Office, Ministry of Railways	BDC 9 — Timber
189	Tanks	BDC 18 — Refrigeration and Air-Conditioning Sectional Committee	BDC 18 — Refrigeration and Air-Conditioning
190	Tiles — Glazed Earthenware Wall Tiles (Dimensions and Workmanship)	Central Standards Office, Ministry of Railways	BDC 3 — Domestic Sanitary Appliances and Fittings
191	Tarmacadam and Tar Carpets (Granite Lime Stone and Slag Aggregate)	do	BDC 2 — Bitumen and Tar Products
192	Tacks	Central Standards Office, Ministry of Railways	BDC 15 — Builder's Hardware
193	Tar and Bitumen — Methods for Testing of	BCDC 2 — Bitumen and Tar Products Sectional Committee	BCDC 2 — Bitumen and Tar Products
194	Unit Weights of Building Materials, Schedule of	Central Standards Office, Ministry of Railways	BDC 1 — Terminology, Notations and Drawings
195	Ventilation Standards for Buildings	ISI Directorate	BDC 12 — Functional Requirements of Buildings
196	Wood Preservatives to Fungi — Methods of Test for Toxicity of	Central Standards Office, Ministry of Railways	BDC 9 — Timber
197	Wood Windows and Casement Doors	do	BDC 11 — Doors, Windows and Building Furniture
198	Weirs, Measurement by Weirs such as West Weirs, etc	Central Board of Irrigation & Power	BDC 17 — Fluid Flow Measurement
199	Water Meters	Directorate General of Supplies & Disposals	BDC 3 — Sanitary Appliances and Fittings
200	Welding — Electric Arc	Messrs Garlick & Co., Bombay	BDC 7 — Structural Steel
201	Wire Nails	BDC 15 — Builder's Hardware Sectional Committee	BDC 15 — Builder's Hardware
202	Water Coolers — Safety Standards for	BDC 18 — Refrigeration and Air-Conditioning Sectional Committee	BDC 18 — Refrigeration and Air-Conditioning

APPENDIX 14.10

TECHNICAL COMMITTEES, AND STANDARDS UNDER PREPARATION

The number and name of each Sectional Committee and Subcommittee is followed, within brackets, by the name of the chairman and convener, respectively; and then by the dates of meetings held, if any. The title of every standard or draft standard is preceded by a letter which indicates the stage in the processing of the standard. Thus :

F Standard under print.
E Draft standard finalized but not yet under print.
D Draft standard formulated and in circulation.
C Draft standard compiled, but not yet circulated.
B Draft standard under preparation.

(*For Indian Standards published during the year, please see Appendix* 14.13)

Executive Committee (Committees not attached to a specific Division Council)

EC 2 Documentation (Dr. S. R. Ranganathan)
- EC 2: 1 Paragraph Numbering (Dr. S. R. Ranganathan)
- EC 2: 2 Documentary Reproduction (Dr. S. R. Ranganathan)
- EC 2: 3 Layout of Periodicals (Dr. S. R. Ranganathan)
- EC 2: 4 U.D.C. Numbers (Dr. S. R. Ranganathan)
- EC 2: 5 Abbreviations for Titles of Periodicals (Shri B. N. Sastry)
- EC 2: 6 Alphabetization (Dr. S. R. Ranganathan)
- EC 2: 7 Transliteration (Dr. S. R. Ranganathan)
- EC 2: 8 Principles of Classification (Shri S. Das Gupta)
  - **C** Transliteration of Cyrillic Characters
  - **B** Indexes of Periodicals
  - **B** Indexes of Books
  - **B** Indexes of Abstracting Periodicals

EC 3 Quality Control and Industrial Statistics (Prof. P. C. Mahalanobis)

EC 4 Weights and Measures (Dr. J. C. Ghosh)
- EC 4: 1 Weights and Measures (Dr. Lal C. Verman)

EC 5 Style Manual (Dr. Lal C. Verman)

EC 6 Export Goods (Dr. T. G. Shirname)

EC 7 Food Grain Storage Structures (Lala Shri Ram) 20 May 1952
- EC 7: 1 Northern Region Food Grain Storage (Shri D. P. Nayar) 9 Dec 1952
- EC 7: 2 Central Region Food Grain Storage (Shri D. P. Nayar) 7 Oct 1952
- EC 7: 3 Eastern Region Food Grain Storage (Dr. P. L. Anand) 5 Nov 1952
- EC 7: 4 Southern Region Food Grain Storage (Shri D. V. Rao) 15 Oct 1952
- EC 7: 5 Coastal Region Food Grain Storage (Shri B. M. Laxmipathy) 22 Nov 1952
- EC 7: 6 Codes of Storage Practice (Shri K. R. Sontakay) 24-25 Feb 1953
  - **C** Code of Practice for Construction of Food Grain Storage Structures for Places Having Geographical

Conditions as are met in Deccan Plateau, such as parts of the States of Hyderabad, Mysore, Madras, Bombay, Madhya Pradesh, etc
- B Code of Practice for Construction of Food Grain Storage Structures for Places Having Geographical Conditions as are met in Cold and Hilly Regions such as those of Jammu & Kashmir, Himachal Pradesh, Punjab, UP, Assam, etc
- B Code of Practice for Construction of Food Grain Storage Structures for Places Having Geographical Conditions as are met in Hot and Dry Plains, such as those of Rajasthan, Punjab, UP, Madhya Bharat, Madhya Pradesh, Vindhya Pradesh, Saurashtra, etc
- B Code of Practice for Construction of Food Grain Storage Structures for Places Having Geographical Conditions as are met in Tropical Climate, such as those of Bihar, Orissa, Bengal, Assam, Manipur, Tripura, Madhya Pradesh, etc
- B Code of Practice for Construction of Food Grain Storage Structures for Places Having Geographical Conditions as are met in Coastal Areas, such as those of Travancore-Cochin, Madras, Coorg, etc
- B Code of Practice for Maintenance of Trade and Government Storage Structures and Improvement of Existing Defective Storage Structures
- B Code of Practice for Method of Storage, Godown Hygiene and Maintenance of Stocks
- B Code of Practice for Control of Pests of Stored Grain
- B Code of Practice for Methods of Handling Food Grains in Transit
- B Code of Practice for Re-conditioning of Deteriorated Food Grains
- B Code of Practice for Improvement of Existing Rural Storage Structures, wherever possible

EC 8 Sugar Grading

Engineering Division Council

EDC 1 Engineering Standards (Dr. K. S. Krishnan)
- EDC 1: 1 Standard Atmospheric Conditions for Testing (Dr. K. S. Krishnan)

EDC 3 Basic Ferrous Metals (Shri J. S. Vatchagandhy) 4-6 Aug 1952, 30-31 Mar 1953
- EDC 3: 1 Sampling Methods (Dr. A. V. Sukhatme)
- EDC 3: 2 Methods of Chemical Analysis (Dr. G. V. L. N. Murty) 30-31 Mar 1953
- EDC 3: 3 Methods of Physical Tests (Dr. G. P. Contractor)
- EDC 3: 4 Pig Iron and Ferro Alloys (Dr. A. K. Mallick)
- EDC 3: 5 Rolled Steel Products (Dr. D. R. Dhanbhoora)
- EDC 3: 6 Iron Castings and Malleable Castings (Shri K. K. Nathani) 4-6 Aug 1952, 30-31 Mar 1953
- EDC 3: 7 Steel Castings (Shri H. R. Kapur) 30-31 Mar 1953
- EDC 3: 8 Galvanized Steel Sheets (Shri H. N. Coomer)
- EDC 3: 9 Steel Wire, Black and Galvanized (Shri S. C. Lahiry) 30-31 Mar 1953
- EDC 3: 10 Expanded Metal (Ferrous) Dr. G. P. Contractor) 4-6 Aug 1952
- EDC 3: 11 Special Quality Steel Sheets (Dr. D. R. Dhanbhoora) 23 Sep 1952, 30-31 Mar 1953
- EDC 3: 12 Electrical Steel Sheets (Dr. D. R. Dhanbhoora) 8 Dec 1952
  - F Methods of Chemical Analysis of Pig Iron, Cast Iron and Plain Carbon and Low-Alloy Steels (IS: 228-1952)
  - E Expanded Metal (Steel) for General Purposes
  - D Method of Testing for Uniformity of Coating by Preece Test on Zinc-coated Iron and Steel Articles
  - D Malleable Iron Castings
  - D Alloy Austenitic Manganese Steel Castings
  - D Hard-Drawn Steel Wire for Springs
  - D Steel Sheets for Special Purposes
  - C Expanded Metal (Steel) for Concrete Reinforcement
  - C Vertically Cast Pipes for Water, Gas and Sewage and Special Castings
  - C Black Plates for Tinning and Tin Plates
  - C Electrical Steel Sheets
  - C Methods of Testing Electrical Steel Sheets
  - B Mild Steel Oxy-Acetylene Welding Rods
  - B Covered Electrodes for Metal-Arc Welding of Mild Steel
  - B Bare Electrodes for Metal-Arc Welding of Mild Steel
  - B Extra Deep Drawing Quality Steel Sheets

EDC 4 Basic Non-Ferrous Metals (Dr. N. Anjaneyulu) 28-30 Apr 1952, 24-25 Nov 1952
- EDC 4: 1 Aluminium and its Alloys (Dr. P. Nilakantan) 10 Oct 1952
- EDC 4: 2 Copper and Its Alloys (Shri D. S. Murty) 28-30 Apr 1952
- EDC 4: 3 Lead, Tin, Antimony and Their Alloys (Shri N. P. Gandhi) 28-30 Apr 1952
- EDC 4: 4 Aluminium Cooking Utensils (dissolved during the year)
- EDC 4: 5 Methods of Chemical Analysis of Non-Ferrous Metals (Mr. E. J. Breuleux) 28-30 Apr 1952
- EDC 4: 6 Methods of Physical Tests of Non-Ferrous Metals (Dr. N. Anjaneyulu)
  - F Lead Pipes for other than Chemical Purposes (IS: 404-1952)
  - F Methods of Chemical Analysis of Slab Zinc and Zinc Base Alloys (IS: 406-1952)
  - E Brass Tubes for General Purposes
  - E Rolled Brass Plate, Sheet, Strip and Foil
  - E Aluminium and Aluminium Alloy Ingots and Castings for General Engineering Purposes
  - E Methods of Chemical Analysis of Copper
  - E Methods of Chemical Analysis of Brasses and Bronzes
  - E Revision of IS: 288-1951 Copper Rods for Boiler Stays
  - C Leaded Nickel Brass and Leaded Nickel Bronze Sand Castings
  - C Brass for Gravity Die-Castings (Including Naval Brass)
  - C Silicon Bronze Ingots and Castings
  - C Copper Bus Bars
  - C Phosphor Bronze Sheets, Rods and Wire
  - C Manganese Bronze Rods, Bars and Shapes
  - C Zinc Base Alloy Die-Castings
  - C Methods of Chemical Analysis of Antimony
  - C Tensile Testing of Metals (Non-Ferrous)
  - B Non-Ferrous Non-Magnetic Materials
  - B Lead Sheets for Special Purposes
  - B Lead Pipes for Special Purposes
  - B Methods of Chemical Analysis of Tin Ingots
  - B Methods of Chemical Analysis of Silver Solder
  - B Methods of Chemical Analysis of White Metal Bearing Alloys
  - B Methods of Chemical Analysis of Solders and Brazing Solder
  - B Wrought Aluminium and Aluminium Alloys, Forgings
  - B Wrought Aluminium and Aluminium Alloys, Sheet and Strip
  - B Wrought Aluminium and Aluminium Alloys, Tubes
  - B Wrought Aluminium and Aluminium Alloys, Wire for Rivets
  - B Wrought Aluminium and Aluminium Alloys, Welding Wire
  - B Wrought Aluminium and Aluminium Alloys, Wire for General Purposes
  - B Wrought Aluminium and Aluminium Alloys, Bars, Rods and Sections
  - B Wrought Aluminium and Aluminium Alloys, Plate
  - B Bronze Castings, Steam and Valve
  - B Chemical Lead

EDC 5 Electrical Conductors and Insulators (Shri V. Venugopalan) 13-16 June 1952, 28-29 Nov 1952
- EDC 5: 1 Bare Conductors (Shri V. Venugopalan)
- EDC 5: 2 Instruments and Machine Winding Wires (Shri T. S. Sitapati) 29 Apr 1952
- EDC 5: 3 Insulated Cables (Mr. D. J. F. McIntosh)
- EDC 5: 4 Insulators (Shri S. K. Roy)
  - E Bare Annealed High Conductivity Copper Wire for Electrical Machinery and Apparatus
  - E Rubber-Insulated Cables and Flexible Cords for Electric Power and Lighting (for working voltages up to and including 11 kv)
  - D Enamelled High Conductivity Annealed Round Copper Wire (Oleo-Resinous Enamel)
  - D Cotton Covered High Conductivity Annealed Round Copper Wire
  - D Reels for Covered Solid, Round Electrical Winding Wire

- **C** Varnished Cambric Insulated Cables for Electricity Supply
- **C** PVC Insulated Cables and Flexible Cords for Electric Power and Lighting up to 250 Volts
- **C** Porcelain Insulators for Overhead Lines with a Nominal Voltage of 1,000 and Above
- **C** Paper-Insulated Power Cables up to 33 kv
- **C** Trailing Cables (for Mining Purposes) and Flexible Trailing Cables
- **C** Spindles for Insulators
- **C** Low Voltage Porcelain Insulators

EDC 6 Electrical Plant and Switchgear (Mr. F. Wade-Cooper) 6-9 Mar 1953

- EDC 6: 1 Standard Frequency and Voltages (Shri V. R. Raghavan) 6-9 Mar 1953
- EDC 6: 2 Marking and Arrangement for Switchgear (Mr. H. C. Hardy)
- EDC 6: 3 Industrial Motors (Shri Ravi L. Kirloskar)
- EDC 6: 4 Fractional Horse Power Motors (Mr. J. H. Yeadon)
- EDC 6: 5 Transformers for Power and Lighting (Shri P. R. Deshpande)
- EDC 6: 6 Electric Fans (Shri B. K. Rohatgi) 30 Jan 1953
- EDC 6: 7 Tropic Proofing (Mr. R. Allan)
- EDC 6: 8 Graphical Symbols (Mr. H. C. Hardy)
- EDC 6: 9 Insulation (Mr. R. Allan)
- EDC 6: 10 Starters and Control Gear
- EDC 6: 11 Bus Bars and Bus Bar Connections in Air, Oil or Compound, Low and Medium Tensions
- EDC 6: 12 Code of Practice for the Installation and Maintenance of Electrical Machinery (Mr. F. Wade-Cooper)
  - **D** Standard Frequency and Voltages
  - **D** A.C. and Universal Fractional Horse Power Electric Motors, with Class ' A ' Insulation
  - **D** Table-Type Electric Fans
  - **C** Standard Recommendations for Tropic Finish of Switchgear
  - **C** General Principles and Basis of Determining the Temperature Limits in the Rating of Electrical Machinery, with Class ' A ' Insulation
  - **B** Transformers for Power and Lighting
  - **B** Pedestal and Ventilation Fans and Air Circulators

EDC 8 Electrical Accessories (Dr. M. B. Sarwate) 8-9 Aug 1952

- EDC 8: 1 Domestic Electrical Appliances (Shri H. S. Kulkarni)
- EDC 8: 2 Wiring Accessories (Dr. G. N. Bhattacharya)
- EDC 8: 3 Fuses (Dr. N. V. Raghunath)
- EDC 8: 4 Electric Lamps (Shri Sachin Sen) 8-9 Aug 1952
- EDC 8: 5 Steel Conduits and Fittings for Electrical Purposes (Shri P. N. Deobhakta)
  - **E** Tungsten Filament General Lighting Service Electric Lamps
  - **D** Two- and Three-Terminal Ceiling Roses
  - **D** Reversible Type Two-Pin Plugs and Sockets Without Earthing Connections
  - **D** Electric Kettles
  - **D** Electric Irons
  - **C** Single Pole Tumbler Switches
  - **C** Reversible Protected Type Two-Pin Plugs and Sockets with Earthing Connections
  - **C** Fuses
  - **C** Tungsten Filament Electric Lamps for Railway Rolling Stock
  - **B** Soldering Irons
  - **B** Electric Toasters
  - **B** Electric Saucepans
  - **B** Electric Call Bells and Buzzers
  - **B** Three-Pin Plugs
  - **B** Bed Switches
  - **B** Iron Clad Switches
  - **B** Telephone Switch Board Lamps
  - **B** Steel Conduits and Fittings for Electrical Wiring

EDC 10 Oil Burning Domestic Appliances (Shri T. R. Gupta) 4 June 1952

- EDC 10: 1 Hurricane Lanterns (Shri S. Sen)
- EDC 10: 2 Oil Pressure Lamps (Shri K. Biswas)
  - **B** Hurricane Lanterns
  - **B** Oil Pressure Lamps

EDC 11 Machine Tools and Small Tools (Shri S. L. Kirloskar)

- EDC 11: 1 Machine Tool, Elements and Materials (Shri K. N. Sharma)
- EDC 11: 2 Expectation of Accurate Performance of Machine Tools (Shri K. I. N. Iyengar)
- EDC 11: 3 Small Cutting Tools (Shri R. N. Gandhi)
- EDC 11: 4 Safety Codes (Chief Mechanical Engineer, Central Railway, Bombay)
  - **D** Drilling Jig Bushes
  - **D** T-Slots, T-Bolts and T-Nuts
  - **D** Twist and Straight Fluted Drills
  - **D** Combined Drills and Countersinks
  - **C** Reamers
  - **B** Machine Tools
  - **B** Safety Code for Machine Tools

EDC 12 Hand Tools (Shri A. B. Banerjee) 27-29 Aug 1952

- EDC 12: 1 Earth Work Tools (Shri S. K. Datta)
- EDC 12: 2 Blacksmiths' Tools (Shri J. M. Marathe) 27-29 Aug 1952
- EDC 12: 3 Tool Handles (Shri V. D. Limaye) 26 Aug 1952
- EDC 12: 4 Estate Implements (Shri B. Chaudhuri)
  - **F** Punches, Round (IS: 413-1952)
  - **E** Anvils
  - **D** Smiths' Bits
  - **D** Hand Hammers
  - **C** Crow-Bars and Claw-Bars
  - **C** Hoes
  - **C** Brace Smith
  - **C** Smiths Tongs
  - **C** Swage Blocks and Stand
  - **C** Smith's Fullers
  - **C** Smith's Flatters
  - **C** Smith's Swages
  - **C** Tool Handles
  - **C** Shears
  - **C** Weeding Forks
  - **C** Pruning Knives, Hooked and Curved
  - **B** Vices — Bench and Hand
  - **B** Screw-Drivers
  - **B** Pliers
  - **B** Plane, Iron
  - **B** Chisels, Wood
  - **B** Augers
  - **B** Axes
  - **B** Adzes
  - **B** Bits, Carpenters'
  - **B** Trowels
  - **B** Plumb Line and Bob
  - **B** L-Square
  - **B** Mammoth and Phaoras

EDC 13 Abrasives (Shri S. L. Kirloskar)

- EDC 13: 1 Grinding Wheels (Shri S. S. Iyengar)
- EDC 13: 2 Coated Abrasives (Shri K. I. N. Iyengar)
  - **D** Grinding Wheels and Segments
  - **D** Coated Abrasives

