

INDIAN STANDARDS INSTITUTION (ISI)

ELEVENTH
ANNUAL REPORT

APRIL 1957 — MARCH 1958



MANAK BHAVAN
9 MATHURA ROAD, NEW DELHI 1

Price Rs 2.00
Free to Members

INDIAN STANDARDS INSTITUTION

(As on 31 March 1958)

President	SHRI LAL BAHADUR SHASTRI Minister for Commerce & Industry, Government of India
Vice-Presidents	LALA SHRI RAM 22 Curzon Road, New Delhi SHRI E. A. NADIRSHAH Adviser and/or Consultant, Concrete Association of India, Bombay LALA SHRI RAM
Chairman <i>Executive Committee</i>	
Chairman <i>Finance Committee</i>	SHRI T. VEDANTAM Under Secretary, Ministry of Finance, Government of India
Chairman <i>Engineering Division Council (EDC) and Standing Working Committee Engineering (SWCE)</i>	SHRI S. L. KIRLOSKAR Bungalow No. 1, Modi Baug, Ganeshkhind Road, Poona 5
Vice-Chairman, EDC & SWCE	DR. B. D. KALELKAR Industrial Adviser (Eng), Development Wing, Ministry of Commerce & Industry SHRI E. A. NADIRSHAH
Chairman <i>Building Division Council (BDC) and Standing Working Committee Building (SWCB)</i>	
Vice-Chairman, BDC & SWCB	SHRI C. P. MALIK Director, National Buildings Organization, New Delhi
Chairman <i>Textile Division Council (TDC) and Standing Working Committee Textiles (SWCT)</i>	SHRI BHARAT RAM Delhi Cloth & General Mills Co. Ltd., Delhi
Vice-Chairman, TDC	DR. T. S. SUBRAMANIAN Director, Ahmedabad Textile Industry's Research Association, Ahmedabad
Chairman <i>Chemical Division Council (CDC) and Standing Working Committee Chemicals (SWCC)</i>	DR. A. NAGARAJA RAO Chief Industrial Adviser, Development Wing, Ministry of Commerce & Industry
Vice-Chairman, CDC & SWCC	SHRI MADHAV B. BHAGVAT Chief Executive Officer (Operations), Tata Chemicals Ltd., Bombay
Chairman <i>Agricultural and Food Products Division Council (AFDC) and Standing Working Committee Agricultural and Food Products (SWCAF)</i>	DR. M. S. RANDHAWA Additional Secretary, Ministry of Food & Agriculture, Govern- ment of India, and Vice-President, Indian Council of Agri- cultural Research
Vice-Chairman, AFDC & SWCAF	DR. V. N. PATWARDHAN Director, Nutrition Research Laboratories, Coonoor
Chairman <i>Structural and Metals Division Council (SMDC) and Standing Working Committee Structural and Metals (SWCSM)</i>	SHRI J. J. GHANDY Director, Tata Iron & Steel Co. Ltd., Jamshedpur
Vice-Chairmen, SMDC & SWCSM	SHRI S. L. KUMAR Director, Research, Railway Testing & Research Centre, Lucknow DR. B. R. NIJHAWAN Director, National Metallurgical Laboratory, Jamshedpur
Chairman <i>Electrotechnical Division Council (ETDC) and Standing Working Committee Electrotechnical (SWCET)</i>	SHRI M. HAYATH Member, Central Water & Power Commission (Power Wing), Shahjehan Road, New Delhi
Vice-Chairman, ETDC & SWCET	SHRI B. V. BALIGA Chief Engineer, All India Radio, New Delhi

(Continued on cover page 3)

INDIAN STANDARDS INSTITUTION (ISI)

ELEVENTH
ANNUAL REPORT

APRIL 1957 — MARCH 1958



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

Headquarters

MANAK BHAVAN, 9 MATHURA ROAD, NEW DELHI 1

Phones: 45915-9 Grams: 'Manaksansta'
43063-4 New Delhi

Bombay Branch Office
4th Floor, 40/40A Cawasji
Patel Street

Fort, Bombay 1
Phone: 252782

Grams: 'Manaksansta' Bombay

Calcutta Branch Office
P-II Mission Row Extension
Calcutta 1

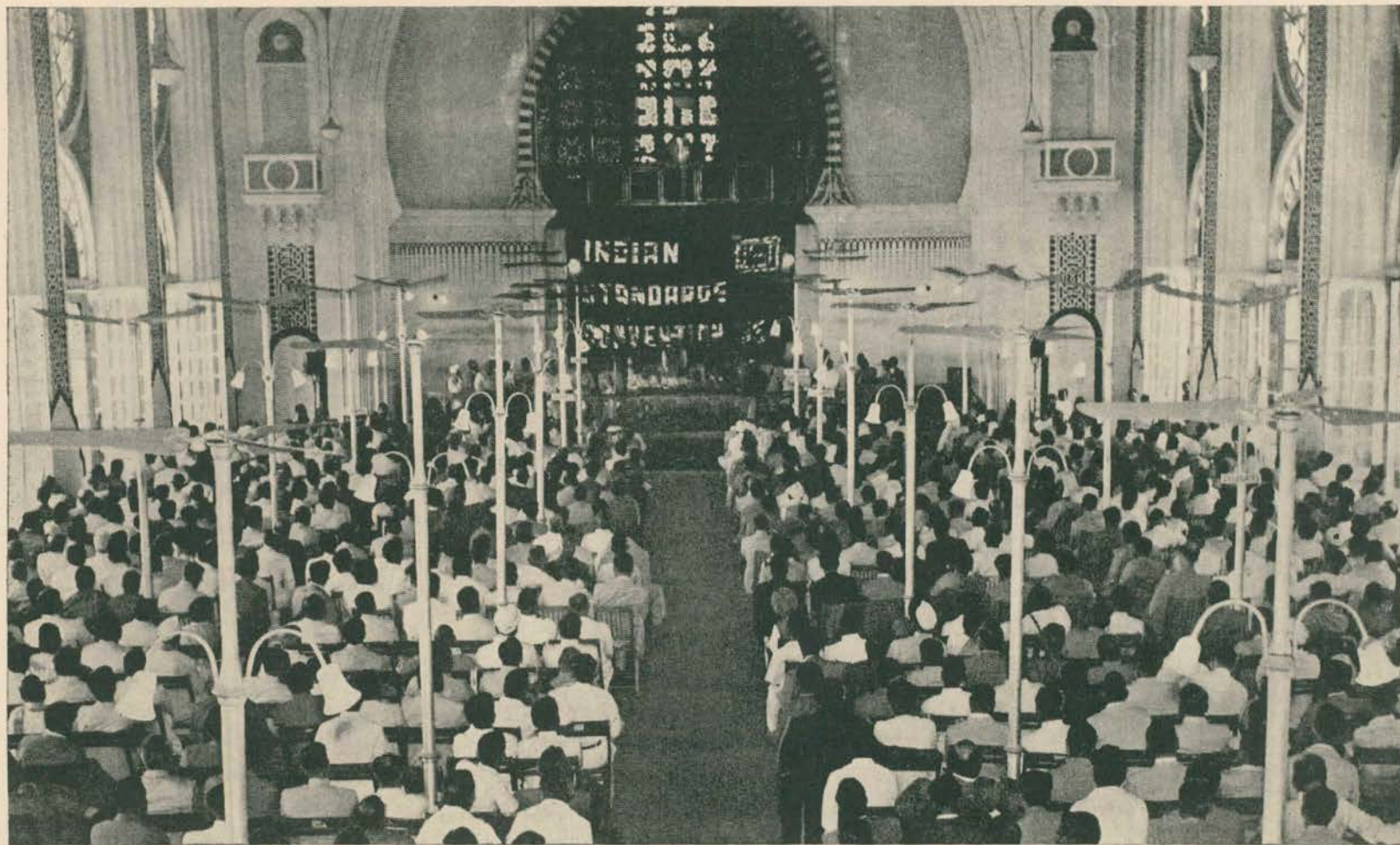
Phone: 23-1823

Grams: 'Manaksansta' Calcutta

Madras Branch Office
2/21 First Line Beach
Madras 1

Phone: 3836

Grams: 'Manaksansta' Madras



A DISTINGUISHED GATHERING OF OVER ONE THOUSAND LISTENING TO SHRI MORARJI DESAI, UNION MINISTER FOR COMMERCE & INDUSTRY, AND PRESIDENT ISI, DELIVERING HIS INAUGURAL SPEECH AT THE INDIAN STANDARDS CONVENTION IN THE SENATE HALL OF MADRAS UNIVERSITY ON 23 DECEMBER 1957