EDC 14 Internal Combustion Engines (Prof. H. A. Havemann) 25 Aug 1952

- EDC 14: 1 Testing of Internal Combustion Engines (Prof. H. A. Havemann)
  - **C** Piston Rings
  - **C** Identification Numbers for Cylinders of Internal Combustion Engines (other than Aircraft Engines)
  - **B** Testing of Internal Combustion Engines

EDC 16 Gas Cylinders (Dr. M. K. Maitra)

EDC 17 Refractories (Dr. H. K. Mitra) 4-5 July 1952, 2-3 Feb 1953

- EDC 17: 1 Sampling (Shri T. W. Talwalkar) 2-3 Feb 1953
- EDC 17: 2 Refractories for Cement Manufacturing Industry — dissolved during the year
- EDC 17: 3 Refractories for Railways (Shri A. Banerji)
- EDC 17: 4 Refractories for Navy (Dr. V. V. Kelkar) 2-3 Feb 1953
- EDC 17: 5 Refractories for Non-Ferrous Metals Industry — dissolved during the year
- EDC 17: 6 Refractories for Glass Industry (Shri Y. P. Varshney)
- EDC 17: 7 Insulation Firebricks (Shri Y. P. Varshney)
  - **D** Silica Bricks for General Purposes
  - **D** Methods of Sampling and Testing Refractories
  - **D** Revision of IS: 6-1949 Moderate Heat Duty Fireclay Refractories, Group ' A '

- **D** Revision of IS: 7-1949 Moderate Heat Duty Fireclay Refractories, Group 'B'
- **D** Revision of IS: 8-1949 High Heat Duty Fireclay Refractories
- **D** Fireclay Refractories for Furnaces of the Marine Type Boilers of the Navy
- **C** Classification of Clays for Ceramic Industries
- **B** Insulation Firebricks

EDC 19 Radio Equipment (Shri B. V. Baliga) 9 Feb 1953

- EDC 19: 1 Capacitors and Resistors (Shri T. V. Ramamurti)
- EDC 19: 2 Radio Receivers (Shri S. V. V. Swamy) 7 Feb. 1953
- EDC 19: 3 Radio Insulators, etc — dissolved during the year
- EDC 19: 4 Transformers and Chokes (Shri R. K. Tandan) 6-8 Feb 1953
- EDC 19: 5 Testing Facilities — dissolved during the year
- EDC 19: 6 Nomenclature — dissolved during the year
- EDC 19: 7 Tropic Proofing (Dr. M. B. Sarwate) 29 May 1952, 6 Feb 1953
- EDC 19: 8 Co-ordinating Subcommittee (Shri B. V. Baliga)
  - **D** Fixed Paper Dielectric Capacitors
  - **C** Mica Capacitors
  - **C** Measurement on Broadcast Radio Receivers
  - **C** Recommendations for Minimum Electrical Performance of Broadcast Radio Receivers
  - **C** Safety Requirements of Broadcast Radio Receivers
  - **C** Low Power, Low Voltage Mains Transformers for Radio Receivers, Amplifiers, Small Transmitters and Similar other Purposes
  - **C** Audio Output Transformers for Use in Radio Receivers, Amplifiers, Small Transmitters and other Purposes
  - **C** Basic Climatic Tests for Radio Components
  - **B** Fluorescent Lamp Chokes
  - **B** Standard Sizes of Transformers and Choke Laminations
  - **B** Radio Receivers Used for Community Listening Purposes

EDC 20 Drawings (Shri N. R. Junnarkar)

- EDC 20: 1 Drawings (Shri H. P. Sinha)
  - **D** Code of Practice for General Engineering Drawings

EDC 21 Mica (Shri Chandmull Rajgarhia) 2-3 May 1952

- EDC 21: 1 Mica (Shri Chandmull Rajgarhia)
- EDC 21: 2 Standard Samples of Mica (Shri Chandmull Rajgarhia) 3 May 1952

EDC 22 Safes (Shri S. F. Desai) 20 June 1952, 26 Feb 1953

- **D** Safes
- **C** Locks for Safes

EDC 24 Manganese Ore (Dr. M. S. Krishnan)

- EDC 24: 1 Sampling and Chemical Analysis (Shri D. S. Naidu)

EDC 25 Batteries (Shri G. D. Joglekar) 14 Apr 1952

- EDC 25: 1 Primary Cells (Shri G. D. Joglekar)
- EDC 25: 2 Secondary Cells (Shri G. D. Joglekar)
  - **D** Stationary Accumulators (Lead-Acid Type)
  - **D** Leclanché Type Dry Batteries for Radio Receivers
  - **C** 6-Inch Round Dry Cells
  - **B** Hard Rubber Containers for Lead-Acid Storage Batteries
  - **B** Lead Acid Storage Batteries for Heavy Duty, for Motors, Coaches and Buses and for Diesel Starting
  - **B** Lead Acid Storage Batteries for Motor Cycles, Side Car Combinations and Three Wheeled Vehicles

EDC 26 Bicycles, Bicycle Parts and Accessories (Shri Jang Bir Singh)

- EDC 26: 1 Tubular Parts (Shri K. N. Sharma)
- EDC 26: 2 Friction Parts (Shri S. M. Gandhi)
- EDC 26: 3 Wheels and Rubber Parts (Mr. E. N. Wood)
- EDC 26: 4 Accessories (Shri Janki Das Kapur) 24 May 1952
  - **D** Bicycle Tube Valves
  - **C** Bicycle Chains
  - **C** Bicycle Rims
  - **C** Tubular Parts (Bicycles)
  - **B** Spokes
  - **B** Nipples
  - **B** Bicycle Hubs
  - **B** Bicycle Pedals
  - **B** Rim Tapes
  - **B** Saddles
  - **B** Bells
  - **B** Lamps
  - **B** Pump and Pump Clips
  - **B** Bicycle Carriers
  - **B** Bicycle Stands
  - **B** 6-Hole Spanner
  - **B** Oil Cans
  - **B** Cone Spanner and Tyre Lever
  - **B** Chain Covers
  - **B** Rear Reflectors
  - **B** Grips

EDC 27 Screw Threads (Mr. R. G. da Costa) 12 May 1952

- **E** Unified Screw Threads
- **D** Split Cotter Pins
- **B** Taper Pins

EDC 28 Sports Goods (Dr. D. Narayanamurti) 6 May 1952, 3 Nov 1952

- EDC 28: 1 Footballs, Volley-Balls and Basket-Balls (Shri H. B. S. Richie) 5 May 1952
- EDC 28: 2 Cricket and Hockey Balls (Shri Balwant Singh) 5 May 1952
- EDC 28: 3 Badminton and Tennis Rackets, Hockey Sticks and Cricket Bats (Shri Prem Pandhi)
- EDC 28: 4 Shuttlecocks (Shri Baldev Sahai) 5 May 1952
- EDC 28: 5 Nets (Shri Ram Nath Sharma)
- EDC 28: 6 Guts (Shri K. N. Wasan) 5 May 1952
- EDC 28: 7 Soft Leather Goods (Shri P. Hoon)
- EDC 28: 8 Athletic Goods, Track and Field Sport Goods and Gymnasium Equipment (Shri H. B. S. Richie)
  - **F** Footballs, Volley-Balls, Basket-Balls and Water Polo Balls (IS: 417-1953)
  - **B** Nets for Tennis, Badminton, Volley Ball, Table Tennis, etc,
  - **B** Sinew Guts

ECTDC 4 Pulleys and Belts (Shri P. C. Basu) 10 Dec 1952

- ECTDC 4: 1 Pulleys (Dr. V. Cadambe)
  - **D** Solid-Woven Cotton Belting for Power Transmission
  - **D** Hair Belting for Power Transmission
  - **B** Train Lighting Belting
  - **B** Canvas Plied Transmission Belting
  - **B** Rubber Belting

Textile Division Council

TDC 1 Textile Standards (Dr. C. Nanjundayya) 17-18 Dec 1952, 5-7 Mar 1953

- TDC 1: 1 Cotton (Dr. C. Nanjundayya)
- TDC 1: 2 Wool (Shri B. D. Naithani)
- TDC 1: 3 Jute (Dr. W. G. Macmillan)
- TDC 1: 4 Silk (Shri Dara H. Kooka) 5-7 Mar 1953
  - **F** Methods for Determination of Mean Fibre Weight Per Unit Length (Cotton) (IS: 234-1952)
  - **F** Method for Determination of Twist in Cotton Yarn (IS: 238-1952)
  - **E** Method for Determination of Mean Fibre Length and Fibre Length Frequency Distribution (Cotton)
  - **E** Determination of Single Fibre Strength and Intrinsic Strength of Cotton
  - **E** Method for Determination of Cotton Fibre Maturity Count
  - **E** Method for Grading Raw Silk
  - **E** Method for Visual and Tactual Examination of Category I Raw Silk
  - **E** Method for Determining Conditioned Weight of Category I Raw Silk
  - **E** Method for Conducting Winding Test for Category I Raw Silk
  - **E** Method for Conducting Size (Denier) Deviation and Maximum Deviation Tests for Category I Raw Silk
  - **E** Method for Conducting Average Conditioned Size (Denier) Test for Category I Raw Silk
  - **E** Method for Conducting Evenness and Low Evenness Tests for Category I Raw Silk

- **E** Method for Conducting Cleanness Test for Category I Raw Silk
- **E** Method for Conducting Neatness Test for Category I Raw Silk
- **E** Method for Conducting Serigraph Test for Determining the Tenacity and Elongation of Category I Raw Silk
- **E** Method for Conducting Cohesion Test for Category I Raw Silk
- **E** Method for Visual and Tactual Examination of Category II Raw Silk
- **E** Method for Determining Conditioned Weight of Category II Raw Silk
- **E** Method for Conducting Winding Test for Category II Raw Silk
- **E** Method for Conducting Size (Denier) Deviation and Maximum Deviation Tests for Category II Raw Silk
- **E** Method for Conducting Average Conditioned Size (Denier) Test for Category II Raw Silk
- **E** Method for Conducting Evenness and Low Evenness Tests for Category II Raw Silk
- **E** Method for Conducting Cleanness Test for Category II Raw Silk
- **E** Method for Conducting Neatness Test for Category II Raw Silk
- **E** Method for Conducting Serigraph Test for Determining the Tenacity and Elongation of Category II Raw Silk
- **E** Method for Conducting Cohesion Test for Category II Raw Silk
- **D** Definitions of Textile Terms Relating to Cotton
- **D** Definitions of Textile Terms Relating to Wool
- **D** Definitions of Textile Terms Relating to Jute
- **D** Methods for the Determination of Breaking Load (Strength) of Jute Yarn
- **D** Method for the Determination of Twist in Single Jute Yarn
- **D** Method for the Determination of Grist of Single Jute Yarn
- **D** Definitions of Textile Terms Relating to Silk
- **B** Determination of Count (or Melidity) of Warp and Weft Yarns in Grey Fabrics
- **B** Determination of Tensile Strength of Cotton Fibre (Flat Bundle Method)
- **B** Determination of Breaking Load (Strength) and Elongation of Single Threads of Cotton Yarn by means of a Constant-Rate-of-Traverse Testing Machine
- **B** Determination of Fibre Immaturity Percentage by Polarizing Microscope
- **B** Determination of Regularity and Evenness of Yarn
- **B** Determination of Nappiness in Cotton
- **B** Determination of Clean Wool Yield of Raw Wool
- **B** Determination of Moisture Content and Moisture Regain of Raw Wool
- **B** Determination of Kemp Content of Raw Wool
- **B** Determination of Mean Fibre Length of Wool
- **B** Determination of Crimp in Wool
- **B** Determination of Mean Fibre Diameter of Raw Wool
- **B** Determination of Length and Width of Jute Fabrics
- **B** Determination of Porter of Jute and Shots per Inch of Jute Fabrics
- **B** Determination of Weight per Square Yard (or Square Meter) and Weight per Linear Yard (or Linear Meter) of Jute Fabrics

TDC 2 Cotton, Yarn and Cloth (Shri Bharat Ram) 28 Jan 1953
- TDC 2: 1 Cotton Yarn and Cloth (Shri C. J. Soneji)
- TDC 2: 2 Mercerized Cotton Cloth, Cotton Tapes and Ropes (Shri S. Ramamritham)
- TDC 2: 3 Cotton Packaging (Shri C. J. Soneji)
  - **E** Mercerized Cotton Fabric — 'Grade A', for Aircraft
  - **D** Mercerized Cotton Fabric for Gliders
  - **B** Cotton Coating
  - **B** 2½ to 3 oz Cotton Fabric, for Aircraft
  - **B** Light Cotton Fabric for Covering (Plywood), for Aircraft
  - **B** Reinforcing Tape
  - **B** Machine Thread
  - **B** Lacing Cord

TDC 3 Jute (Mr. G. J. Gardner)
- TDC 3: 1 Raw Jute, Kutcha Bales (Mr. J. Smith)
- TDC 3: 2 Raw Jute, Pucca Bales
- TDC 3: 3 Jute Manufactures (Mr. G. J. Gardner)
- TDC 3: 4 Bales, Trusses and Bundles (Shri T. C. Saboo)
  - **D** Indian Hessians
  - **B** Packaging of Jute Manufactures

TDC 4 Wool (Shri A. K. Wattal) 20 Aug 1952
- TDC 4: 1 Raw Wool (Shri A. K. Wattal)
- TDC 4: 2 Finished Products (Shri A. K. Wattal)
- TDC 4: 2: 1 Panel for Finished Woollen and Worsted Materials (Shri C. J. Sukhadwalla)
- TDC 4: 3 Woollen Carpets and Woollen Rugs — Floor Coverings (Shri A. K. Wattal) 20 Aug 1952
  - TDC 4: 3: 1 Panel for Woollen Carpets and Woollen Rugs — Floor Coverings — as made in Mirzapur and Bhadohi (Mr. O. L. Tellery)
  - TDC 4: 3: 2 Panel for Woollen Carpets and Woollen Rugs — Floor Coverings — such as made in Rajasthan, Agra, etc
- TDC 4: 4 Woollen Druggets (Shri V. S. Rangasayi)
  - TDC 4: 4: 1 Panel for Woollen Druggets (Shri V. S. Rangasayi)
  - **E** Handloom Carpets for Export
  - **D** Druggets
  - **B** Lohis — Woollen
  - **B** Super Shawls
  - **B** Union Suiting
  - **B** Summer Suiting
  - **B** Serge
  - **B** Serge, Blue
  - **B** Serge, Service Dress
  - **B** Woollen Coating
  - **B** Tweed
  - **B** Woollen Great-Coat Cloth
  - **B** Woollen Flannel
  - **B** Drab Mixture Great-Coat Cloth
  - **B** Drab Mixture Serge
  - **B** Shirting, Worsted
  - **B** Blazer Cloth
  - **B** Woollen Knitting Yarn
  - **B** Worsted Suiting
  - **B** Cloth Barathea
  - **B** Bunting, Worsted
  - **B** Rugs and Blankets
  - **B** Flannel, Silver Grey

TDC 5 Textile Chemistry (Dr. T. S. Subramanian)
- TDC 5: 1 Identification and Analysis of Fibres and Fabrics (Dr. W. G. Macmillan)
- TDC 5: 2 Undyed (Grey and Bleached) Cotton Materials (Shri P. S. Nadkarni)
- TDC 5: 3 Colour Fastness (Mr. D. P. Milburn)
- TDC 5: 4 Proofed Fabrics (Dr. T. S. Subramanian)
- TDC 5: 5 Determination of Shrinkage (Dr. C. E. Salkeld)
- TDC 5: 6 Textile Auxiliaries and Desizing Agents (Dr. D. R. Nanji)
- TDC 5: 7 Water (Dr. S. M. Kaji)
- — Dyestuffs, *Informal* (Shri S. K. Dutta)
  - **D** Simple Methods for Identification of Common Commercial Textile Fibres
  - **D** Method for Determining the Relaxation Shrinkage of Woven Woollen Fabrics
  - **D** Methods for Determining the Relaxation and Felting Shrinkage of Knitted Woollen Garments
  - **D** Methods for Comparing and Determining the Relative Desizing Efficiency of Enzymes
  - **C** Methods of Test of Colour Fastness for Textile Materials (Other than to Light)
  - **B** Estimation of Scouring Loss
  - **B** Identification of Micro-quantities of Prohibited Metals in Cellulose Textiles
  - **B** Resistance of Fabrics and Yarns to Insect Pests
  - **B** Identification of Finishes on Textiles

TDC 6 Textile Stores and Machinery (Shri Narottam P. Hutheesing) 29 Aug 1952
- TDC 6: 1 Textile Wooden Articles — Jute (Mr. T. W. Scroggie)
- TDC 6: 2 Textile Wooden Articles — Cotton, Silk, Wool (Shri Narottam P. Hutheesing)
- TDC 6: 3 Textile Hides and Leather Articles (Shri D. C. Karaka)
- TDC 6: 4 Textile Metal Articles (Shri B. B. Joshi)
  - **E** Solid Bobbins for Dry Jute Spinning Frames
  - **D** Bobbins for Jute Roving Frames
  - **D** Spinning Rollers

D Spool Centres for Jute Spool Winding Machines
D Swells for Jute Looms
D Picking Arms (or Sticks)
D Code for Cotton Healds
C Round and Flat Polished Reed Wire
B Slubbing and Roving Bobbins and Skewers for Cotton Mills
B Ring Spinning Bobbins for Cotton Mills
B Shuttles for Cotton Power-Looms
B Picking Bands
B Check Strappings
B Roller Skins
B Spindle Tapes
B Tubular Bandings (Spindle Bandings)
B Power Transmission Cotton Ropes
B Fluted Rollers
B Rings
B Spindles

TDC 7 TEXTILE BUILDING CODE (Shri Bharat Ram)

D Code on Safeguards for Cotton Textile Machinery
B Code for Building Construction
B Code for Spacing of Machinery
B Code for Illumination
B Code for Colour Schemes
B Code for Air-Conditioning (Humidification, Ventilation, etc)

TDC 8 NATIONAL FLAG OF INDIA (Shri Bharat Ram)

C National Flag of India (Silk Khadi)
B National Flag of India (Wool Khadi)

TDC 9 COIR AND COIR PRODUCTS (Mr. R. E. Jones) 11 Mar 1953
TDC 9: 1 Coir Fibre and Coir Yarn (Mr. R. E. Jones)
TDC 9: 2 Coir Products (Mr. R. E. Jones)
C Grading of Cochin Coir Fibre

TDC 10 RAYON AND RAYON PRODUCTS (Shri D. N. Shroff)
TDC 10: 1 Rayon Yarn (Dr. M. D. Parekh) 26 May 1952
TDC 10: 2 Rayon Grey and Finished Products (Shri D. N. Shroff) 4 Apr 1952

B Methods of Tests and Tolerances for Continuous Filament Rayon and Estron Yarn
B Taffeta Cloth Composed of Rayon Yarns
B Ribbed Taffeta or Poplin Composed of Filament Rayon Yarns
B Warp Satin Cloth Composed of Artificial Silk Yarns
B Structure of Satin Upholstery Cloth Made from Artificial Silk Yarn
B Voile Cloth Composed of Artificial Silk Yarns
B Georgette Cloth Composed of Rayon Yarn
B Structure of Ninon Cloth Composed of Artificial Silk Yarn
B Jacquard Fabrics Composed of Rayon Yarns

TDC 11 HOSIERY AND KNITTED GARMENTS (Shri A. K. Choudhuri)
TDC 11: 1 Cotton Hosiery and Knitted Garments (Shri A. K. Choudhury) 22-23 Dec 1952
TDC 11: 2 Woollen Hosiery and Knitted Garments (Mr. G. R. Ginns)