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 the industry as the fulfilment of a demand, first put forward by the Twelfth Industries Conference held in 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 assisting in the rationalization of industry by co-ordinating the efforts of producers and consumers for the improvement of appliances, processes, raw materials and products. It promotes quality control methods, and provides for the registration of Standard Marks applicable to materials, commodities, etc, conforming to standards issued by it.

Organization and Work

The overall control of the Institution rests with the General Council (GC), on which are represented 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, subscriptions from members, including State Governments, and from sale of standards.

In the preparation of standards, the ISI functions through a large number of Sectional Committees, Subcommittees and Panels, consisting of scientists, technologists and representatives drawn from industrial and Government organizations. These committees are appointed by the EC or the seven Division Councils of the ISI, namely the Engineering Division Council (EDC), the Building Division Council (BDC), the Textile Division Council (TDC), the Chemical Division Council (CDC), the Agricultural and Food Products Division Council (AFDC), the Structural and Metals Division Council (SMDC) and the Electro-technical Division Council (ETDC).

Proposals for formulating Indian Standards are normally entertained from the members of the ISI. Every proposal is scrutinized, 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 has to be weighted in favour of the consumers' interests. The sectional committees form subcommittees and panels, when required, and instruct them to prepare a working document or a draft on the subject after study of data and literature available on the subject. Where necessary, tests are carried out in collaborating laboratories. 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 reconsidered in the light of comments received and, when finalized, becomes a recommendation of the Sectional Committee. It is, then, submitted for approval of 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.

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 standard is finally printed.

The bulk of the technical work towards the preparation of standards is done by the ISI committees. The staff in the ISI Directorate co-ordinates the work of these committees, undertakes the necessary secretarial duties, collects and supplies background data, organizes investigations and enquiries, ensures that delays are avoided and standards are appropriately examined at each stage of formulation. Finally, the standards are edited and published by the Directorate. The published standards are brought to the notice of the various indenting and purchase departments of the different Governments, Central and States, to ensure their early adoption.

Implementation and Certification

The ISI believes that the acceptance of Indian Standards by Industry or Government can best be promoted through the intrinsic merit of the standards themselves. The fact that Indian Standards are formulated in collaboration with the largest number of interests concerned should, it is believed, ensure their widespread acceptance. An important step taken by the ISI to aid industrialists to produce quality goods and for the consumers to recognize them, is the establishment of the ISI Certification Marks Division which issues licences to manufacturers to stamp their goods with a Standard Mark certifying that the goods conform to the relevant Indian Standard. The presence of this mark on any article is a guarantee to the consumer in regard to the quality of the article he is purchasing. The extensive use of the facilities which ISI provides through this scheme should benefit the industrialists and the consumers in the country, and also strengthen and promote India's export trade.

Indian Standards are voluntary, and the membership of the Institution involves no compulsion on the part of members to follow them either in manufacture or in making purchases. All the same, a very large number of Indian Standards has already been adopted by Government departments for the purpose of making their own purchases. In addition, representatives of various departments of the Central Government have agreed, as decided at an inter-departmental meeting called by the Ministry of Commerce & Industry in September 1953, to place all orders on the basis of specifications contained in the Indian Standards wherever such standards exist. As a result of this policy decision and the Government directive that each department should let the Institution know within a reasonable time why a particular standard may not be acceptable, is going a long way in diverting Indian production to standardized channels. It is but natural that when any industry begins to produce items in response to official tenders, in accordance with standard specifications, the benefits of the improved quality become available to all consumers of such products.