B Dimensions for Round Low Neck with Short Sleeves Vests (RNS)
B Dimensions for Round Neck without Sleeves Vests (RN)
B Dimensions for Athletic Neck without Sleeves Vests (RN Cross Cutting)
B Dimensions for V-Neck with Sport Sleeves Vests (VS)
B Dimensions for V-Neck without Sleeves Vests (V)
B Dimensions for Round Button Front with Short Sleeves Vests (BF)
B Dimensions for Tie-Collar Shirt with Short Sleeves (Tennis Shirt)
B Dimensions for T Shirt (Short Sleeves)
B Dimensions for Tubular Neck with Short Sleeves Vests (High Neck Short Sleeves)
B Dimensions for Round High Neck with Short Sleeve Vests (French Neck Short Sleeves)
B Dimensions for Tubular Neck with Full Sleeves Vests (High Neck Full Sleeves)
B Dimensions for Cross Drawers (Jangiya)
B Dimensions for Straight Drawers (Half Drawers)
B Dimensions for Double Breast with Short Sleeves Vests (Double Breast)
B Dimensions for High Neck Double Breast with Short Sleeves Vests (French Neck with Double Breast)
B Dimensions for Double Breast with Full Sleeves Vests
B Dimensions for High Neck Double Breast with Full Sleeves Vests

TDC 12 TEXTILE SIZING AND FINISHING MATERIALS (Shri Kanchanlal Chandulal Parekh) 2 July 1952
D Tamarind Kernel Powder for Use in the Jute Industry

TDC 13 HANDLOOM CLOTH (Shri C. S. Ramanathan)
TDC 13: 1 Handloom Cotton Cloth (Shri C. S. Ramanathan) 25 Aug 1952
TDC 13: 1: 1 Panel for Handloom Cotton Cloth (Shri Randhir Singh)
TDC 13: 2 Handloom Woollen Cloth (Shri C. S. Ramanathan) 25 Aug 1952
TDC 13: 2: 1 Panel for Handloom Woollen Cloth (Shri Randhir Singh)

TDC 14 ROPES AND CORDAGES (Mr. J. P. Robertson)

Chemical Division Council

CDC 1 CHEMICAL STANDARDS (Dr. T. S. Subramanian) 5 Jan 1953

CDC 2 HEAVY CHEMICALS — ORGANIC (Shri N. Adhikari)
CDC 2: 1 Alcohol (Shri G. Gundu Rao)
CDC 2: 2 Wood Distillation (Shri M. K. Narasimhan)
CDC 2: 3 Acetic Acid (Shri M. K. Narasimhan)
CDC 2: 4 Charcoal for Industrial Purposes (Dr. M. L. Khanna)
CDC 2: 5 Ether (Shri M. B. Amin)
CDC 2: 6 Cable Compounds (Shri J. P. Mehrotra)
CDC 2: 7 Coal Tar Disinfectants (Mr. C. J. Fielder) 8 Jan 1953
CDC 2: 8 Coal Tar Products (Mr. C. J. Fielder) 18 July 1952

F Power Alcohol (IS: 322-1952)
F Denatured Spirit (IS: 324-1952)
E Solid Bituminous Filling Compound for Cable Boxes on Systems up to and Including 11,000 Volts
D Wood Naphtha as Denaturing Material
D Methyl Alcohol (Methanol), Technical
D Methyl Acetone
D Ether, Technical, Solvent and Anaesthetic
C Benzol, Industrial Grade A
C Benzol, Pure Nitration Grade
C Toluol, Industrial Solvent Grade
C Toluol, Nitration Grade
C Naphthalene
C Phenol (Carbolic Acid)
C Refined Creyslic Acid
B Acetic Acid
B Activated Charcoal for Vegetable Oil Industry
B Activated Charcoal for Sugar Industry
B Methods of Sampling and Test for Activated Carbon used for Decolorizing Vegetable Oil and Sugar Solution
B White Disinfectant Fluids
B Black Disinfectant Fluids (Emulsifying Type)
B Saponified Cresols (Soluble Type)

CDC 3 HEAVY CHEMICALS — INORGANIC (Dr. A. Nagaraja Rao) 13-14 Oct 1952
CDC 3: 1 Acids (Shri M. L. Seth)
CDC 3: 2 Fertilizers and Allied Products (Shri M. C. Verghese)
CDC 3: 3 Alkali and Allied Products (Shri M. B. Bhagvat) 13-14 Oct 1952
CDC 3: 4 Salt and Marine Products (Dr. Mata Prasad) 11, 13-14 Oct 1952
CDC 3: 5 Heavy Chemicals — Sulphates (Shri N. Adhikari)
CDC 3: 6 Heavy Chemicals — Miscellaneous (Dr. M. R. Mandlekar) 13-14 Oct 1952
CDC 3: 7 Industrial Gases (Mr. C. Hawkins) 13-14 Oct 1952

E Refined Sodium Bicarbonate, Technical
E Sodium Bicarbonate, Pure and Analytical Reagent
E Common Salt for Hide Curing
E Epsom Salt, Pharmaceutical
E Sodium Bichromate
E Dissolved Acetylene Gas

E Carbon Dioxide
E Compressed Oxygen Gas
E Monosodium Phosphate, Anhydrous
E Disodium Phosphate, Dodecahydrate, Technical
E Trisodium Phosphate, Anhydrous, Technical
E Glassy Sodium Metaphosphate, Technical
D Orthophosphoric Acid, Technical and Pharmaceutical
D Amendment to IS: 260-1950 Aluminium Sulphate, Non-Ferric
D Amendment to IS: 265-1950 Hydrochloric Acid
D Common Salt for Fish Curing
D Alum Cake
D Sodium Stannate
C Bonemeal (Raw and Steamed)
C Ammonium Sulphate, Technical
C Caustic Soda, Pure
C Liquid Chlorine, Technical
C Potassium Chlorate
C Ferric Chloride
C China Clay
C Disodium Phosphate, Dodecahydrate, Pharmaceutical and Analytical Reagent
C Anhydrous Disodium Phosphate, Analytical Reagent
C Zinc Chloride
B Sodium Chlorate
B Barium Sulphate
B Ammonia Gas

CDC 4 Fine Chemicals — Organic and Inorganic (Dr. J. N. Ray) 15 Oct 1952
CDC 4: 1 Organic Acids (Dr. K. A. Hamied) 15 Oct 1952
CDC 4: 2 Alcohols and Esters (Dr. B. D. Laroia)
CDC 4: 3 Percompounds (Shri N. Adhikari)
CDC 4: 4 Chloroderivatives (Dr. J. N. Ray) 15 Oct 1952
CDC 4: 5 Inorganic Salts (Dr. L. A. Bhatt) 15 Oct 1952

F Hydroquinone, Photographic Grade (IS: 388-1952)
E Chromium Trioxide (Chromic Acid) Analytical Reagent
E Oxalic Acid, Technical and Analytical Reagent
E Potassium Metabisulphite, Pharmaceutical and Photographic
D Linseed Oil, Pharmaceutical
C Formic Acid
C Tartaric Acid
C Ethylene Dichloride
C Methylene Chloride
C Sodium Nitrate, Technical
C Sodium Acetate, Technical and Pharmaceutical
B Sodium Peroxide
B Liquid Hydrogen Peroxide
B Sodium Parborate

CDC 6 Rubber Products (Dr. D. Banerjee) 8-9 Sep 1952
CDC 6: 1 Terms of Reference (Shri P. N. Deobhakta)
CDC 6: 3 Hoses (Shri S. C. De) 25-26 June 1952, 8-9 Sep 1952
CDC 6: 4 General Rubber Products (Dr. D. Banerjee) 23-24 July 1952

E Water Hose, Low Pressure
E Water Hose, High Pressure, for Washing and Spraying
E Air Hose, for Pneumatic Tools
E Welding Hose, Oxy-Acetylene
E Methods of Test for Hoses
C Rubber Lined Cotton Jacketted Hose for General Fire Fighting Service
C Oil Resisting Hose for the Conveyance of General Lubricating Oils, Transformer and Vegetable Oils
C Suction Hose
C Rubber and Insertion Jointing
C Red Rubber Tubing

CDC 8 Paints and Allied Products (Shri P. C. Chanda) 6-8 Oct 1952
CDC 8: 1 Drafting — dissolved during the year.
CDC 8: 2 Durability Test (Shri S. V. Sathaye)
CDC 8 :3 Printing Inks (Mr. Emil Fjermeros)
CDC 8: 4 Brushes for Paints and Varnishes (Shri G. K. Pradhan) 22-23 Sep 1952
CDC 8: 5 Packaging (Shri Probin Chanda) 7 Oct 1952
CDC 8: 6 Finished Products (Mr. R. A. Godwin)
CDC 8: 7 Pigments (Dr. A. Bowman)
CDC 8: 8 Solvents, Oils and Thinners (Shri J. K. Ghosh)

F Coal Tar Black Paint (IS: 290-1953)
F Liquid Driers for Paints (IS: 385-1953)
F Liquid Driers, Concentrated, for Paints (IS: 386-1953)
F Titanium Dioxide for Paints (IS: 411-1953)
F Sealing Paste for Edges and Overlaps in Steel Wagons (IS: 422-1953)
F Paint Remover, Solvent Type, Non-Inflammable (IS: 430-1953)
F Paint Remover, Solvent Type, Inflammable (IS: 431-1953)
E Lacquer, Cellulose, Clear
E Coal Tar Solvent Naphtha, Light
E Coal Tar Solvent Naphtha, Heavy
E Benzol for Use as Industrial Solvent
E Xylol for Use as Industrial Solvent
E Amyl Alcohol
E Butyl Alcohol, Normal
E Trichromatic Measurements for IS Colours for Ready Mixed Paints, IS: 5-1949
E Drums
E Brushes, Paints and Varnishes, Flat
D Amendments to IS 86-, 95-, 96-, 111-, 113-, 117-, 127-, 129-, 132-, 137- and 167-1950 Ready Mixed Paints
C Enamel, Brushing, Exterior — Natural Resin
i) Undercoating
ii) Finishing
C Enamel, Spraying, Exterior — Natural Resin
i) Undercoating
ii) Finishing
C Enamel, Brushing, Exterior — Synthetic Resin
i) Undercoating
ii) Finishing
C Enamel, Spraying, Exterior — Synthetic Resin
i) Undercoating
ii) Finishing
C Varnish, Finishing, Exterior and General Purposes — Natural Resin
C Varnish, Finishing, Exterior, Synthetic Resin
C Keg
B Brushes, Paints and Varnishes
a) One-Knot-Ground-Oval, Ferrule Bound
b) One-Knot-Ground-Round, Copper Wire Bound
c) One-Knot-Ground-Oval, Copper Wire Bound
B Brushes, Sash Tool
B Cellulose Esters

CDC 9 Lac and Lac Products (Dr. P. K. Bose)
CDC 9: 1 Sealing Wax (Dr. P. K. Bose)
CDC 9: 2 Briefing the Indian Delegation to the ISO/TC 50 Lac meeting (Dr. P. K. Bose) 17 May 1952

B Sealing Wax

CDC 10 Glassware (Dr. Atma Ram) 21-22 Nov 1952
CDC 10: 1 Sheet Glass (Shri H. C. Varshnei)
CDC 10: 2 Hollow Ware (Pt. Vishnu Datt)
CDC 10: 3 Bottleware (Dr. S. N. Ghosh) 3 Nov 1952
CDC 10: 4 Ampoules (Shri J. Chakravarti) 21-22 Nov 1952
CDC 10: 5 Glass Shells — for Electric Lamps (Shri T. Gupta)
CDC 10: 6 Laboratory Glassware (Shri J. B. Mukherjee) 20 Nov 1952
CDC 10: 7 Signals — Glassware (Shri S. M. Brahma)
CDC 10: 8 Glass Raw Materials (Dr. Y. P. Varshney) 19, 21-22 Nov 1952
CDC 10: 9 Ceramic Raw Materials (Shri M. G. Bhagat)
CDC 10: 9: 1 Panel for Clays (Dr. Atma Ram)
CDC 10: 9: 2 Panel for Minerals and Rocks (Shri V. P. Sondhi)

E Glass Ampoules
E Vaccine Phials
E Glass Making Sands
C Sheet Glass
C Glass Shells for General Lighting Service Lamps
B Beakers
B Measuring Cylinders

CDC 11 Essential Oils (Shri A. K. Menon) 29 Dec 1952
CDC 11: 1 Methods of Tests (Dr. Sadgopal)
CDC 11: 2 Rosin (Shri O. N. Muttoo)
CDC 11: 3 Vetiver and Cinnamon Leaf Oil (Mr. C. Goldstein)
CDC 11: 4 Geranium Oil (Mr. C. Goldstein)

E Methods of Tests for Essential Oils
E Lemongrass Oil (East Indian Lemongrass Oil)
E Oil of Eucalyptus
E Sandalwood Oil
E Citronella Oil (Java and Ceylon)
E Oil of Peppermint
D Oil of Turpentine
D Palmarosa Oil and Gingergrass Oil
D Rectified Oil of Camphor
C Rosin
B Geranium Oil
B Cinnamon Leaf Oil
B Linaloe Oil
B Vetiver Oil

CDC 12 Oils, Fats and Soaps (Shri S. C. Ghose)
CDC 12: 1 Oils and Fats (Mr. S. H. Turner) 10 Oct 1952, 20 Jan 1953
CDC 12: 1: 1 Panel for Methods of Test for Oils and Fats (Dr. G. S. Hattiangdi)
CDC 12: 2 Soaps (Mr. A. J. C. Hoskyns-Abrahall)
C Raw and Refined Groundnut Oil
C Mustard Oil, Edible
C Coconut Oil
C Cottonseed Oil, Raw, Washed and Refined
C Sesame Oil
B Methods of Sampling and Tests for Vegetable Oil and Fats
B Mahua Oil
B Transparent Soap

CDC 13 Inks (Dr. P. N. Sahai) 14 Apr 1952
D Amendment to IS: 219-1950 Ink Powders and Tablets, Blue-Black and Red
D Amendment to IS: 220-1950 Fountain Pen Inks, Blue-Black and Red
D Amendment to IS: 221-1950 Fluid Ink for Registration and for Cheques and Records
D Amendment to IS: 222-1950 Superior Fluid Ink for Writing

CDC 14 Solid Mineral Fuels (Dr. J. W. Whitaker) 19-20 Dec 1952
CDC 14: 1 Sampling 18 Aug 1952, 10 Sep 1952
CDC 14: 2 Testing (Dr. J. W. Whitaker)
CDC 14: 3 Standard Sizes for Marketing 25, 29 Nov 1952
CDC 14: 4 Terminology of Coal Types (Dr. J. W. Whitaker)
CDC 14: 5 Coke (Dr. J. Sanjana) 9 May 1952
E Methods for Sampling of Coal and Coke
E Size Grading of Coal and Coke for Marketing
C Hard Coke
C Methods of Test for Coal and Coke

CDC 15 Paper (Shri K. B. Sen)
CDC 15: 1 Paper Sizes (Shri M. L. Datta)
CDC 15: 2 Methods of Tests (Dr. P. N. Sahai)
CDC 15: 3 Quality Standards (Shri P. K. Nanda)
B Paper Sizes
B Hard-Sized Printing Paper Suitable for Printing of Job Work
B Text Book Printing Paper Suitable for Printing Books, Particularly Text Books
B Super-calendered Printing Paper Suitable for Magazine Printing
B Badami Paper Suitable for Cheap Printing
B Cream Laid Paper Suitable for General Writing Purposes, Particularly for Exercise Books
B Cream Wove Paper Suitable for General Writing Purposes
B Ledger Paper Suitable for Accounts Books
B Brown Wrapping Paper
B Kraft Paper

CDC 16 Leather (Shri B. M. Das) 22-23 Sep 1952
CDC 16: 1 Medium and Light Substance Finished Leather (Shri B. M. Das)
CDC 16: 2 Heavy Leather (Mr. K. Fialka) 8 Sep 1952
CDC 16: 3 East India Tanned Kips and Skins 14 Apr 1952
CDC 16: 4 Leather Goods (Mr. A. J. Hardcastle)
CDC 16: 5 Methods of Sampling and Tests (Shri B. M. Das)
CDC 16: 6 Glossary of Terms (Shri B. M. Das)
D Ammunition Boots for General Purposes
D Chaplis, Frontier Pattern, for General Purposes
C Chrome Tanned Box and Willow Kips and Sides for Shoe Uppers
C Glazed Kid for Shoe Uppers
C Chamois Leather
C Upholstery Leather
C Chrome Lace Leather
C Russet Leather
C Sole Leather
C Harness Leather
C Hydraulic Leather
C Methods of Sampling and Tests for Tanned Leather

CDC 17 Plastics (Shri N. Srinivasan) 12 Apr 1952
CDC 17: 1 Moulding Powders (Dr. S. L. Kapur)
CDC 17: 2 Cashew Nut Shell Liquid (CNSL) (Mr. D. C. Russel)
B Phenolic Moulding Powders for General Purposes
B Phenolic Moulding Powders for Electrical Purposes
B Cashew Nut Shell Liquid (CNSL)

CDC 18 Classification and Labelling of Dangerous Substances

CDC 19 Pest Control Products (Lt.-Col. Jaswant Singh) 31 Mar 1953
CDC 19: 1 BHC and DDT Insecticides (Dr. Rajinder Pal)
CDC 19: 2 Fumigants (Dr. K. C. Gulati)

CEDC 1 Lubricants (Shri J. J. Bagchi) 7-9 Aug 1952
CEDC 1: 1 Standard Methods of Tests and Sampling (Shri G. C. Sen)
CEDC 1: 2 Fixed Oils (Dr. D. R. Dhingra)
CEDC 1: 3 Defence Lubricants — dissolved during the year
CEDC 1: 4 Gear Transmission and Axle Oils (Dr. N. K. Gopalan)
CEDC 1: 5 Internal Combustion Engine Oils (Shri H. D. Chowdhury) 7-9 Aug 1952
CEDC 1: 6 Steam Cylinder Oils (Shri P. B. Mitra)
CEDC 1: 7 Greases and Graphited Lubricants (Dr. M. L. Khanna) 7-9 Aug 1952, 16 Feb 1953
CEDC 1: 8 Anti-Corrosives (Shri N. K. Chakravarti) 1-2 Aug 1952
CEDC 1: 9 Special Products (Dr. J. S. Aggarwal) 25 June 1952
CEDC 1: 10 Engine Machinery and Spindle Oils (Shri K. V. Gopalan) 19 Jan 1953
CEDC 1: 11 Turbine, Transformers, Crank Case and Switches Oil (Shri J. Verghese) 7-9 Aug 1952
E Internal Combustion Engine Lubricating Oil
E Grease A No. 0, Graphited
E Grease S No. 3
E Insulating Oil for Transformers and Switchgear (Low Viscosity Type)
E Castor Oil
D Grease L/A No. 1
D Grease L No. 3
D Grease L No. 3, Graphited
D Grease L No. 4
D Mosquito Larvicidal Oil
C Axle Oil, Gear (SAE 80, 90, 140, 250)
C Lubricant Gear Multipurpose (Hypoid Oils)
C Grease, Hard for Locomotive Journal and Rod Lubrication
C Grease, Soft, Sodium Soap for Locomotive Lubrication
C Grease, Wide Temperature Range
C Multipurpose Grease No. 2 and No. 3
C Corrosion Preventive Exterior Surface, Cold Application, Transparent and Opaque Film
C Corrosion Preventive, Cold Application, Water Displacing
C Machinery and Spindle Oils
B Methods of Tests and Sampling for Lubricants, Part II
B Aluminium Stearate
B Graphite Flake
B Grease, 0
B Grease, Lithium Base (Low Temperature)
B Turbine Oils

CETDC 3 Treated Fabrics (Dr. T. S. Subramanian) 18 Apr 1952
CETDC 3: 1 Fuel Pump Diaphragms (Shri B. N. Ganguli)
CETDC 3: 2 Leatherite (Shri M. K. Raju)
B Fuel Pump Diaphragm Fabric, Synthetic Rubber Proofed
B Fuel Pump Diaphragm Fabric, Varnish Proofed
B Vinyl Imitation Leather

Building Division Council

BDC 1 TERMINOLOGY, NOTATIONS AND DRAWINGS

BDC 2 CEMENT AND CONCRETE (Shri E. A. Nadirshah) 30-31 May 1952, 22 Jan 1952
- BDC 2: 1 Cement (Mr. E. P. Nicolaides) 30-31 May 1952, 21 Jan 1953
- BDC 2: 2 Concrete (Shri S. B. Joshi) 30-31 May 1952, 2-3, 10-11 Dec 1952
- BDC 2: 3 Asbestos Sheets and Pipes (Shri N. D. Daftary) 12 May, 23 June 1952
- BDC 2: 4 (*see* BDC 4: 1)
- BDC 2: 5 (*see* BDC 16: 1)
- BDC 2: 6 Concrete Pipes and Poles (Shri K. F. Antia) 18 Aug 1952, 15 Jan, 27 Feb 1953
- BDC 2: 7 Research Panel (Dr. E. Zipkes) 22 Dec 1952, 7 Feb 1953
  - **E** Code of Practice for Plain and Reinforced Concrete for General Building Construction
  - **E** Portland Blastfurnace Slag Cement
  - **E** Mild Steel and High Tensile Steel Bars and Hard-Drawn Steel Wire for Concrete Reinforcement
  - **C** Natural Aggregates and Manufactured Aggregates for Use in Mass Concrete
  - **C** Plain and Reinforced Concrete for Dams and Other Massive Structures
  - **C** Unreinforced Corrugated Asbestos Cement Sheets
  - **C** Concrete Pipes
  - **B** Asbestos Cement Pipes
  - **B** Concrete Poles

BDC 3 DOMESTIC SANITARY APPLIANCES AND FITTINGS (Mr. F. Ashmore) 23 Apr 1952, 26 Feb 1953
- BDC 3: 1 Domestic Sanitary Appliances and Accessories (Shri M. D. Raja Gopalan) 26 Feb 1953
- BDC 3: 2 Domestic Water Fittings (Shri N. P. Dalal) 26 Feb 1953
- BDC 3: 3 Salt-Glazed Stoneware Pipes and Fittings (Shri R. V. Prabhakar Rao) 16 Aug 1952
  - **C** Salt-Glazed Stoneware Pipes and Fittings
  - **C** Gunmetal Gate Globe and Check Valves
  - **B** Vitreous Glazed Sanitary Ware
  - **B** Enamelled Sanitary Ware
  - **B** Sanitary Accessories, including Cisterns, Brackets, etc

BDC 4 BUILDING LIMES (Dr. R. C. Hoon)
- BDC 4: 1 Building Limes (Prof. C. H. Khadilkar) 29 May 1952
  - **B** Building Limes

BDC 5 NON-CEMENT FLOORS AND ROOF COVERINGS (Shri R. D. Nadirshaw) 7 Nov 1952
- BDC 5: 1 Magnesite Flooring Composition (Shri K. P. Nair)
- BDC 5: 2 Linoleums (Shri N. Balkrishna)
- BDC 5: 3 Rubber Floorings (Shri A. Mitra)
- BDC 5: 4 Roofing Tiles (Mr. J. M. Frederick)
  - **C** Magnesite Flooring Composition for Railway Coaches
  - **B** Linoleums

BDC 6 BUILDING STONES AND BRICKS (Shri M. V. Joglekar) 5 Jan 1953
- BDC 6: 1 Bricks (Shri Arjan Singh)

BDC 7 STRUCTURAL STEEL (Shri J. J. Ghandy)

BDC 8 BUILDING FINISHES

BDC 9 TIMBER PRODUCTS (Dr. S. N. Kapur)
- BDC 9: 1 Timber (Dr. S. N. Kapur)
  - Panel for Classification of Commercial Timbers (Dr. S. N. Kapur)
  - Panel for Logs for Plywood (Shri J. Prasad)
  - Panel for Glossary of Technical Terms used in Timber Technology (Dr. K. A. Chowdhury)
- BDC 9: 2 Plywood (Lt.-Col. J. B. Howell)
- BDC 9: 3 Treatment (Dr. A. Purushotham) 14-15 Nov 1952
- BDC 9: 4 Standard Names of Indian Timbers (Dr. S. N. Kapur)
- BDC 9: 5 Investigations into Grading of Commercial Plywood (Lt.-Col. J. B. Howell)
- BDC 9: 6 Investigations into Coniferous Sawn Timber (Dr. S. N. Kapur)
- BDC 9: 7 Wood Separators (Shri J. Prasad)
  - **F** Recommendations for Maximum Permissible Moisture Content of Timber Used for Different Purposes in Different Climatic Zones (IS: 287-1951)
  - **F** Classification of Commercial Timbers and Their Zonal Distribution (IS: 399-1952)
  - **D** Code of Practice for Preservation of Timber
  - **C** Logs for Plywood
  - **C** Glossary of Technical Terms Used in Timber Technology
  - **C** Wooden Separators for Lead-Acid Storage Batteries
  - **B** Wood Poles Used for Telephone, Telegraph, Electric and Power Transmission
  - **B** Plywood for Aircraft Purposes
  - **B** Marine Plywood

BDC 10 MODULAR CO-ORDINATION (Mr. E. Maxwell Fry) 17 Nov 1952
- BDC 10: 1 Modular Details (Shri N. B. Shroff)

BDC 11 DOORS, WINDOWS AND BUILDING FURNITURE (Shri S. F. Desai) 19 Aug 1952
- BDC 11: 1 Timber Doors and Windows (Shri D. P. Asar) 2 Dec 1952
- BDC 11: 2 Metal and Composite Doors and Windows (Shri M. J. Jal) 19 Nov 1952, 19 Feb 1953
  - **B** Timber Doors and Windows
  - **B** Metal Doors and Windows

BDC 12 FUNCTIONAL REQUIREMENTS OF BUILDINGS (Mr. E.P. Nicolaides) 20 Aug 1952
- BDC 12: 1 Structural Safety and Loading Standards (Shri K. F. Antia)
- BDC 12: 2 Fire Safety of Buildings (Mr. J. I. Alfrey) 2, 4, 11, 18, 24, 25, 28 Feb, 4, 11, 18, 25 Mar 1953
- BDC 12: 3 Daylight Standards (Dr. K. Heinz) 12 Nov 1952
- BDC 12: 4 Orientation and Ventilation (Shri J. D. Shastri) 22 Nov 1952
- BDC 12: 5 Heat and Sound Insulation (Shri R. L. Suri) 18 Dec 1952
  - **B** Code of Practice for Safety of Buildings
  - **B** Daylight Standards for Buildings
  - **B** Code of Practice for Orientation of Buildings
  - **B** Heat Insulation Standards for Buildings
  - **B** Ventilation Standards for Buildings
  - **B** Sound Insulation Standards for Buildings

BDC 13 BUILDING CONSTRUCTION PRACTICES AND BYE-LAWS (Shri M. S. Mathur) 27 Aug 1952
- BDC 13: 1 Contractual Agreement (including Measurements of Buildings) (Shri Hargopal)
- BDC 13: 2 Building Bye-laws (Shri K. N. Misra)
- BDC 13: 3 Building Construction Practices (Shri N. G. Dewan) 6 Jan 1953
- BDC 13: 4 Wood Work and Joinery (Shri R. G. Gandhi) 12 Jan, 1 Feb 1953
- BDC 13: 5 Water Supply, Plumbing, Drainage and Sanitation (Shri B. K. Malhan)
- BDC 13: 6 Electrical Wiring and Fittings (Shri H. P. Chatterjee)
  - **C** Methods for Measurements of Building Works
  - **B** Building Bye-laws
  - **B** Code of Practice for Building Construction
  - **B** Wood Work and Joinery
  - **B** Code of Practice for Water Supply, Plumbing, Drainage and Sanitation

BDC 14 BRIDGES

BDC 15 BUILDERS HARDWARE (Shri Yousuf Mowjee)
- BDC 15: 1 Bolts, Door and Tower (Shri Ajoyendu Paul)
- BDC 15: 2 Hinges (Shri Yousuf Mowjee)
- BDC 15: 3 Locks and Padlocks (Shri P. G. Vidwans)
- BDC 15: 4 Miscellaneous Hardware
- BDC 15: 5 Wood Screws (Shri G. K. Pradhan) 2 Jan 1953
- BDC 15: 6 Roofing Hardware Fittings
  - **E** Wood Screws
  - **E** Double-Acting Spring Hinges
  - **E** Door Springs, Rat-Tail Type
  - **C** Cabinet Locks, Drawer Locks and Box Locks
  - **C** Rim Latches

BDC 16 POZZOLANAS (Dr. R. R. Hattiangadi)
- BDC 16: 1 Pozzolanas (Dr. R. C. Hoon) 29 May 1952

BDC 17 FLUID FLOW MEASUREMENT (Shri Kanwar Sain)

BDC 18 Refrigeration and Air-Conditioning (Mr. E. A. Bertsch) 18 Aug 1952
- BDC 18: 1 Standard Design Conditions for Various Parts of India (Shri J. C. Kapur)
- BDC 18: 2 Safety Standards for Mechanical Refrigeration (Shri S. K. Bhattacharyya) 5, 12 Jan 1953

	Problem	Organization/Laboratory
11.	Practical tests on indigenous and imported coated abrasives to determine minimum performance figures	i) Govt. Test House, Alipore, Calcutta ii) Technical Development Establishment, Laboratories, Kanpur
	Textile Division Council	
12.	Comparative tests for quality of raw silk from different silk zones of India for a) Evenness, percent b) Low evenness c) Cleanness d) Composite, percentage e) Average size (Denier) f) Size deviation (Denier) g) Maximum deviation (Denier) h) Winding breaks per 40 strokes j) Winding breaks per 50 strokes k) Strength in grams per Denier m) Elongation, percent n) Cohesion in strokes, and determination of grades of raw silk	Silk Conditioning House, Calcutta
13.	Testing mercerized fabrics for gliders for physical characteristics	Technological Laboratory, Indian Central Cotton Committee, Bombay
14.	Testing filter cloth for physical characteristics	do
15.	Scratch hardness tests for ring rabbeth bobbins for cotton mills	Technical Development Establishment, Laboratories, Kanpur
16.	Testing wool khadi for a) physical characteristics b) spectrophotometric values for the dyed cloth, and making it into flags and testing the flags under actual flying conditions	Technical Development Establishment, Textiles & Clothing, Kanpur
17.	Experiments to develop standard colour recipe for India Saffron and India Green in collaboration with Technical Development Establishment, Laboratories, Kanpur	Imperial Chemical Industries (India) Ltd., Dyes Department, Bombay
18.	Evaluation of standard shades for National Flag of India spectrophotometrically	The Ahmedabad Textile Industry's Research Association, Ahmedabad
19.	Dying of wool khadi to India Saffron and India Green	Imperial Chemical Industries (India) Ltd., Dyes Department, Bombay
	Chemical Division Council	
20.	Investigation about the germicidal value of coal tar disinfectants on different cultures	Central Drugs Research Institute, CSIR
21.	Carrying out actual tests regarding moisture content, ash content, screen analysis, matter insoluble in water, *p*H of aqueous extract, reaction to alkalies, decolorizing power, etc, for drafting of methods of test for activated charcoal	Lever Brothers (India) Ltd., Bombay
22.	Confirmation of test for chloride in chromic acid and chromates as given in ' Reagent Chemicals and Standards ' by Rosin	Merck & Co. Inc., New Jersey
23.	Comparison of different methods of estimation of hydroquinone	i) Government Test House, Alipore, Calcutta ii) Bengal Chemical & Pharmaceutical Works Ltd., Calcutta
24.	Trichromatic analysis of colours for ready mixed paints, prescribed in IS: 5-1949, by the use of Illuminant ' C '	Technical Development Establishment, Laboratories, Kanpur
25.	Examination of and report on the improved definition of the term ' hard dry ' and the methods of test for this condition in respect of all paint surfaces	Naval Headquarters
26.	Collection of performance and other data on marine paints as and when testing facilities are available with them	do
27.	Maintenance of a set of permanent glass standards for colour grading of rosin; supply of secondary standards made of rosin to the ISI for sale to testing laboratories, manufacturers and the trade; and to act as a referee testing laboratory in all cases of disputes as to the correctness or otherwise of the secondary standards for the grades of rosin	Forest Research Institute, Dehra Dun
28.	Collection of authentic botanic samples of the Gingergrass (*Sofia*) from Hyderabad under the personal supervision of Dr. S. C. Bhattacharya and investigating the presence of geraniol, perillic alcohol and aldehydes in the authentic oil samples after the grass has been botanically identified	National Chemical Laboratory, CSIR
29.	Analysis of the samples of oil of turpentine obtained through several progressive cuts from a batch of distillation made at the Indian Turpentine & Rosin Co. Ltd., Bareilly, and fixing the limits for the rectified grade of the oil	do
30.	Investigating the possibility of identifying gingergrass oil and palmarosa oil by their aldehyde content	i) Forest Research Institute, Dehra Dun ii) National Chemical Laboratory, CSIR
31.	Determination of methods of test for consistency of greases at different temperatures	Laboratories of Various Petroleum Oil Companies in India

	Problem	Organization/Laboratory
32.	Tests on various samples of hydraulic brake fluids to determine the correct temperature and the duration of time for the drying and tackiness test prescribed in IS: 317-1951 Specification for Automotive Hydraulic Brake Fluid	i) Government Test House, Alipore, Calcutta ii) Technical Development Establishment, Laboratories, Kanpur
33.	Analytical data on different kinds of oil-tanned leather after carrying out actual tests	i) Bengal Tanning Institute, Government of West Bengal ii) Central Leather Research Institute, CSIR
34.	Tests for wear resistance of leather	Government Test House, Alipore, Calcutta
35.	Tests on a number of East India tanned kips to determine the chemical characteristics in connection with draft Indian Standards	Central Leather Research Institute, CSIR
36.	Examination of various samples of glass bottles, used as containers for indigenous and overseas liquors, supplied by (i) Messrs Carew & Co. Ltd., Rosa, and (ii) Messrs Dyer Meakin Breweries Ltd., Lucknow, and to report on the sizes to be prescribed as standard	Bengal Chemical & Pharmaceutical Works Ltd.
37.	Tests for formulating a standard method of test for the determination of suitability of glass bottles used as containers for different types of writing inks	Central Glass & Ceramic Research Institute, CSIR
	Building Division Council	
38.	Mechanical method of compacting briquettes to determine tensile strength of cement	i) Central Road Research Institute, Delhi ii) Concrete Research Laboratory, Madras
39.	Compressive Strength Test	i) Concrete Research Laboratory, Madras ii) Associated Cement Companies Ltd., Bombay
40.	Water-cement ratio and strength of mortar and concrete	i) Indian Institute of Science, Bangalore ii) Concrete Association of India, Bombay
41.	Autoclave test for determining soundness of cement	i) Concrete Research Laboratory, Madras ii) Associated Cement Co. Ltd., Laboratory, Kymore iii) Associated Cement Co. Ltd., Laboratory, Kistna iv) Hirakud Research Station, Hirakud v) UP PWD Research Station, Lucknow vi) Central Road Research Institute, Delhi
42.	Variation in bulk density of aggregates measured with different sizes of containers and effect of variation on strength of concrete	i) Concrete Research Laboratory, Madras ii) National Physical Laboratory of India, New Delhi
43.	Investigation for establishing an Indian Sand as Indian Standard Sand for all testing purposes in place of Leighton Buzzard Sand currently used	i) Associated Cement Co. Ltd., Lakheri Cement Works ii) Associated Cement Co. Ltd., Kymore Cement Works iii) Associated Cement Co. Ltd., Mangalagiri Cement Works iv) Hirakud Research Station, Hirakud v) Hyderabad Engineering Research Laboratories, Hyderabad vi) Concrete Research Laboratory, Madras
44.	Chemical examination of natural stones	Central Building Research Institute, Roorkee
45.	Compression, shear and transverse strength of natural stones	do
46.	Moisture absorption of natural stones	do
47.	Petrological examination of building stones	Geological Survey of India, Calcutta
48.	Drivability of wood screws	i) Forest Research Institute, Dehra Dun ii) Directorate of Technical Development, Kanpur
49.	Withdrawal resistance of wood screws	
50.	Test for strength and quality of threads of wood screws	
51.	Performance requirements for roofing tiles	Concrete Research Laboratory, Madras

APPENDIX 14.13

INDIAN STANDARDS PUBLISHED AND IN PRESS

Standards Published 1 *April* 1952 *to* 31 *March* 1953

EC

		Rs	as
1.	IS: 382-1952 Practice for Alphabetical Arrangement	1	8
2.	IS: 397-1952 Method for Statistical Quality Control During Production by the Use of Control Chart	5	0

EDC

		Rs	as
1.	IS: 304-1952 High Tensile Brass Ingots and Castings	1	0
2.	IS: 305-1952 Aluminium Bronze Ingots and Castings	1	0
3.	IS: 318-1952 Leaded Tin Bronze Ingots and Castings	1	0
4.	IS: 365-1952 Electric Hot Plates ...	1	8
5.	IS: 368-1952 Electric Portable Immersion Heaters for Domestic Use	1	0
6.	IS: 369-1952 Electric Radiators for Domestic Use	1	0

		Rs	as
7.	IS: 372-1952 Manganese Ore — Battery Grade	1	12
8.	IS: 373-1952 Manganese Ore — Metallurgical Grade	1	12
9.	IS: 375-1952 Marking and Arrangement for Switchgear Bus-Bars, Main Connections and Auxiliary Wiring	2	8
10.	IS: 395-1952 Lead-Acid Storage Batteries for Motor Vehicles, Light Duty	1	8
11.	IS: 393-1953 Hard-Drawn Stranded Aluminium and Steel-Cored Aluminium Conductors for Overhead Power Transmission Purposes	2	0
12.	IS: 402-1952 Chisels	1	8
13.	IS: 403-1952 Method of Chemical Analysis of Lead	2	0
14.	IS: 405-1952 Lead Sheets for General Purposes	1	0
15.	IS: 414-1953 Guts for Tennis, Badminton and Squash Rackets	0	12
16.	IS: 415-1953 Shuttlecocks	1	0
17.	IS: 416-1953 Cricket and Hockey Balls ...	1	0

TDC

1.	IS: 389-1952 Method for Estimation of Small Quantities of Sulphuric Acid and Hydrochloric Acid in Cotton Materials ...	1	8
2.	IS: 390-1952 Method for Spray Test for Estimating the Water Repellency of Water-Resistant Fabrics (Permeable to Air) ...	1	8
3.	IS: 391-1952 Method for Measuring Resistance to Penetration by Water of Water-Resistant Fabrics (Permeable to Air)	1	8
4.	IS: 392-1952 Method for Measuring the Water Absorption and Penetration in Water-Resistant Fabrics (Permeable to Air) by a Bundesmann Type Apparatus ...	2	8