International Sphere

The ISI also works at international level and collaborates closely with the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), the two important bodies engaged in international standardization. In addition, close liaison has been established with National Standards Bodies of the Commonwealth. The ISI is also active at the executive levels of the ISO and the IEC. It is an elected member of the governing Council of the former and the Committee of Action of the latter. Dr. Lal C. Verma, Director, ISI, was the elected Vice-President of ISO from 1949 to 1955.

Membership

Membership of the ISI is open to all organizations and persons interested in the objects of the ISI. There are three categories of membership, namely (i) Sustaining Members and Sustaining Members (Associates), (ii) Ordinary Members, and (iii) Committee Members. Sustaining membership is generally open to all organizations, companies, firms, Government departments and neighbouring countries; but the Associate membership is limited to firms with an annual business of less than Rs 250 000 and professional, scientific, technological and educational institutions. Individuals interested in the work of the ISI can join as Ordinary Members. Persons serving on the ISI Councils and Committees are classed as Committee Members. Depending upon the class of membership, members have the right to apply for information on standardization both in India and abroad, to give evidence at appropriate technical levels 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 issues an ISI Handbook of publications giving general information about organizational set-up of the ISI and a comprehensive list of Indian Standards with a brief description of each. The ISI also issues free to its members in all categories a useful and informative Bulletin every two months; its annual subscription for non-members is six rupees. The ISI Bulletin contains articles, research papers and other information relating to standardization activities in India and abroad.

ACKNOWLEDGEMENT

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 the Government.

CONTENTS

	PAGE
1. GENERAL REVIEW	1
1.2 ISI Convention 1957	1
1.3 Conference of Representatives of the Central and State Governments to Consider the Implementation of Indian Standards and Recognition of the ISI Certification Marks	2
1.4 ISI Headquarters	3
1.5 Branch Offices	3
1.6 Research and Testing	3
1.7 Administration	4
1.8 Publications	5
1.9 Library	5
1.10 Public Relations	5
1.11 Publicity	6
2. DIVISIONS AND SECTIONS	8
2.0 Introduction	8
2.1 Engineering Division	9
2.2 Building Division	12
2.3 Textile Division	16
2.4 Chemical Division	19
2.5 Agricultural and Food Products Division	24
2.6 Structural and Metals Division	26
2.7 Electrotechnical Division	31
2.8 Certification Marks and Implementation Division	33
2.9 Statistical Section	35
2.10 Sectional Committees Under the Executive Committee	35
3. STANDARDIZATION ABROAD AND AT INTERNATIONAL LEVEL	36
3.1 Relations with Other National Standards Authorities	36
3.2 International Organization for Standardization (ISO)	36
3.3 International Electrotechnical Commission (IEC)	41
4. APPENDICES	44
4.1 Indian Standards Published and in Press During 1957-58	44
4.2 Contributions and Subscriptions by the Central and State Governments, Organizations, Firms and Individuals, for the Calendar Year 1957... ..	46
4.3 Audited Accounts for the Year 1957-58	49
4.4 Articles Covered by Standard Marks Specified During 1957-58	52
4.5 Licences Issued Under Certification Marks Scheme During 1957-58	52
4.6 Licences Renewed Under the ISI Certification Marks Scheme During 1957-58	54
4.7 Indian Standards for Which Applications were Received for Licences Under the ISI Certification Marks Act During 1957-58	55
4.8 List of Testing Laboratories Provisionally Approved for the Purpose of Certification Marks Scheme of the ISI as on 31 March 1958	55
4.9 Indian Standards Adopted by Various Government Departments During 1957-58	56
4.10 List of Indian Delegates and ISO Meetings Attended by Them	61

ELEVENTH ANNUAL REPORT

OF THE

INDIAN STANDARDS INSTITUTION

(APRIL 1957 — MARCH 1958)

1. GENERAL REVIEW

1.1 In an organization like the Indian Standards Institution, particularly in the developing economy of the country, every year of its existence is a step forward in the direction of further accomplishments. The eleventh year, closing on 31 March 1958, was, in more than one way, a year of many an achievement. The Institution realized its long-cherished ambition of having its own permanent headquarters, when the Directorate of the Institution shifted to its new building at Mathura Road, New Delhi. The number of standards published and under print increased by 160, bringing the total to 1 079. With the increasing tempo of activities the number of committees, subcommittees, and panels also went up from 661 to 708, raising the total committee membership to 8 196.