CDC

1.	IS: 106-1952 Ready Mixed Paint, Brushing, Priming, for Enamels, for use on Wood ...	1	0
2.	IS: 107-1952 Ready Mixed Paint, Brushing, Red Oxide-Zinc Chrome, Priming ...	1	0
3.	IS: 108-1952 Ready Mixed Paint, Spraying, Red Oxide-Zinc Chrome, Priming ...	1	0
4.	IS: 135-1952 Ready Mixed Paint Spraying, Stoving, Red Oxide-Zinc Chrome, Priming...	1	0
5.	IS: 136-1952 Ready Mixed Paint, Brushing, Stoving, Red Oxide-Zinc Chrome, Priming	1	0
6.	IS: 197-1952 Methods of Test for Varnishes and Lacquers	1	12
7.	IS: 198-1952 Varnish, Gold Size ...	1	0
8.	IS: 286-1951 Methods of Sampling and Test for Soaps	3	0
9.	IS: 289-1952 Aluminium Paste for Paints ...	1	4
10.	IS: 301-1951 Potassium Nitrate, Technical	1	8
11.	IS: 310-1951 Methods of Sampling and Test for Lubricants	5	0
12.	IS: 317-1951 Automotive Hydraulic Brake Fluid	1	4
13.	IS: 321-1952 Ethyl Alcohol (Absolute Alcohol)	2	4
14.	IS: 323-1952 Rectified Spirit	2	4
15.	IS: 330-1951 Chromic Acid	1	4
16.	IS: 331-1951 Chrome Salt	1	4
17.	IS: 332-1951 Chrome Alum Potash ...	1	4
18.	IS: 333-1951 Potassium Permanganate, Technical and Pharmaceutical	1	0
19.	IS: 337-1952 Varnish, Finishing, Interior ...	1	0
20.	IS: 338-1952 Varnish, Undercoating, Exterior, Natural Resin	1	0
21.	IS: 339-1952 Varnish, Undercoating, Exterior, Synthetic Resin	1	0
22.	IS: 340-1952 Varnish Mixing	1	0
23.	IS: 341-1952 Black Japan	1	0
24.	IS: 342-1952 Varnish, Acid Resisting ...	1	0
25.	IS: 343-1952 Varnish Paper	1	0
26.	IS: 344-1952 Varnish Stoving	1	0
27.	IS: 345-1952 Wood Filler, Transparent, Liquid	1	0
28.	IS: 346-1952 Varnish, Spirit, Clear, Hard ...	1	0
29.	IS: 347-1952 Varnish, Shellac, for General Purposes	1	0
30.	IS: 348-1952 French Polish	1	0
31.	IS: 350-1952 Insulating Oil Varnish, Clear, Baking	1	8
32.	IS: 351-1952 Insulating Varnish, Baking, Bitumen Type	1	4
33.	IS: 352-1952 Insulating Spirit Varnish, Clear, Air-Drying	1	4
34.	IS: 353-1952 Insulating Varnish, Non-Alcoholic, Clear, Air-Drying	1	4
35.	IS: 354-1952 Methods of Test for Resins ...	1	8
36.	IS: 355-1952 Rosin for Paints and Varnishes	1	0
37.	IS: 356-1952 Ester Gum for Paints and Varnishes	1	0
38.	IS: 357-1952 Gum Dammar, Pale, for Paints and Varnishes	1	0
39.	IS: 376-1952 Sodium Hydroxide, Analytical Reagent	1	12
40.	IS: 378-1952 Potash Alum, Pharmaceutical	1	8
41.	IS: 379-1952 Anhydrous Sodium Sulphate, Pharmaceutical	1	8
42.	IS: 380-1952 French Chalk, Technical ...	1	8
43.	IS: 381-1952 Sodium Silicate for Soap Industry	1	4
44.	IS: 393-1952 Ink, Stamp-Pad	1	8
45.	IS: 394-1952 Ink, Cloth Marking, Black ...	1	8
46.	IS: 419-1953 Putty, for Use on Wooden Frames	1	0
47.	IS: 420-1953 Putty, for Use on Metal Frames	1	0
48.	IS: 421-1953 Jointing Paste, for Bedding Mouldings on Coaching Stock ...	1	0
49.	IS: 423-1953 Plastic Wood, for Joiners Filler...	1	0
50.	IS: 424-1953 Plastic Asphalt	1	0
51.	IS: 425-1953 Shellac Adhesives for Steam Flange Joints	1	0
52.	IS: 426-1953 Paste, Filler, for Colour Coats ...	1	0
53.	IS: 427-1953 Distemper, Dry, Colour as Required	1	0
54.	IS: 428-1953 Distemper, Oil Emulsion, Colour as Required	1	8

BDC

1.	*IS: 217-1951 Cutback Bitumen	3	8
2.	*IS: 218-1952 Creosote and Anthracene Oil for Use as Wood Preservatives	2	0
3.	†IS: 364-1952 Fanlight Catch	1	0
4.	IS: 383-1952 Coarse and Fine Aggregates from Natural Sources for Concrete ...	4	0

Standards Under Print on 31 *March* 1953

EDC

1.	IS: 228-1952 Methods of Chemical Analysis of Pig Iron, Cast Iron, and Plain Carbon and Low-Alloy Steels	2	0
2.	IS: 404-1952 Lead Pipes for Other than Chemical Purposes	1	8
3.	IS: 406-1953 Methods of Chemical Analysis of Slab Zinc and Zinc Base Alloys ...	1	8
4.	IS: 413-1953 Punches, Round	1	0
5.	IS: 417-1953 Footballs, Volley-Balls, Basket-Balls and Water Polo Balls ...	1	0

TDC

1.	IS: 234-1952 Methods for Determination of Mean Fibre Weight Per Unit Length (Cotton)	1	0
2.	IS: 238-1952 Method for Determination of Twist in Cotton Yarn	1	8

*These subjects have been transferred from the CDC.

†This subject has been transferred from the EDC.

		Rs	as
CDC			
1.	IS: 290-1953 Coal Tar Black Paint ...	1	0
2.	IS: 322-1952 Power Alcohol	1	8
3.	IS: 324-1952 Denatured Spirit	1	8
4.	IS: 385-1953 Liquid Driers for Paints ...	1	0
5.	IS: 386-1953 Liquid Driers, Concentrated, for Paints	1	0
6.	IS: 388-1952 Hydroquinone, Photographic Grade	1	8
7.	IS: 411-1953 Titanium Dioxide for Paints ...	1	8
8.	IS: 422-1953 Sealing Paste for Edges and Overlaps in Steel Wagons	1	0
9.	IS: 430-1953 Paint Remover, Solvent Type, Non-Inflammable	1	0
10.	IS: 431-1953 Paint Remover, Solvent Type, Inflammable	1	0
BDC			
1.	*IS: 287-1951 Recommendations for Maximum Permissible Moisture Content of Timber Used for Different Purposes in Different Climatic Zones	2	0
2.	*IS: 399-1952 Classification of Commercial Timbers and Their Zonal Distribution ...	6	0

* These subjects have been transferred from the EDC.

APPENDIX 14.14

LIST OF SUBSCRIBING MEMBERS

(**Denotes Organizations and Associations of Industries, Trade and Commerce*)

SUSTAINING MEMBERS

1. Aaron Spinning and Weaving Mills Ltd., Pappinisseri P.O. (North Malabar)
2. Acme Manufacturing Co. Ltd., Bombay
3. Adcco Ltd., Calcutta
4. Addisons Paints & Chemicals Ltd., Madras
5. Agarpara Co. Ltd., Calcutta
6. Agrico Department, Tata Iron & Steel Co. Ltd., Jamshedpur
7. Ahmedabad Advance Mills Ltd., Bombay
8. Ahmedabad Manufacturing & Calico Printing Co. Ltd., Ahmedabad
*9. Ahmedabad Millowners' Association, Ahmedabad
10. Ahmedabad New Cotton Mills Co. Ltd., Ahmedabad
*11. Ahmedabad Textile Industry's Research Association, Ahmedabad
12. Ahura Chemical Products Ltd., Bombay
13. Air Conditioning Corporation Ltd., Calcutta
14. Ajax Products Ltd., Madras
15. Alcock Ashdown & Co. Ltd., Bombay
16. Alembic Chemical Works Co. Ltd., Baroda
17. Alfred Herbert (India) Ltd., Calcutta
18. Alkali & Chemical Corporation of India Ltd., Calcutta
*19. All India Bobbin Manufacturers' Association, Bombay
*20. All India Exporters' Association, Bombay
*21. All India Glass Manufacturers' Federation, Delhi
*22. All India Manufacturers' Organization, Bombay
*23. All India Non-Ferrous Metalware Manufacturers' Association, Bombay
*24. All India Plastics Manufacturers' Association, Bombay
*25. All India Pottery Manufacturers' Association, Calcutta
*26. All India Radio Merchants' Association, Bombay
*27. All India Starch Manufacturers' Association, Bombay
28. Aluminium Corporation of India Ltd., Calcutta
29. Aluminium Hindustan Ltd., Bombay
30. Aluminium Industries Ltd., Kundara
31. Aluminium Manufacturing Co. Ltd., Calcutta
32. Aluminium Union Ltd., Calcutta
33. Amco Ltd., Bombay
34. Angelo Brothers Ltd., Calcutta
35. Anglo-Dutch Paint Colour & Varnish Works Ltd., Mohiuddinpur (Dist. Meerut)
36. Anglo-Swiss Watch Co., Calcutta
37. Anil Starch Products Ltd., Ahmedabad
38. Annapurna Metal Works, Calcutta
39. Arathoon, A. M., Ltd., Calcutta
40. Armco (India) Ltd., Calcutta
41. Aruna Mills Ltd., Ahmedabad
42. Arvind Mills Ltd., Ahmedabad
43. Aryodaya Ginning & Manufacturing Co. Ltd., Ahmedabad
44. Asbestos Cement Ltd., Bombay
45. Ashok Motors Ltd., Madras
46. Asia Chemicals Ltd., Delhi
47. Asiatic Oxygen & Acetylene Co. Ltd., Calcutta
48. Asoka Mills Ltd., Ahmedabad
49. Assam Bengal Cement Co. Ltd., Calcutta
50. Assam Government, Secretary, Transport & Industries Department, Shillong
51. Assam Oil Co. Ltd., Digboi P.O., Assam
52. Assam Railways & Trading Co. Ltd., P.O. Margherita, Upper Assam
53. Assam Saw Mills & Timber Co. Ltd., Calcutta
54. Associated Cement Companies Ltd., Bombay
*55. Associated Chambers of Commerce of India, Calcutta
56. Associated Consulting Engineers (India), Bombay
57. Associated Electrical Industries (India) Ltd., Calcutta
58. Associated Electrical Industries Manufacturing Co. Ltd., Calcutta
59. Associated Exports Imports Corporation, Calcutta
60. Associated Instrument Manufacturers (India) Ltd., Calcutta
61. Associated Research Laboratories, Bombay
62. Associated Stone Industries (Kotah) Ltd., Ramganj Mandi (Rajasthan)
*63. Association of Indian Industries, Bombay
*64. Association of Merchants & Manufacturers of Textile Stores & Machinery, Bombay
65. Atherton West & Co. Ltd., Kanpur
66. Atul Products Ltd., Atul, via Bulsar, P.O. Parnera
67. Automatic Electric Devices Co., Bombay
68. Automobile Products of India Ltd., Bombay
69. Avery Company Ltd., Calcutta
70. Ballardie, Thompson & Matthews, Calcutta
71. Balmer Lawrie & Co. Ltd., Calcutta
72. Bangalore Woollen, Cotton & Silk Mills Co. Ltd., Bangalore
73. Bararee Coke Co. Ltd., Calcutta
74. Bata Shoe Company Ltd., Calcutta
75. Behar Firebricks & Potteries Ltd., Mugma P.O., Manbhum Dist.
76. Beharilal Ramcharan Cotton Mills Ltd., Bombay
77. Bengal Belting Works Ltd., Calcutta
*78. Bengal Chamber of Commerce, Calcutta
79. Bengal Chemical & Pharmaceutical Works Ltd., Calcutta
80. Bengal Electric Lamp Works Ltd., Calcutta
81. Bengal Enamel Works Ltd., P.O. Palta, Dist. 24-Parganas
82. Bengal Fine Spg. & Wvg. Mills Ltd., Calcutta
*83. Bengal Hosiery Manufacturers' Association, Calcutta
84. Bengal Immunity Co. Ltd., Calcutta
85. Bengal Ingot Co. Ltd., Calcutta
*86. Bengal Jute Dealers' Association, Calcutta
*87. Bengal Millowners' Association, Calcutta

*88. Bengal National Chamber of Commerce, Calcutta
89. Bengal Potteries Ltd., Calcutta
90. Best, M., Cotton Rope Manufacturing Co., Bombay
91. Bharat Battery Manufacturing Co. Ltd., Calcutta
92. Bharat Carbon & Ribbon Mfg. Co. Ltd., Calcutta
*93. Bharat Chamber of Commerce, Calcutta
94. Bharat Electrical Industries Ltd., Calcutta
95. Bharat Glass Works Ltd., Belgharia P.O. (W. Bengal)
96. Bharat Plastics Ltd., Calcutta
97. Bharat Tiles and Marble Ltd., Bombay
98. Bhartia Electric Steel Co. Ltd., Calcutta
99. Bhavnagar Oil and Chemical Industries Ltd., Bombay
100. Bhor Industries Ltd., Bhor (via Poona)
101. Bhowra Coke Co., Calcutta
102. Bihar Government, Director of Industries, Industries Department, Patna
103. Bihari Mills Ltd., Ahmedabad
104. Bikaner Gypsums Ltd., Calcutta
105. Binani Brothers Ltd., Calcutta
106. Binani Metal Works Ltd., Calcutta
107. Binny's Engineering Works Ltd., Madras
108. Birkmyre Brothers Ltd., Calcutta
109. Birla Cotton Spg. & Wvg. Mills Ltd., Delhi
110. Bisra Stone Lime Co. Ltd., Calcutta
111. Blue Star Engineering Co. (Bombay) Ltd., Bombay
*112. Bombay Chamber of Commerce, Bombay
113. Bombay Government, Director of Industries, Bombay
114. Bowreah Cotton Mills Co. Ltd., Calcutta
115. Braithwaite & Co. (India) Ltd., Calcutta
116. Braithwaite Burn & Jessop Construction Co. Ltd., Calcutta
117. Briggs, R. V., & Co. Ltd., Calcutta
118. Britannia Building & Iron Co. Ltd., Calcutta
119. British Drug Houses (India) Ltd., Bombay
120. British India Corporation Ltd., Kanpur
121. British India Electric Construction Co. Ltd., Calcutta
122. British Insulated Callenders Cables Ltd., Bombay
123. British Metal Corporation (India) Ltd., Calcutta
124. British Paints (India) Ltd., Howrah
125. British Timken Ltd., Calcutta
126. B. S. & Company, Calcutta
127. Buckingham & Carnatic Co. Ltd., Madras
*128. Builders' Association of India, Bombay
*129. Builders Hardware Industries Association of India, Calcutta
130. Burhanpur Tapti Mills Ltd., Burhanpur R.S., Nimar Dist.
131. Burmah-Shell Oil Storage & Distributing Co. of India Ltd., Bombay
132. Burn & Co. Ltd., Howrah Iron Works, Howrah
133. Burn & Co. Ltd., Refractories & Ceramic Department, Calcutta
134. Burrakur Coal Co. Ltd., Calcutta
135. Calcutta Chemical Co. Ltd., Calcutta
136. Calcutta Electric Supply Corporation Ltd., Calcutta
137. Calcutta Expanded Metal Mfg. Co. Ltd., Calcutta
138. Calcutta Industrial Chemical Minerals Co. Ltd., Calcutta
*139. Calcutta Jute Fabrics Shippers' Association, Calcutta
*140. Calcutta Paper Traders' Association, Calcutta
*141. Calcutta Tea Chest Fittings Manufacturers' Association, Calcutta
142. Caltex (India) Ltd., Calcutta
143. Cambata Industries Ltd., Bombay
144. Camlin Limited, Bombay
145. Capco Limited, Calcutta
146. Cawnpore Cotton Mills Co., Kanpur
147. Cawnpore Textiles Ltd., Kanpur
148. Cawnpore Woollen Mills, Kanpur
149. Central Agency Ltd., Bombay
150. Central Board of Irrigation & Power, New Delhi
*151. Central Builders' Association, New Delhi
*152. Central Council of the Refrigeration & Air Conditioning Trades Associations of India, New Delhi
153. Central Distillery & Chemical Works Ltd., Meerut Cantt
154. Central India Spinning, Weaving & Manufacturing Co. Ltd., Bombay
155. Central Organization for Oil Industry & Trade, Bombay
156. Central Research Institute, Travancore University, Trivandrum
157. Ceylon Government, Director of Industries, Colombo
158. Chanda, P. C., & Co. Ltd., Calcutta
159. Chandmull Rajgarhia, Giridih, Hazaribagh
160. Chatarbhujdas Karnani, Bombay
161. Chatturam Horilram Ltd., P.O. Jhumri, Telaiya (Koderma), Dist. Hazaribagh
162. Chemical Examiner, Calcutta Custom House, Calcutta
163. Chemical Industrial & Pharmaceutical Laboratories Ltd., Bombay
164. Chemo-Pharma Laboratories Ltd., Bombay
165. Chhoi Silk Mill Co. Ltd., Bombay
166. Chittaranjan Cotton Mills Ltd., Calcutta
167. Chloride & Exide Batteries (Eastern) Ltd., Calcutta
168. Chowgule & Co. (Hind) Ltd., Bombay
169. Chrestien Mica Industries Ltd., Calcutta
170. Ciba Dyes Ltd., Bombay
171. City Soap Works, Calcutta
172. Clyde Fan Co. Ltd., Calcutta
*173. Coal Consumers' Association of India, Calcutta
*174. Concrete Association of India, Bombay
175. Consolidated Mill Supplies Ltd., Bombay
176. Continental Export & Import Co., Gudur (Nellore Dist.)
177. Cooper Allen & Co., Kanpur
178. Cooper & Company, Bombay
179. Cooper Engineering Ltd., Satara Road, Bombay State
180. Corn Products Co. (India) Ltd., Bombay
181. Council of Scientific & Industrial Research, New Delhi
182. C.P. Manganese Ore Co. Ltd., Nagpur
183. Crompton Engineering Co. (Madras) Ltd., Madras
184. Crompton Parkinson (Works) Ltd., Bombay
185. Crossley & Towers Ltd., Calcutta
186. Croydon Chemical Works Ltd., Bombay
187. Dalmia Cement (Bharat) Ltd., New Delhi
188. Damodar Karsandas, Bombay
189. Damodar Valley Corporation, Calcutta
190. Dazzle Products Ltd., Calcutta
191. D.C.M. Chemical Works, Delhi
192. Delhi Cloth & General Mills Co. Ltd., Delhi
193. Delhi State, Director of Industries & Labour, Delhi
194. Devidayal Metal Industries Ltd., Bombay
195. Dharamsi Morarji Chemical Co. Ltd., Bombay
196. Dhrangadhra Chemical Works Ltd., Dhrangadhra (Saurashtra)
197. Din Products Ltd., Bombay
198. Don Watson & Co. Ltd., Calcutta
199. Dunbar Mills Ltd., Calcutta
200. Dunlop Rubber Co. (India) Ltd., Calcutta
201. Dutt, S. L., & Co. Ltd., Calcutta
202. Eagle Plywood Industries Ltd., Calcutta
203. East India Carpet Co. Ltd., Amritsar
*204. East India Cotton Association Ltd., Bombay
205. East India Distilleries & Sugar Factories Ltd., Madras
206. East India Paint & Chemical Works Ltd., Calcutta
207. East India Pharmaceutical Works Ltd., Calcutta
*208. East Indian Bolt & Nut Dealers' Association, Calcutta
209. Eastern Chemical Co. (India), Bombay
*210. Eastern Committee of the Overseas Rubber Cable Manufacturers' Association, Calcutta
211. Electric Construction & Equipment Co., Calcutta
212. Electric Lamp Manufacturers (India) Ltd., Calcutta
*213. Electrical Contractors Association of West Bengal Ltd., Calcutta
214. Electrical Storage Co. Ltd., Calcutta
215. Elephant Oil Mills Ltd., Bombay
216. Elgin Mills Co. Ltd., Kanpur
217. Emin, G. A., & Co., Calcutta
218. Enco Plywood & Sawmill Industries, Siliguri (Darjeeling)
219. Engineering Association of India, Calcutta
220. Engineering Research Laboratories, Director, Hyderabad-Dn.
221. Engineers' Syndicate (India) Ltd., Calcutta
222. English Electric Co. Ltd., Calcutta
223. Ericsson Telephones Sales Corporation AB, Calcutta
224. Escorts (Agents) Ltd., New Delhi
225. Estrela Batteries Ltd., Bombay
*226. European Mofussil Jute Balers' Association, Calcutta
*227. Fan Makers' Association of India, Calcutta

*228. Federation of British Industries, Bombay
*229. Federation of Electricity Undertakings of India, Bombay
*230. Federation of Gujarat Mills & Industries, Baroda
*231. Federation of Indian Chambers of Commerce & Industry, New Delhi
*232. Federation of Woollen Manufacturers in India, Bombay
233. Fertilizers & Chemicals Travancore, Ltd., Alwaye, South India
234. Firestone Tyre & Rubber Co. of India Ltd., Bombay
235. Flintrock Products Ltd., Bombay
236. Ford Motor Co. of India Ltd., Bombay
237. Free India Dry Accumulators Ltd., Calcutta
238. Gammon, J. C., Ltd., Bombay
239. Ganges Printing Ink Factory Ltd., Howrah
240. Ganges Rope Co. Ltd., Calcutta
241. Gannon Dunkerley & Co. Ltd., Bombay
242. Garden Reach Workshops Ltd., Calcutta
243. Garlick & Co. Ltd., Bombay
244. Geigy Insecticides Ltd., Bombay
245. General Electric Co. of India Ltd., Calcutta
246. General Motors India Ltd., Bombay
247. General Radio & Appliances Ltd., Bombay
248. Gestetner Duplicators Ltd., Calcutta
249. Gladstone Lyall & Co. Ltd., Calcutta
250. Glaxo Laboratories (India) Ltd., Bombay
251. Glenfield & Kennedy Ltd., Bombay
252. Gobindo Sheet Metal Works & Foundry, Calcutta
253. Godrej & Boyce Manufacturing Co. Ltd., Bombay
254. Godrej Soaps Ltd., Bombay
255. Goodlass Wall Ltd., Bombay
256. Gourepore Co. Ltd., Calcutta
257. Government Porcelain Factory, Bangalore
258. Government Sandalwood Oil Factory, Mysore
259. Government Silk Weaving Factory, Mysore
260. Government Soap Factory, Bangalore
261. Gramophone Co. Ltd., Dum Dum
262. Greaves Cotton & Co. Ltd., Bombay
263. Greaves Cotton & Crompton Parkinson Ltd., Bombay
264. Gresham & Craven of India Ltd., Calcutta
265. Grindwell Ltd., Bombay
266. Guest, Keen, Williams Ltd., Calcutta
267. Gulf Oil (India) Ltd., Bombay
268. Gwalior Potteries, Gwalior
269. Hakamchand Ishwardas, Poona
270. Harbanslal Malhotra & Sons Ltd., Calcutta
271. Hardcastle Waud & Co. Ltd., Bombay
272. Harrison & Crosfield Ltd., Quilon, South India
273. Harry Ferguson of India Ltd., Bangalore
274. Heatly & Gresham Ltd., Calcutta
275. Henley's, W. T., Telegraph (Works) Co. Ltd., Calcutta
276. Henry, A. & S., Co. Ltd., Calcutta
277. Himachal Pradesh Government, Chief Commissioner, Simla
278. Himani Limited, P.O. Belghuriah, 24-Parganas
279. Himco (India) Ltd., Bombay
280. Hind Construction Co. Ltd., Calcutta
281. Hind Cycles Ltd., Bombay
282. Hind Lamps Ltd., Shikohabad
283. Hind Mills Ltd., Bombay
284. Hind Tank Manufacturing Co., Bombay
285. Hindu, Madras
286. Hindustan Aircraft Ltd., Bangalore
287. Hindustan Construction Co. Ltd., Bombay
288. Hindustan General Electrical Corporation Ltd., Calcutta
289. Hindustan Motors Ltd., Calcutta
290. Hindustan Shipyard Ltd., Visakhapatnam
291. Hindustan Tyres Ltd., Bombay
292. Hindustan Vanaspati Manufacturing Co. Ltd., Bombay
293. Hindusthan Development Corporation Ltd., Calcutta
294. Hindusthan Plastics Ltd., Bombay
295. Hindusthan Sugar Mills Ltd., Golagokarannath, Dist. Kheri
296. Hindusthan Wire & Metal Products Ltd., Calcutta
297. Hooghly Docking & Engineering Co. Ltd., Howrah
*298. Hosiery Manufacturers' Association, Ludhiana
299. Hovanesian Brothers, Calcutta
300. Hoyle, Robson, Barnett & Co. (India) Ltd., Calcutta
301. Hutchison, J. & R., Ltd., Calcutta
302. Hyderabad Allwyn Metal Works Ltd., Hyderabad-Dn
303. Hyderabad Chemicals & Fertilizers Ltd., Secunderabad
304. Hyderabad State Government, Director of Commerce & Industries, Hyderabad-Dn
305. Imperial Chemical Industries (India) Ltd., Calcutta
306. Imperial Oil Mills Ltd., Calcutta
307. Imperial Tobacco Co. of India Ltd., Calcutta
308. India Alkalies Ltd., Calcutta
309. India Cements Ltd., Talaiyuthu, Tirunelveli Dist. (Madras)
310. India Electric Works Ltd., Behala (24-Parganas)
311. India Industrial Works Ltd., Howrah
312. India Linoleums Ltd., Calcutta
313. India Paint, Colour & Varnish Co. Ltd., Calcutta
314. India Pistons Ltd., Madras
315. India United Mills Ltd., Bombay
316. Indian Aluminium Co. Ltd., Calcutta
317. Indian and Eastern Newspaper Society, New Delhi
*318. Indian Battery Manufacturers' Association, Calcutta
319. Indian Battery Manufacturing Co. Ltd., Calcutta
320. Indian Cable Co. Ltd., Calcutta
321. Indian Central Coconut Committee, Ernakulam
322. Indian Central Cotton Committee, Bombay
323. Indian Central Jute Committee, Calcutta
324. Indian Central Oilseeds Committee, New Delhi
325. Indian Central Sugarcane Committee, New Delhi
*326. Indian Chamber of Commerce, Calcutta
*327. Indian Chemical Manufacturers' Association, Calcutta
*328. Indian Coal Grading Board, Calcutta
*329. Indian Coffee Board, Bangalore
*330. Indian Colliery Owners' Association, P.O. Jharia, Dist. Manbhum
331. Indian Conduit Pipes Ltd., Calcutta
*332. Indian Confectionery Manufacturers' Association, Calcutta
333. Indian Copper Corporation Ltd., Ghatsila P.O., Dist. Singhbhum
334. Indian Council of Medical Research, New Delhi
*335. Indian Electrical Manufacturers' Association, Calcutta
*336. Indian Engineering Association, Calcutta
337. Indian Expanded Metals Ltd., Bombay
338. Indian Galvanizing Co. (1926) Ltd., Calcutta
*339. Indian Hemp Association, Calcutta
340. Indian Hume Pipe Co. Ltd., Bombay
341. Indian Institute of Architects, Bombay
342. Indian Institute of Metals, Calcutta
343. Indian Iron & Steel Co. Ltd., Calcutta
*344. Indian Jute Fabrics Shippers' Association, Calcutta
*345. Indian Jute Mills Association, Calcutta
*346. Indian Lac Cess Committee, Ranchi
*347. Indian Lamp Factories' Association, Calcutta
*348. Indian Machine Tool Manufacturers' Association, Bombay
349. Indian Malleable Castings Ltd., Calcutta
*350. Indian Merchants' Chamber, Bombay
*351. Indian Mining Association, Calcutta
*352. Indian Motion Picture Producers' Association, Bombay
*353. Indian National Steamship Owners' Association, Bombay
*354. Indian Non-Ferrous Metals Manufacturers' Association, Calcutta
355. Indian Oxygen & Acetyle Co. Ltd., Calcutta
*356. Indian Paint Manufacturers' Association, Calcutta
*357. Indian Paper Makers' Association, Calcutta
*358. Indian Paper Mills Association, Calcutta
359. Indian Patent Stone Co. Ltd., Calcutta
360. Indian Plywood Mfg. Co. Ltd., Bombay
361. Indian Roads Congress, New Delhi
*362. Indian Rope Manufacturers' Association, Calcutta
363. Indian Rubber Board, Kottayam, Travancore-Cochin State
*364. Indian Rubber Industries Association, Bombay
365. Indian Rubber Manufacturers Ltd., Calcutta
*366. Indian Salt Manufacturers' Association, Bombay
367. Indian Smelting & Refining Co. Ltd., Bombay
*368. Indian Soap & Toiletries Makers' Association, Calcutta
369. Indian Standard Wagon Co. Ltd., Calcutta
370. Indian Statistical Institute, Calcutta

371. Indian Steel & Wire Products Ltd., Indranagar, Dist. Singhbhum
*372. Indian Sugar Mills Association, Calcutta
*373. Indian Tea Association, Calcutta
*374. Indian Tea-Chest Batten Manufacturers' Association, Calcutta
375. Indian Telephone Industries Ltd., Duravani Nagar, Bangalore Dist.
376. Indian Tool Manufacturers Ltd., Bombay
377. Indian Turpentine & Rosin Co. Ltd., P.O. Clutterbuckganj, Dist. Bareilly
378. Indian Wild-Barfield Co. Ltd., Bombay
*379. Indigenous Belting Industries Association, Calcutta
380. Indo-Belga Engineering Co. Ltd., Ahmedabad
381. Industrial & Engineering Apparatus Co. Ltd., Bombay
382. Industrial Gases Ltd., Calcutta
383. Institution of Engineers (India), Calcutta
384. International Combustion (India) Ltd., Calcutta
385. International General Electric Co. (India) Ltd., Bombay
386. International Light Weight Steels, Bombay
387. International Wool Secretariat, New Delhi
388. Investa Machine Tools & Engineering Co. Ltd., Bombay.
389. IRP (Radio) Ltd., Calcutta
390. Jagatjit Distilling & Allied Industries Ltd., P.O. Jagatjit Nagar, Dist. Kapurthala
391. Jaipur Metal Industries Ltd., Jaipur
392. James Lord & Sons Ltd., Calcutta
393. Jammu & Kashmir Government, Director of Industries & Commerce, Srinagar
394. Jay Engineering Works Ltd., Calcutta
395. Jeewanlal (1929) Ltd., Calcutta
396. Jenson & Nicholson (India) Ltd., Calcutta
397. Jessop & Co. Ltd., Calcutta
398. J. K. Cotton Manufacturers Ltd., Kanpur
399. J. K. Cotton Spinning & Weaving Mills Co. Ltd., Kanpur
400. J. K. Iron & Steel Co. Ltd., Kanpur
401. J. K. Jute Mills Co. Ltd., Kanpur
402. John Thompson Wolverhampton (India) Ltd., Calcutta
403. John Tinson & Co. Ltd., New Delhi
404. Johnson & Phillips Ltd., Bombay
405. Joshi, S. B., & Co., Bombay
406. Jyoti Limited, Baroda
407. Kailas Carpet Co., New Delhi
408. Kale's Ink Manufacturing Co., Bombay
409. Kassels Ltd., Delhi
410. Kay Engineering Co., Kapurthala
411. K. C. P. Limited, Vuyyuru, Dist. Krishna
412. Kesar Sugar Works Ltd., Bombay
413. Khandelwal Brothers Ltd., Bombay
414. Khosla Plastics, Poona
415. Kilburn & Co. Ltd., Calcutta
416. Kirloskar Brothers Ltd., Kirloskarvadi, Dist. Satara
417. Kirloskar Electric Co. Ltd., Bangalore
418. Koh-i-Noor Paint Colour & Varnish Works, Amritsar
419. Kooverji Devshi & Co. Ltd., Bombay
420. Kores (India) Ltd., Bombay
421. Korula Rubber Co. Ltd., Bombay
422. Krishnalal Thirani & Co. Ltd., Calcutta
423. Krudd Industries Ltd., Calcutta
424. Kulkarni Brothers, Bombay
425. Kumardhubi Engineering Works, Calcutta
426. Kumardhubi Fireclay & Silica Works Ltd., Calcutta
427. Lakshmiratan Cotton Mills Co. Ltd., Kanpur
428. Lang, F. & O., Ltd., Calcutta
429. Law, G. C., & Co., Calcutta
430. Leader Engineering Works, Jullundur City
431. Lever Brothers (India) Ltd., Bombay
432 L H K Industries, Delhi
433. Liluah Iron Works, Howrah
434. Lister Antiseptics & Dressings Co. (1928) Ltd., Calcutta
435. Lucknow Municipal Board, Lucknow
436. Ludlow Jute Co. Ltd., Calcutta
437. Macfarlane & Co. Ltd., Calcutta
438. Machinery Manufacturers' Corporation Ltd., Calcutta
439. Machinery Paints & Chemicals (India) Ltd., Bombay
440. Mackar Pillay & Sons Ltd., Alwaye, South India
441. Madhya Bharat Government, Director of Industries & Commerce, Indore
442. Madhya Pradesh Government, Director of Industries, Nagpur
*443. Madras Chamber of Commerce, Madras
444. Madras Government, Director of Industries, Madras
445. Madras Handloom Weavers' Provincial Co-operative Society Ltd., Madras
446. Madura Mills Co. Ltd., Mathurai (S. India)
447. Mahadeoprasad Kashiprasad, Calcutta
*448. Maharashtra Chamber of Commerce, Bombay
449. Mahindra & Mahindra Ltd., Bombay
*450. Mahratta Chamber of Commerce & Industries, Poona
451. Main, A. & J., & Co. Ltd., Calcutta
452. Malleable Iron & Steel Castings Co. Ltd., Bombay
*453. Maskati Cloth Market Association, Ahmedabad
454. May & Baker (India) Ltd., Bombay
455. M.B.M. Engineering College, Jodhpur
456. McGregor & Balfour Ltd., Calcutta
457. Medical Council of India, New Delhi
458. Mercury Paints & Varnishes Ltd., Bombay
459. Merz and McLellan (India), Calcutta
460. Metal Box Co. of India Ltd., Calcutta
461. Metal Container Company, Calcutta
462. Metal Corporation of India Ltd., Calcutta
463. Metal Goods Mfg. Co. Ltd., Banaras
464. Metal Rolling Works Ltd., Bombay
465. Metalcraft (India) Ltd., Calcutta
466. Mettur Chemical & Industrial Corporation Ltd., Mettur Dam (Salem Dist.)
467. Minimax Ltd., Calcutta
468. Mining, Geological & Metallurgical Institute of India, Calcutta
469. Modi Lantern Works, Modinagar
470. Modi Soap Works, Modinagar
471. Mohini Mills Ltd., Calcutta
472. Mond Nickel Co. Ltd., Bombay
473. Morison, J. L., Son & Jones (India) Ltd., Bombay
474. Mowjee, M. C., & Co., Calcutta
475. Mukand Iron & Steel Works Ltd., Bombay
476. Mullick, S. N., & Co., Calcutta
477. Murarka Paint & Varnish Works Ltd., Calcutta
478. Murphy Radio of India Ltd., Bombay
479. Mysore Chemicals & Fertilizers Ltd., Krishnarajasagara Post, Belagula
480. Mysore Commercial Union Ltd., Bangalore
481. Mysore Electrical Industries Ltd., Bangalore City
482. Mysore Electro Chemical Works Ltd., Bangalore
483. Mysore Glass & Enamel Works Ltd., Bangalore City
484. Mysore Government, Director of Industries & Commerce, Bangalore
485. Mysore Industrial & Testing Laboratory Ltd., Bangalore
486. Mysore Iron & Steel Works, Bhadravati
487. Mysore Lamp Works Ltd., Bangalore
488. Mysore Spun Silk Mills Ltd., Channapatna (Mysore State)
489. Mysore Stoneware Pipes & Potteries Ltd., Bangalore
490. Nahan Foundry, Nahan (Dist. Sirmur) Himachal Pradesh
491. Naihati Jute Mills Ltd., Calcutta
492. Nanco Rubber & Plastics Ltd., Coimbatore
493. Napier Paint Works Ltd., Calcutta
494. Naskarpara Jute Mills Co. Ltd., Calcutta
495. National Art Silk Mills Ltd., Bombay
496. National Bearing Co. Ltd., Jaipur
497. National Carbon Co. (India) Ltd., Calcutta
498. National Ekco Radio & Engineering Co. Ltd., Bombay
499. National Electrical Industries Ltd., Bombay
500. National Forests & General Mills Co. Ltd., Bombay
501. National Institute of Sciences of India, New Delhi
502. National Instrument Factory, Calcutta
503. National Insulated Cable Co. of India Ltd., Calcutta
504. National Iron & Steel Co. Ltd., Calcutta
505. National Pipes & Tubes Co. Ltd., Calcutta
506. National Rayon Corporation Ltd., Bombay
507. National Rolling & Steel Ropes Ltd., Calcutta
508. National Rubber Manufacturers Ltd., Calcutta
*509. National Small Tools & Cutlery Manufacturers' Association, Calcutta
510. National Tannery Co. Ltd., Calcutta
511. New Commercial Mills Co. Ltd., Ahmedabad
512. New Delhi Municipal Committee, New Delhi
513. New Egerton Woollen Mills, Dhariwal
514. Newfriend Industries, Delhi
515. New India Industries Ltd., Baroda