The increase in subscribing membership of the Institution which rose from 1 347 to 1 510 and the record income of about 4.5 lakhs from sale of Indian Standards during the year showed that the country was becoming increasingly aware and appreciative of the good work being done by ISI in the field of standardization.

In pursuance of the Institution's practice of providing a common platform to scientists, technologists and others for the sharing of their knowledge and experience in the relevant fields of their activities, the third Indian Standards Convention was held in Madras in December 1957 (*see 1.2*) which dealt with many important subjects, prominence having been given to food and agricultural subjects.

For the expeditious and whole-hearted implementation of Indian Standards, a Conference of representatives of Central Government, State Governments, production units, export promotion councils and river-valley projects was held on 23 July 1957. The Conference made some valuable recommendations (*see 1.3*) which will go a long way in the implementation of Indian Standards and recognition of ISI Certification Marks. Similarly, to consider ways and means for popularizing the certification marks, the second meeting of the Certification Marks Advisory Committee was held on 24 March 1958, which recommended ways and means for making the industry and the consumer fully conscious of the advantages of certification marking and for making producers and consumers of Indian goods standards conscious (*see 2.8.1*).

In regard to the introduction of metric system in the country, the Institution continued to serve as a clearing-house for information, and published a number of standards for the industry and commerce for the smooth changeover to the metric system. The Institution has chalked out a programme for revising published standards in terms of metric system and for preparing standards in future on the new basis.

The Institution also continued its activities in international organizations like the ISO and IEC in

the formulation of international recommendations, in the exchange of technical information, and in the advancement of the standards movement.

1.2 ISI Convention 1957 — The third Indian Standards Convention, held in Madras from 22 to 29 December 1957, was inaugurated by Shri Morarji Desai, Union Minister for Commerce & Industry, and President of the ISI. Shri Morarji Desai, referring to the task before the Institution, in relation to the industrialization of the country, exhorted Indian industry to produce goods of quality. Talking of standardization and exports business, he was of the opinion that standardization not only promotes exports business and earns foreign exchange, but also assists the industry and the producers in finding out whether their goods compare favourably with those produced by other countries.

Dealing with the implementation of Indian Standards, he pleaded for their general adoption and pointed out the need for creating awareness among consumers to increase the demand for certified standard goods.

Nearly five hundred delegates representing the Indian industry, trade, Central and State Governments, professional, technical and research institutions, etc. from all over the country, participated in the deliberations of the ten technical sessions. In all, 162 technical papers were submitted and discussed by the participating delegates.

1.2.1 Reception Committee—The success of the Convention was due, to a considerable extent, to the efficient organization of the Reception Committee which, under the inspired leadership of Shri M. A. Chidambaram, was able to muster the co-operation of large number of representatives of trade, various chambers of commerce and organizations, Southern Universities, Government departments, industrial organizations, and the Madras Corporation.

The Committee arranged a number of receptions and conducted technical tours, in addition to various social functions and a variety entertainment programme.

1.2.2 Technical Sessions — The following table gives particulars in respect of each of the ten technical sessions.

SUBJECT	CHAIRMAN	NO. OF TECHNICAL PAPERS
Testing and Certification for Quality	Shri P. L. Kumar, Technical Director, Amalgamations Ltd., Madras	20
Implementation of Indian Standards	Shri P. H. Kutar, Technical Director, Tata Iron & Steel Co. Ltd., Jamshedpur	20

SUBJECT	CHAIRMAN	NO. OF TECHNICAL PAPERS
Problems of Changeover to Metric System	Shri Satish Chandra, Deputy Minister, Commerce & Industry, and Chairman, Standing Metric Committee, Government of India	11
Modern Physico-Chemical Methods of Test and Analysis	Dr. K. L. Moudgill, Mussoorie	25
Modernization of Farming Practices	Dr. Punjab Rao Deshmukh, Minister of Co-operation, Ministry of Food & Agriculture, Government of India	27
Storage and Conservation of Agricultural and Food Products	Shri M. Bhaktavatsalam, Minister for Home & Agriculture, Government of Madras	8
Agricultural Products as Raw Materials for Industry	Shri R. Venkataraman, Minister for Industries, Government of Madras	24
Food Quality	Lt-Col Jaswant Singh, Deputy Director General of Health Services, Ministry of Health, Government of India	14
Problems Connected with Physical Production of Documents	Padma Shri Dr. S. R. Ranganathan	7
Problems Connected with Documentation Work	Padma Shri Dr. S. R. Ranganathan	6

Details of the proceedings of the technical sessions, and of discussions held during the sessions, were covered in the March 1958 issue of ISI Bulletin.

1.3 Conference of Representatives of the Central and State Governments to Consider the Implementation of Indian Standards and Recognition of the ISI Certification Marks — Some six years ago, it will be recalled, the ISI had convened a conference of State Directors of Industries under the chairmanship of Shri Harekrushna Mahtab, the then Union Minister for Commerce & Industry, and President, ISI. The Conference had recommended, among other things, that a suitable machinery be set up by the ISI, in co-operation with the State Governments, to assist in the application of the ISI Certification Marks.

Subsequently, an inter-departmental meeting of representatives of the various Union Ministries, held in 1953, as also the Stores Purchase Committee, appointed by the Government of India, had, while recognizing the need for implementation of Indian Standards, recommended to the Central and State Governments that their purchases be made according to Indian Standards, wherever they exist. The Government of India, recognizing that Indian Standards represent the greatest common measure of agreement in the technical fields between manufacturers and users, had adopted over 90 percent of the published Indian Standards. However, considerable lag had been noticed in the use of Indian Standards by the State Governments and

local bodies. A conference of representatives of the Central and State Governments and other connected organizations was, therefore, held at New Delhi on 23 July 1957, under the chairmanship of Shri Nityanand Kanungo, Union Minister for Commerce, for considering the question of implementation of Indian Standards and recognition of the ISI Certification Marks. The Government of India was represented by the nominees of the Ministries of Commerce & Industry; Defence; Food & Agriculture; Irrigation & Power; Railways; Steel, Mines & Fuel; Transport & Communications; and Works, Housing & Supply. Besides the State Governments, the representatives of the following participated:

- a) *River-Valley Projects* — Bhakra Nangal, Damodar Valley Corporation, Rihand Dam and Tungabhadra Dam,
- b) *Production Units in the Public Sector* — Hindustan Aircraft, Hindustan Cables, Hindustan Insecticides, Hindustan Machine Tools, Hindustan Shipyard, Indian Telephone Industries, and Nangal Fertilizers,
- c) *Commodity Boards* — All India Handicrafts Board, and Khadi and Village Industries Commission,
- d) *Export Promotion Councils* for Cotton Textiles, Engineering, and Mica, and
- e) *Development Commissioner for Small-Scale Industries, State Trading Corporation, Planning Commission, and Council of Scientific & Industrial Research.*

The following Recommendations were unanimously adopted by the Conference:

Recommendation 1 — Indian Standard Specifications, as soon as published by the Indian Standards Institution, should be adopted by all agencies of the Central Government, State Governments, Municipal Corporations and other local bodies, and industrial undertakings, both in the public and the private sectors.

Recommendation 2 — When an Indian Standard Specification is available, it should invariably be used and the use of any other specification should be discouraged.

Recommendation 3 — In order to extend the scope of standardization in the country, it is necessary that municipal corporations and other local public bodies or corporations should become members of the Institution.

Recommendation 4 — Where it is necessary to prescribe standard requirements, it should be done by reference to the Indian Standard Specifications, rather than by incorporating in an Act or in any Regulation made thereunder, the requirements as laid down in the Indian Standard Specifications.

Recommendation 5 — The State Trading Corporation should, as far as possible, use the Indian Standard Specifications for commodities handled by them either for indigenous distribution or for import and export purposes.