516. New Kaiser-i-Hind Spg. & Wvg. Co. Ltd., Bombay
517. New Rajpur Mills Co. Ltd., Ahmedabad
518. New Standard Engineering Co. Ltd., Bombay
519. New Victoria Mills Co. Ltd., Kanpur
520. Noble Paint & Varnish Co. Ltd., Bombay
521. North India Light Weight Steels Ltd., New Delhi
*522. Northern India Carpet Manufacturers' (Cottage Industry) Association, Allahabad
*523. Northern India Hosiery Manufacturers' Corporation, Ludhiana
*524. Northern India Lime Marketing Association, Dehra Dun
525. Northern India Oil Industries Ltd., Kanpur
526. Northern India Paint, Colour & Varnish Co. Ltd., New Delhi
527. Nundy & Co., Calcutta
528. Nursing & Co. Ltd., Calcutta
529. Nutan Mills Ltd., Ahmedabad
530. Ogale Glass Works Ltd., P.O. Ogalevadi, Dist. Satara North, Bombay State
*531. Oil Merchants' Chamber, Bombay
*532. Oil Pressure Lamp Industries Association (India), Calcutta
533. Ordnance Factories, Director General, Calcutta
534. Oriental Metal Industries Ltd., Calcutta
535. Oriental Metal Pressing Works, Bombay
536. Orissa Government, Director of Agriculture & Food Products, Cuttack
537. Orissa Minerals Development Co. Ltd., Calcutta
538. Osmanshahi Mills Ltd., Hyderabad-Dn
539. Oxy-Chloride Flooring Products Ltd., Bombay
*540. Paint Federation, Calcutta
*541. Pakur Quarry Owners' Association, Calcutta
542. Parry & Co. Ltd., Madras
543. Parshuram Pottery Works Co. Ltd., Morvi (Kathiawar)
544. Patel Engineering Co. Ltd., Bombay
545. Patiala & East Punjab States Union Government, Director of Industries, Patiala
546. Pearl Products Co. Ltd., Bombay
547. Perfect Pottery Co. Ltd., Jubbulpore
548. Philips Electrical Co. (India) Ltd., Calcutta
549. Pickers Limited, Ahmedabad
550. Pioneer Magnesia Works Ltd., Bombay
*551. Plywood Manufacturers' Association of India, Calcutta
552. Plywood Products, Sitapur
553. Pochee, C. S., & Son, Bombay
554. Posts & Telegraph Workshops, General Manager, Calcutta
555. Prabhat Products Co., Bombay
556. Praga Tools Corporation Ltd., Secunderabad
557. Premier Art & Composition Flooring Co., Bombay
558. Premier Automobiles Ltd., Bombay
559. Premier Mica Company, Gudur, Nellore Dist.
560. Pritchett & Gold and E. P. S. Co. Ltd., Bombay
*561. Provincial Industrial Co-operative Association Ltd., Bombay
562. P. S. G. & Sons Charity Industrial Institute, Peelamedu P.O., Coimbatore
*563. Punjab & Delhi Chamber of Commerce, New Delhi
564. Punjab Government, Director of Industries, Simla
565. Punjab Paint, Colour & Varnish Works, Kanpur
566. Radio & Electricals Manufacturing Co. Ltd., Bangalore
567. Radio Lamp Works Ltd., Bombay
*568. Radio Manufacturers' Association of India, Calcutta
569. Rainbow Ink & Varnish Manufacturing Co. Ltd., Bombay
570. Rajasthan Government, Deputy Secretary, Commerce & Industries Department, Jaipur
*571. Rajasthan Industrial & Mining Association, Bhilwara
572. Rallies India Ltd., Calcutta
573. Rashtriya Metal Industries Ltd., Bombay
574. Ravi Industries Ltd., Bombay
575. Raymond Woollen Mills Ltd., Bombay
576. Raza Sugar Co. Ltd., Rampur
*577. Refractory Makers' Association, Calcutta
578. Reliance Firebrick & Pottery Co. Ltd., Calcutta
579. Republic Engineering Corporation Ltd., Calcutta
580. Resa Co., Madras
581. Reyrolle, A, & Co. Ltd., Calcutta
582. Richardson & Cruddas Ltd., Bombay
583. Roberts, McLean & Co. Ltd., Calcutta
584. Rohtas Industries Ltd., Dalmianagar (Bihar)
585. Salem Magnesite Ltd., Salem
586. Sandoz Products Ltd., Bombay
587. Sankey Electrical Stampings Ltd., Bhandup
588. Sarabhai Chemicals, Baroda
589. Sarangpur Cotton Manufacturing Co. Ltd., Ahmedabad
590. Saurashtra Government, Director of Industries, Department of Industries & Commerce, Rajkot
591. Saxby & Farmer (India) Ltd., Calcutta
592. Scientific Indian Glass Co. Ltd., Calcutta
593. Scientific Instrument Co. Ltd., Calcutta
*594. Screen Printers' Association, Bombay
*595. Screw Manufacturers' Association, Calcutta
596. Secunderabad Municipal Corporation, Secunderabad
597. Sen-Raleigh Industries of India Ltd., Calcutta
598. Seraikella Glass Works Ltd., P.O. Kandra, Dist. Singhbhum
599. Seth Pusalal Mansinghka Ltd., Bhilwara
600. Shalimar Paint, Colour & Varnish Co. Ltd., Calcutta
601. Shalimar Tar Products (1935) Ltd., Calcutta
602. Sharma, J. N., & Sons, Delhi
603. Shaw Wallace & Co. Ltd., Calcutta
604. Sheffield Spring & Steel Co., Calcutta
605. Shree Digvijay Cement Co. Ltd., Seeka, via Jamnagar
606. Shree Gopal Paper Mills Ltd., Calcutta
*607. Shree Market Silk Merchants' Association, Bombay
608. Shree Shyam Oil Mills Ltd., Calcutta
609. Shri Ambica Mills Ltd., Ahmedabad
*610. Silk & Art Silk Mills Association Ltd., Bombay
*611. Silk Merchants' Association, Bombay
612. Simpson & Co. Ltd., Madras
613. Sinclair, Murray & Co. Ltd., Calcutta
614. Singareni Collieries Co. Ltd., Hyderabad-Dn
615. Singh, B. M., & Son, Calcutta
616. Sirhind Rubber Industries, Sirhind
617. Sirsilk Ltd., Hyderabad-Dn
618. Solar Paint & Varnish Manufacturing Co., Calcutta
619. Sonawala Industries Ltd., Bombay
620. Sone Valley Portland Cement Co. Ltd., Calcutta
621. South Indian Export Co. Ltd., Madras
622. South Madras Electric Supply Corporation Ltd., Trichinopoly
*623. Southern India Chamber of Commerce, Madras
*624. Southern India Millowners' Association, Coimbatore
*625. Southern India Skin & Hide Merchants' Association, Madras
626. Southern Industrial Corporation, Madras
627. Spedding Dinga Singh & Co., New Delhi
628. Standard Batteries Ltd., Bombay
629. Standard Brick & Tile Co. (Yelahanka) Ltd., Rly. Station Yelahanka, P.O. Yelahanka
630. Standard Chemical & Pharmaceutical Co., Bombay
631. Standard Furniture Co. Ltd., P.O. Kallai (Malabar
632. Standard Motor Products of India Ltd., Madras
633. Standard Paint Works Ltd., Calcutta
634. Standard Pottery Works Ltd., Alwaye
635. Standard-Vacuum Oil Co., Bombay
636. Star Metal Refinery Ltd., Bombay
637. Star Paper Mills Ltd., Saharanpur
638. Steel Corporation of Bengal Ltd., Calcutta
*639. Steel Re-Rolling Mills' Association of India, Calcutta
640. Steel Age Industries Ltd., Bombay
641. Stewarts & Lloyds of India Ltd., Calcutta
642. Stewarts & Lloyds Ltd., Glasgow, Calcutta
643. Stone, J, & Co. (India) Ltd., Calcutta
644. Straw Products Ltd., Bhopal
645. Structural Engineering Works Ltd., Bombay
646. Sunderdas Saw Mills, Bombay
647. Svadeshi Mills Co. Ltd., Bombay
648. Swadeshi Cotton Mills Co. Ltd., Kanpur
649. Swastik Oil Mills Ltd., Bombay
650. Swastik Rubber Products Ltd., Poona
651. T. I. Cycles of India Ltd., Madras
*652. Tanners' Federation of India, Kanpur
653. Tarway Mica Works, Giridih
654. Tata Chemicals Ltd., Bombay
655. Tata Iron & Steel Co. Ltd., Bombay
656. Tata Locomotive & Engineering Co. Ltd., Tatanagar
657. Tata Mills Ltd., Bombay
658. Tata Oil Mills Co. Ltd., Bombay
659. Tatanagar Foundry Co. Ltd., Calcutta
660. Texind Corporation Ltd., Bombay
661. Texmaco (Gwalior) Ltd., Gwalior
*662. Textile Association (India) Regd., Bombay
*663. Textile Manufacturers' Association (Regd), Amritsar

*664. Textile Processors' Association (India), Bombay
665. Textile Supplies Syndicate (India) Ltd., Bombay
666. Textool Company Ltd., Coimbatore
667. Thomas, J, & Co. Ltd., Calcutta
668. Thomas Duff & Co. (India) Ltd., Calcutta
669. Tide Water Oil Co. (India) Ltd., Calcutta
*670. Timber Traders' Association, Pathankot
671. Titaghur Paper Mills Co. Ltd., Calcutta
672. Travancore Cements Ltd., Kottayam
673. Travancore-Cochin Government, Secretary, Development Department, Industries Section, Trivandrum
*674. Travancore Coir Mats & Matting Manufacturers' Association, Alleppey
675. Travancore Ogale Glass Mfg. Co. Ltd., P.O. Udyogmandal, Alwaye
676. Travancore Rayons Ltd., Rayonpuram, Perambavoor P.O.
677. Travancore Titanium Products Ltd., Trivandrum
678. Trinidad Lake Asphalt Operating Co. Ltd., Madras
679. Union Drug Co. Ltd., Calcutta
680. United Engineering Corporation Ltd., Bangalore
681. United Salt-Works & Industries Ltd., Bombay
682. United Steel Cos. (India) Ltd., Bombay
683. United Trading Co., Delhi
684. Universal Lamp Manufacturing Co. Ltd., Calcutta
685. Universal Screw Factory, Chheharta
*686. Upper India Chamber of Commerce, Kanpur
687. Uttar Pradesh Government, Director of Cottage Industries, Kanpur
*688. Vanaspati Manufacturers' Association of India, Bombay
689. Vasant Industrial & Engineering Works, Bombay
690. Vasanta Mills Ltd., Singanallur, Coimbatore Dist.
691. Victor Oil Co. Ltd., Calcutta
692. Victory Chemical & Pharmaceutical Works, Chalakudi
693. Victory Flask Co., Kachwadi, Govandi P.O., Chembur (Bombay)
694. Vindhya Pradesh Government, Director of Industries, Rewa
695. Volkart Brothers, Bombay
696. Wakefield, C. C., & Co. Ltd., Bombay
697. Waldie, D., & Co. Ltd., Calcutta
698. West Bengal Government, Director of Industries, Calcutta
*699. Western India Glass Manufacturers' Association, Bombay
700. Western India Match Co. Ltd., Bombay
701. Western India Plywood Ltd., P.O. Baliapatam, Malabar
702. William Jacks & Co. Ltd., Calcutta

SUSTAINING MEMBERS (ASSOCIATES)

*1. All India Bichromate Manufacturers' Association, Bombay
*2. All India Federation of Cycle Traders, Kanpur
*3. Andhra Chamber of Commerce, Madras
4. Basic & Synthetic Chemicals Ltd., Calcutta
5. Calcutta Hardware Co., Calcutta
6. Calcutta Mineral Supply Co. Ltd., Calcutta
7. Catholic Press, Ranchi
8. Century Paint & Varnish Works, Calcutta
*9. Cinematographic Importers' Association, Bombay
10. Dholpur Glass Works Ltd., Dholpur
11. Ellora Chemical Works, Bombay
12. General Lead Batteries Co., Calcutta
13. Ghose Brothers, (Perfumers), Calcutta
14. Gondwana Paints & Minerals Ltd., Nagpur
*15. Howrah Manufacturers' Association, Howrah
16. Hyderabad National Industries Ltd., Hyderabad-Dn
*17. Indian Chamber of Commerce, Mathencheri P.O., Cochin
18. Italab Ltd., Industrial Testing & Analytical Laboratories, Bombay
19. Joseph Leslie & Co., Bombay
20. Jullundur Municipality, Jullundur
21. Jyothi Paint & Varnish Industries Ltd., Madras
22. Krishna Mining Company, Goginernipuram, Gudur P.O., Nellore Dist.
*23. Leather Goods Manufacturers' & Dealers' Association, Bombay
24. Liberty Chemical Works, Bombay
*25. Malabar Tile Manufacturers' Association, Feroke (Malabar)
26. Pannalal Girdharlal Delhi
27. Patna State Graphite Mining Co., P.O. Titilagarh, Orissa
28. Public Analyst to Government, Uttar Pradesh, Lucknow
29. Public Works Department, Chief Engineer, B & R, Jaipur
30. Ramco Chemical Works, Ahmedabad
31. Sealand (India) Ltd., Delhi
32. Simla Municipality, Simla
33. Simplex Manufacturing Co. Ltd., Delhi
34. Solar Batteries & Flashlights Ltd., Bombay
*35. South Indian Plywood Manufacturers' Association, Feroke (Malabar)
36. Spirit Warehouse, Madras
37. Subol Dutt & Sons Ltd., Calcutta
38. Sulekha Works Ltd., Calcutta
39. Suresh Chemical Works, Calcutta
40. Tellicherry Municipal Council, Tellicherry (N. Malabar)
41. Therapeutics Chemical Research Corporation, Bombay
42. Variety Industrial Works Ltd., Calcutta

ORDINARY MEMBERS

1. Aiyar, V. S., New Delhi
2. Aranya, R. S., Calcutta
3. Banerjea, H. N., P.O. Jhinkpani (Dist. Singhbhum)
4. Banerjee, G. N., Bombay
5. Basu, B., Bombay
6. Batni, K. B., Delhi
7. Bhandarkar, M. S., P.O. Pallom, Kottayam
8. Bhide, E. R., Bombay
9. Bhutta, P. H., Nagpur
10. Chainani, R. W., Willingdon Island P.O., (S. India)
11. Chakravarti, D. K., Calcutta
12. Chakravarty, K. M., Rohrabund, P.O. Saharpura, Dist. Manbhum
13. Collins, A. E. L., Delhi
14. Das, H. S., Calcutta
15. Daw, B. C., Calcutta
16. Desai, H. M., Belfast, North Ireland
17. Doshi, R. V., Ahmedabad
18. Dutt, S. K., Calcutta
19. Fazalbhoy, Y. A., Bombay
20. Fielder, C. J., Calcutta
21. Friedlaender, F., Calcutta
22. Ghosh, M. L., Calcutta
23. Ghosh, S., Howrah
24. Halder, N., Calcutta
25. Jain, B. N., Verka (Dist. Amritsar)
26. Jain, C. R., Meerut City
27. Jain, H. C., Katni (M.P.)
28. Jain S. S., Meerut
29. Jayaraman, N., Bangalore
30. Kanakaraj, V. P., Udamalpet
31. Kesavan, T. A., Madras
32. Krishan Deva, Nawabganj, Dist. Gonda
33. Krishnaiah, N. V., Kharagpur
34. Lath, Mohanlal, Calcutta
35. Leclercq, R. F., Bombay
36. Lelle, S. R., Bombay
37. Lokagariwar, P. L., Bombay
38. Man Singh, Delhi
39. Menon, B. V. D., P.O. Udyogmandal, Alwaye
40. Mistry, J. J., Ujjain (M.D.)
41. Mitra, R. K., Calcutta
42. Murti, B. N., Nellore
43. Musaddi, A. R., P.O. Giridih (Dist. Hazaribagh)
44. Nanabhoy, Ruttanshaw, Bombay
45. Narayana Rao, T. S., Bangalore
46. Owen, C. W., Bombay
47. Pandit, C. M., Baroda
48. Patel, J. C., Bombay
49. Patel, M. M., Bombay
50. Radhakrishna, J. N., Bangalore
51. Rajderkar, E. B., Bombay
52. Rajgarhia, M. L., Calcutta
53. Rajkishan, Madras
54. Ramakrishnaiah, Gullapalli, Tenali
55. Raman, G. A., Bombay
56. Ramaswami, V. S., Madras
57. Ranade, G. S., Bombay
58. Rose, S., Madras
59. Samasiva Rao, R., Madras
60. Seervai, F. P., Madras

61. Shah, B. M., Ahmedabad
62. Shah, J. M., Bombay
63. Shroff, M. L., Calcutta
64. Sitapati, T. S., Calcutta
65. Sitaram Nayudu, T. S., Devakottai
66. Sohan Singh, Amritsar
67. Soneji, C. J., Bombay
68. Varshnei, S. C., Bahjoi
69. Weir, D. W., Oorgaum P.O., (S. India)
70. Yogi, M. V., P.O. Waltair, R.S.

APPENDIX 14.15

CONTRIBUTIONS AND SUBSCRIPTIONS BY THE CENTRAL AND STATE GOVERNMENTS, FIRMS, TRADERS AND INDIVIDUALS FOR THE CALENDAR YEAR 1952

	Rs As P	Rs As P	Rs As P
1. Contributions			
Government of India Grant-in-Aid	4,20,000 0 0		4,20,000 0 0
2. Membership Subscriptions			
a) Governments of States			
Bombay	10,000 0 0		
UP	5,000 0 0		
West Bengal	4,000 0 0		
Bihar	2,500 0 0		
Madras	2,000 0 0		
Hyderabad	2,000 0 0		
Mysore	1,250 0 0		
Madhya Bharat	1,000 0 0		
Saurashtra	1,000 0 0		
Rajasthan	1,000 0 0		
Travancore-Cochin	1,000 0 0		
Orissa	1,000 0 0		
Punjab	500 0 0		
Patiala & East Punjab States Union ...	500 0 0		
Madhya Pradesh	500 0 0		
Himachal Pradesh	250 0 0		
Vindhya Pradesh	250 0 0		
Jammu & Kashmir	250 0 0		
Assam	250 0 0		
Delhi	250 0 0	34,500 0 0	
b) Firms, Trade Associations, Non-Government Bodies, etc, paying more than minimum			
Associated Cement Companies Ltd., Bombay	3,000 0 0		
Tata Iron & Steel Co. Ltd., Bombay ...	3,000 0 0		
Delhi Cloth & General Mills Co. Ltd., Delhi	1,500 0 0		
Federation of Indian Chambers of Commerce & Industry, New Delhi	1,000 0 0		
Ahmedabad Advance Mills Ltd., Bombay ...	500 0 0		
Bikaner Gypsums Ltd., Calcutta	500 0 0		
Central India Spg. Wvg. & Mfg. Co. Ltd., Bombay	500 0 0		
Chandmull Rajgarhia, Giridih, Hazaribagh ...	500 0 0		
Chloride & Exide Batteries (Eastern) Ltd., Calcutta	500 0 0		
Chrestien Mica Industries Ltd., Calcutta ...	500 0 0		
D.C.M. Chemical Works, Delhi	500 0 0		
Dalmia Cement (Bharat) Ltd., Delhi ...	500 0 0		
Engineering Association of India, Calcutta ...	500 0 0		
Hindustan Aircraft Ltd., Bangalore ...	500 0 0		
Hindustan Motors Ltd., Calcutta	500 0 0		
Hindustan Vanaspati Mfg. Co. Ltd., Bombay	500 0 0		
Hyderabad Chemicals & Fertilizers Ltd., Secunderabad	500 0 0		
India Paint Colour & Varnish Co. Ltd., Calcutta	500 0 0		
Indian Aluminium Co. Ltd., Calcutta	500 0 0		
Indian Jute Mills Association, Calcutta ...	500 0 0		
Lever Brothers (India) Ltd., Bombay ...	500 0 0		
Ludlow Jute Co. Ltd., Calcutta	500 0 0		
National Carbon Co. (India) Ltd., Calcutta	500 0 0		
Reliance Firebrick & Pottery Co. Ltd.,... Calcutta	500 0 0		
Sinclair Murray & Co. Ltd., Calcutta ...	500 0 0		
Standard Batteries Ltd., Bombay ...	500 0 0		
Standard Vacuum Oil Co., Bombay ...	500 0 0		
Svadeshi Mills Co. Ltd., Bombay ...	500 0 0		
Tarway Mica Works, Giridih	500 0 0		
C. O.	21,000 0 0	34,500 0 0	4,20,000 0 0

	Rs As P	Rs As P	Rs As P
B. F. ...	21,000 0 0	34,500 0 0	4,20,000 0 0
Tata Mills Ltd., Bombay	500 0 0		
Indian Copper Corporation Ltd., Ghatsila ...	400 0 0		
Coal Consumers' Association of India, Calcutta...	350 0 0		
Crompton Parkinson (Works) Ltd., Bombay...	350 0 0		
Estrela Batteries Ltd., Bombay	350 0 0		
Firestone Tyre & Rubber Co. of India Ltd.,... Bombay	350 0 0		
India Electric Works Ltd., Behala (24-Parganas)	350 0 0		
C. C. Wakefield & Co. Ltd., Bombay ...	350 0 0		
Angelo Brothers Ltd., Cossipore, Calcutta ...	300 0 0		
Associated Exports Imports Corporation,... Calcutta	300 0 0		
Association of Merchants & Manufacturers of Textile Stores & Machinery, Bombay ...	300 0 0		
British Metal Corporation (India) Ltd., Calcutta	300 0 0		
Electrical Storage Co. Ltd., Calcutta ...	300 0 0		
Ganges Rope Co. Ltd., Calcutta	300 0 0		
J. C. Gammon Ltd., Bombay	300 0 0		
Glenfield & Kennedy Ltd., Bombay ...	300 0 0		
Indian Galvanizing Co. (1926) Ltd., Calcutta	300 0 0		
Indian Rope Manufacturers' Association, Calcutta	300 0 0		
Metal Rolling Works Ltd., Bombay ...	300 0 0		
North India Light Weight Steels Ltd., New Delhi	300 0 0		
Sen-Raleigh Industries of India Ltd., Calcutta	300 0 0		
Aluminium Mfg. Co. Ltd., Calcutta ...	275 0 0		
Bihar Firebricks & Potteries Ltd., Mugma ...	275 0 0		
Gannon Dunkerley & Co. Ltd., Bombay ...	275 0 0		
Sankey Electrical Stampings Ltd., Bhandup	275 0 0	29,000 0 0	
c) Other Sustaining Members at Rs 250/- each ...		1,50,002 12 0	
d) Sustaining Members (Associates)		3,850 6 0	
e) Ordinary Members		1,727 10 0	
		Total Subscription	2,19,080 12 0
		Grand Total	6,39,080 12 0

APPENDIX 14.16

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31 MARCH 1953

RECEIPTS

Sl No.	Heads of Receipts	Budget Estimates	Revised Budget Estimates	Actuals
		Rs As P	Rs As P	Rs As P
1.	Opening Balance			
	i) Bank			2,27,682 8 0
	ii) Cash in Hand			111 2 6
	iii) Imprest			700 0 0
	iv) Fixed Deposit			3,00,000 0 0
2.	Government Grant	4,20,000 0 0	4,20,000 0 0	4,20,000 0 0
3.	Subscription			
	a) For 1951	—	—	2,000 0 0
	b) For 1952	2,50,000 0 0	2,20,000 0 0	1,08,917 0 0
	c) For 1953	—	—	92,353 12 0
4.	Interest on Fixed Deposit and other Investments	3,750 0 0	1,600 0 0	1,591 4 0
5.	Miscellaneous Receipts	1,250 0 0	2,500 0 0	3,075 3 3
6.	Recovery of Bills for sale of Publications	45,000 0 0	30,000 0 0	71,400 11 3
7.	Commission on Sale of Foreign Publications	15,000 0 0	13,400 0 0	—
		7,35,000 0 0	6,87,500 0 0	12,27,831 9 0
8.	Miscellaneous Credits	—	—	17,110 3 3
	Total	7,35,000 0 0	6,87,500 0 0	12,44,941 12 3

PAYMENTS

Sl No.	Heads of Expenditure	Budget Estimates	Revised Budget Estimates	Actuals
		Rs As P	Rs As P	Rs As P
1.	Pay of Officers	2,20,000 0 0	1,42,000 0 0	1,38,556 10 0
2.	Allowances of Officers	34,000 0 0	18,000 0 0	17,210 10 0
3.	Provident Fund Contribution of Officers (including interest)	18,980 0 0	15,000 0 0	12,661 0 0
4.	T.A. for: i) Officers	52,000 0 0	45,000 0 0	41,171 7 9
	ii) Committee Members	10,500 0 0	10,000 0 0	8,448 9 0
5.	Pay of Establishment	1,34,000 0 0	1,09,000 0 0	1,07,218 7 0
6.	Allowances of Establishment	91,000 0 0	71,000 0 0	69,451 15 0
7.	Provident Fund Contribution for Staff (including interest)	11,200 0 0	10,000 0 0	8,813 0 0
8.	T.A. for Staff	7,000 0 0	6,000 0 0	5,279 11 0
9.	Subscription for ISO and IEC	15,000 0 0	15,500 0 0	15,077 12 0
10.	Printing (Publication) Charges	77,000 0 0	55,000 0 0	40,584 5 9
11.	Other Charges:			
	i) Stationery including printing	20,000 0 0	25,000 0 0	20,920 7 3
	ii) Postage and Telegrams	16,700 0 0	18,000 0 0	14,610 13 11
	iii) Purchase of Publications:			
	a) for Sale	3,000 0 0	3,000 0 0	2,702 12 3
	b) for Library	7,700 0 0	10,000 0 0	9,831 14 6
	iv) Telephones	6,800 0 0	5,000 0 0	4,155 6 6
	v) Furniture	10,200 0 0	16,000 0 0	8,554 6 0
	Office Equipment	15,000 0 0	18,000 0 0	13,333 14 9
	vi) Rent of Building	17,000 0 0	17,000 0 0	16,500 0 0
	vii) Electric and Water Charges	2,520 0 0	2,150 0 0	1,533 15 6
	viii) Miscellaneous	12,400 0 0	14,000 0 0	13,598 13 6
	ix) Advertisement	7,000 0 0	7,000 0 0	4,053 4 0
	x) Audit Charges	1,000 0 0	1,200 0 0	1,160 0 0
	xi) Depreciation on Head 11-v	—	—	—
	xii) Medical Relief	7,000 0 0	4,000 0 0	1,813 7 9
12.	Charges for Convening ISO meetings on Lac and Mica	2,500 0 0	150 0 0	145 0 0
13.	Testing and Investigation Fees	7,000 0 0	—	—
		8,06,500 0 0	6,37,000 0 0	5,77,387 11 5
14.	Miscellaneous Remittances			30,547 15 1
15.	Closing Balances			
	i) Fixed Deposit			3,08,500 0 0
	ii) Imprest			700 0 0
	iii) Cash in hand			9 0 0
	iv) Bank Balance			3,27,797 1 9
	Total	8,06,500 0 0	6,37,000 0 0	12,44,941 12 3

APPENDIX 14.16 (*Contd*)

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 MARCH 1953

EXPENDITURE

Sl No.	Heads of Expenditure	Budget Estimates	Revised Budget Estimates	Actuals
		Rs As P	Rs As P	Rs As P
1.	Pay of Officers	2,20,000 0 0	1,42,000 0 0	1,38,556 10 0
2.	Allowances of Officers	34,000 0 0	18,000 0 0	17,210 10 0
3.	Provident Fund Contribution of Officers (including interest)	18,980 0 0	15,000 0 0	12,661 0 0
4.	T.A. for:			
	i) Officers	52,000 0 0	45,000 0 0	41,171 7 9
	ii) Committee Members	10,500 0 0	10,000 0 0	8,448 9 0
5.	Pay of Establishment	1,34,000 0 0	1,09,000 0 0	1,07,218 7 0
6.	Allowances of Establishment	91,000 0 0	71,000 0 0	69,451 15 0
7.	Provident Fund Contribution for Staff (including interest)	11,200 0 0	10,000 0 0	8,813 0 0
8.	T.A. for Staff	7,000 0 0	6,000 0 0	5,279 11 0
9.	Subscription for ISO and IEC	15,000 0 0	15,500 0 0	15,077 12 0
10.	Printing (Pub.) Charges	77,000 0 0	55,000 0 0	40,584 5 9
11.	Other Charges			
	i) Stationery including Printing	20,000 0 0	25,000 0 0	20,920 7 3
	ii) Postage and Telegrams	16,700 0 0	18,000 0 0	14,610 13 11
	iii) Purchase of Pub.			
	a) Books for Sale	3,000 0 0	3,000 0 0	2,702 12 3
	b) Books for Library	7,700 0 0	10,000 0 0	941 5 6
	iv) Telephones	6,800 0 0	5,000 0 0	4,155 6 6
	v) a) Furniture	10,200 0 0	16,000 0 0	873 14 0
	b) Office Equipment	15,000 0 0	18,000 0 0	1,182 0 3
	vi) Rent of Building	17,000 0 0	17,000 0 0	16,500 0 0
	vii) Electric and Water Charges	2,520 0 0	2,150 0 0	1,533 15 6
	viii) Miscellaneous	12,400 0 0	14,000 0 0	13,598 13 6
	ix) Advertisement	7,000 0 0	7,000 0 0	4,053 4 0
	x) Audit Charges	1,000 0 0	1,200 0 0	1,160 0 0
	xi) Depreciation on Head 11-v	—	—	4,419 2 0
	xii) Medical Relief	7,000 0 0	4,000 0 0	1,813 7 9
12.	Charges for Convening ISO Meetings on Lac and Mica	2,500 0 0	150 0 0	145 0 0
13.	Testing and Investigation Fees	7,000 0 0	—	—
		8,06,500 0 0	6,37,000 0 0	5,53,083 13 11
	Excess of Income over Expenditure	—	50,500 0 0	1,39,576 7 1
		8,06,500 0 0	6,87,500 0 0	6,92,660 5 0

INCOME

Sl No.	Heads of Income	Budget Estimates	Revised Budget Estimates	Actuals
		Rs As P	Rs As P	Rs As P
1.	Government Grant	4,20,000 0 0	4,20,000 0 0	4,20,000 0 0
2.	Contribution from Other Sources	—	—	—
3.	Subscription for 1952	2,50,000 0 0	2,20,000 0 0	2,21,080 12 0
4.	Interest on Fixed Deposits	3,750 0 0	1,600 0 0	1,591 4 0
5.	Miscellaneous Receipts	1,250 0 0	2,500 0 0	3,075 3 3
6.	Sale Proceeds of ISI Pub.	45,000 0 0	30,000 0 0	29,247 0 6
7.	Sale Proceeds of:			
	i) ASTM	—	—	6 14 0
	ii) ASA	—	—	1,412 1 0
	iii) SAA	—	—	11 4 0
	iv) Misc.	—	—	1,524 8 0
8.	Commission on Sale of Foreign Publications:			
	i) ICE			57 2 0
	ii) ASTM			779 0 0
	iii) ASA	15,000 0 0	13,400 0 0	292 1 3
	iv) SAA			48 12 0
	v) BSI			13,534 7 0
		7,35,000 0 0	6,87,500 0 0	6,92,660 5 0
	Excess of Expenditure over Income	71,500 0 0	—	—
		8,06,500 0 0	6,87,500 0 0	6,92,660 5 0

APPENDIX 14.16 (*Contd*)

BALANCE SHEET AS AT 31 MARCH 1953

LIABILITIES	Rs	As	P	Rs	As	P
1. Subscription for 1953				92,353	12	0
2. Building Fund				2,07,752	0	0
3. Inland Payable Credits:						
i) Sada Nand & Sons	3,214	0	0			
ii) Metropolitan Book Depot Ltd.	66	5	0			
iii) Gestetner Duplicators Ltd.	42	6	0			
iv) Matchwell Electricals (India) Ltd.	1,948	0	0			
	5,270	11	0	5,270	11	0
4. Overseas Bills Payable:						
i) BSI	21,463	12	0			
ii) SAA	51	2	0			
iii) ASA	702	5	0			
iv) ASTM	756	6	0			
v) ICE/ISE	149	9	0			
vi) CSA	58	2	0			
vii) Finlands Standards Association	3	5	0			
viii) AFNOR	7	0	0			
ix) World's Meteorological Organization	4	4	0			
x) Beuth Vertrieb GmBH	451	8	0			
	23,647	5	0	23,647	5	0
5. Suspense Account				8	8	0
6. Excess of Income over Expenditure (1952-53)	1,39,576	7	1			
Last Year's Balance	2,70,622	13	8			
	4,10,199	4	9	4,10,199	4	9
TOTAL				7,39,231	8	9

ASSETS	Rs	As	P	Rs	As	P
1. Balance in Bank				3,27,797	1	9
2. Cash in hand				9	0	0
3. Imprest				700	0	0
4. Fixed Deposits				3,08,500	0	0
5. Other deposits (Delhi Safe Vault)				80	0	0
6. Unspent Balance in Franking Machine				404	3	9
7. Advances Adjustable:						
i) Conveyance Advances	671	0	0			
ii) Dy. Controller of Printing & Stationery, Calcutta	6,004	8	0			
	6,675	8	0	6,675	8	0
8. Outstanding Bills for Sale of Publications				15,129	7	1
9. Furniture and Office Equipment						
Balance as at 31-3-52	43,584	10	6			
Purchases during 1952-53	19,832	6	6			
	63,417	1	0			
Less deduction vide V. No. 153/June 52 (Rs 13/-) and Adj. V. 32/March 53 (Rs 35/-)	48	0	0			
	63,369	1	0			
Less Depreciation	4,419	2	0			
	58,949	15	0	58,949	15	0
10. Publications (Library)						
Balance as at 31-3-52	12,113	6	2			
Purchases during 1952-53	8,890	9	0			
	21,003	15	2			
Less cost of Publications disposed of	17	10	0			
	20,986	5	2	20,986	5	2
TOTAL				7,39,231	8	9

I certify that I have obtained all the information and explanations that I required and that, subject to the remarks in the audit report, the balance sheet exhibits, in my opinion, the true financial position of the ISI according to the best of my information and explanations given to me and as shown by the books of the ISI.

Sd. S. C. NANDA
Assistant Examiner
A.G.F.R. & S., New Delhi

Sd. B. L. BHATIA
Secretary (Administration),
Indian Standards Institution
19, *University Road, Delhi-8*

		Rs as
IS : 385-1953 IS : 386-1953 IS : 411-1953 IS : 419-1953 to IS : 428-1953 IS : 430-1953 IS : 431-1953	Miscellaneous Painters' Material	1 0 to 1 8

BITUMEN, TAR AND TAR PRODUCTS

IS : 73-1950	Asphaltic Bitumen and Fluxed Native Asphalt for Road-Making Purposes	3 0
IS : 212-1950	Crude Coal Tar for General Use	1 8
IS : 215-1951	Road Tar	3 0
IS : 216-1951	Coal Tar Pitch	1 12
IS : 217-1951	Cutback Bitumen	3 8
IS : 218-1952	Creosote and Anthracene Oil for Use as Wood Preservatives	2 0

SOAPS

IS : 284-1951	Toilet Soap	0 8
IS : 285-1951	Laundry Soap	1 0
IS : 286-1951	Methods of Sampling and Test for Soaps ...	3 0

ESSENTIAL OILS

IS : 326-1952	Methods of Test for Essential Oils	2 8
IS : 327-1952	Lemongrass Oil (East Indian Lemongrass Oil)	1 0
IS : 329-1952	Sandalwood Oil	1 0

LUBRICATING OILS AND GREASES

IS : 310-1951	Methods of Sampling and Test for Lubricants, Part I	5 0
IS : 311-1951 to IS : 316-1951	Cylinder Oils : Pure Mineral, Ordinary ; Compounded, Ordinary ; Pure Mineral, Super Heat ; Compounded, Super Heat ; Pure Mineral, Filtered ; Compounded, Filtered	0 8 to 0 12
IS : 408-1953	Grease A No. 0, Graphited	1 0
IS : 409-1953	Grease S No. 3	1 0

CHEMICALS, HEAVY

IS : 170-1950	Acetone	1 8
IS : 249-1951	Sodium Bichromate, Technical	1 4
IS : 251-1950	Soda Ash, Technical	1 4
IS : 252-1950	Caustic Soda, Technical	1 4
IS : 253-1950	Edible Common Salt	1 8
IS : 254-1950	Magnesium Chloride, Technical	1 4
IS : 255-1950 to IS : 262-1950	Sulphates of Metals	1 0 to 1 4
IS : 263-1950 to IS : 266-1950	Acids : Boric, Nitric, Hydrochloric, Sulphuric ...	1 4 to 2 4
IS : 294-1951	Superphosphate	1 4
IS : 295-1951	Bleaching Powder, Unstabilized	1 4
IS : 297-1951	Sodium Sulphide, Technical	1 4
IS : 299-1951	Alumino-Ferric	1 4
IS : 301-1951	Potassium Nitrate, Technical	1 8
IS : 321-1952	Ethyl Alcohol (Absolute Alcohol)	2 4
IS : 322-1952	Power Alcohol	1 8
IS : 323-1952	Rectified Spirit	2 4
IS : 324-1952	Denatured Spirit	1 8
IS : 380-1952	French Chalk, Technical	1 8
IS : 381-1952	Sodium Silicate for Soap Industry	1 4

CHEMICALS, FINE

IS : 229-1950 to IS : 231-1950	Acetates : Ethyl, Butyl, Amyl	1 8 each
IS : 245-1950	Trichloroethylene	2 0
IS : 246-1950 to IS : 248-1950	Sodium : Thiosulphate, Sulphite, Bisulphite ...	1 8 to 1 12
IS : 296-1951	Anhydrous Sodium Carbonate, Pure and Analytical Reagent	1 12
IS : 330-1951	Chromic Acid	1 4
IS : 331-1951	Chrome Salt	1 4
IS : 332-1951	Chrome Alum Potash	1 4
IS : 333-1951	Potassium Permanganate, Technical and Pharmaceutical	1 0
IS : 376-1952	Sodium Hydroxide, Analytical Reagent ...	1 12
IS : 378-1952	Potash Alum, Pharmaceutical	1 8
IS : 379-1952	Sodium Sulphate, Anhydrous, Pharmaceutical ...	1 8
IS : 388-1952	Hydroquinone, Photographic Grade	1 8

OFFICE STATIONERY AND EQUIPMENT

IS : 219-1950 to IS : 222-1950	Inks ; Powders, Tablets and Fluid	1 4 to 1 8
IS : 393-1952	Ink, Stamp-Pad	1 8
IS : 394-1952	Ink, Cloth Marking, Black	1 8

TEXTILES AND TEXTILE ENGINEERING

IS : 1-1951	The National Flag of India (Cotton Khadi) ...	2 0
IS : 9-1949	Method for Determining Shrinkage of Cotton and Linen Cloth on Washing	0 8
IS : 11-1949	Grading of Wool for Export	0 8
IS : 19-1949	Procedures for Testing Cotton Textiles and Cordages (Other than Jute) for Resistance to Attack by Micro-Organisms	1 0
IS : 32-1950	Code for Seaworthy Packaging of Woollen Textiles	1 0
IS : 171-1951	Cotton Yarn, Grey	1 0
IS : 172-1951 to IS : 188-1951	Cotton Fabrics	1 0 to 1 8
IS : 189-1951	Tamarind Kernel Powder for Use in the Cotton Textile Industry	1 8
IS : 199-1950	Methods for the Estimation of Moisture, Total Size, Starch, Ash and Wax Content in Grey and Bleached Cotton Textile Materials	1 8
IS : 200-1950	Method for Determination of Copper Number of Cotton Textile Materials	1 0
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IS: 23-1950	99 Percent Aluminium Notched Bars and Ingots for Remelting for Aircraft Purposes	0	12
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IS: 302-1951	General Requirements for Electrical Appliances for Domestic Use	1	0
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