Recommendation 6 — With a view to provide sufficient encouragement to the Certification Marking, it is necessary that the Central and State Governments give a lead in the matter by giving proper recognition to the ISI Certification Mark and directing the

industrial undertakings in the public sector to cover their production under Certification Marking.

Recommendation 7 — More reliance may be placed on goods bearing the Certification Mark than those without it and, therefore, preference should be given for such goods. It may be in the form of preferential treatment as regards inspection.

Recommendation 8 — Purchasing bodies, who have no suitable facilities for testing the products they purchase, should rely on the certified goods for their quality and avoid any further tests. Such purchasing departments, as have at present inspection organizations, should reduce the degree of inspection in case of certified goods; and after getting some experience should do away with the inspection gradually as recommended by the Commonwealth Standards Conference held at New Delhi in January 1957.

Recommendation 9 — The Central Government may, from time to time, declare the use of the Standard Mark compulsory for certain goods or classes of goods where the questions of public safety, hygiene and export promotion are involved.

Recommendation 10 — As the Certification Mark of the Institution, used under the Rules and Regulations of the Indian Standards Institution (Certification Marks) Act, 1952, would be of more use both for inter-State trade and for export, the quality marking scheme in different States should collaborate with the Indian Standards Institution and use the ISI Certification Mark for the goods for which Indian Standard Specifications are available.

Recommendation 11 — The Central Government, State Governments, municipal corporations and other industries in the public sector should help the Institution in the testing work connected with Certification Marking by expanding their laboratories, wherever necessary.

Recommendation 12 — The Ministries of the Central Government, State Governments, municipal corporations and other local bodies should indicate to the Institution the additional subjects on which they would like the Institution to prepare Indian Standard Specifications giving them on a priority basis.

Recommendation 13 — Facilities for active participation in the deliberations of the technical committees, set up by the Institution, should be given to representatives of State Governments, Multi-purpose River-Valley Projects, etc.

Recommendation 14 — Public Relations Officers of the State Governments and other bodies should co-operate with the Assistant Director (Public Relations) of the Institution in the dissemination of information about the Institution and the standards published by it and the Certification Marks.

1.4 ISI Headquarters — The ISI Directorate occupied in January 1958 its own building, known as 'Manak Bhavan'. The construction of the building, the foundation stone of which was laid by the Prime Minister, Shri Jawaharlal Nehru, at a colourful ceremony in 1954, is expected to cost

about Rs 20 lakhs when complete with lifts and air-conditioning plant.

The building is situated on a plot measuring 0.64 ha (or 1.6 acres) and has a floor area of 5 880 sq m (or 63 000 sq ft). The building has a basement and four storeys, besides a residential flat at the top of the building. The basement provides space for stores, publications, electric and air-conditioning equipment, etc. While floor I (or ground floor) has a conference hall, museum, library, canteen, and a sales and enquiry counter, it also houses a technical division and a section. Floors II, III and IV provide accommodation for the various technical and service divisions and a few committee rooms.

1.4.1 Building Fund — The Institution received with gratitude the sizeable contributions made by the industry and Central and State Governments towards the construction costs of its headquarters building. On 31 March 1958, the building fund contributions amounted to Rs 12.68 lakhs, including a few promises and reserves, Rs 9.33 lakhs having been collected by the close of previous year. The total contributions to the building fund, during the year under review, amounted to Rs 48 000.00.

1.5 Branch Offices — It has been the policy of the ISI to open branch offices at important industrial centres in the country. These branch offices act as clearing-houses of information for local members and others, and serve as liaison agencies between the commerce and industry and the ISI in regard to its activities.

Two branch offices had already been opened in previous years, one at Bombay in the year 1955 and the other at Calcutta in 1956. In the year under review, a branch office was opened in Madras. The office which started functioning from 10 May 1957 is intended to serve the entire southern region, namely Madras, Andhra, Kerala, and Mysore States.

To help the Madras Branch Office perform its functions more efficiently, an Advisory Committee was constituted under the chairmanship of Shri G. C. Kothari. The Committee consists of nearly 30 members representing regional organizations interested in standardization.

1.6 Research and Testing — Research and testing are basic to the development of economy, industry, sciences and technology, and in the field of standardization. Before laying down quality requirements and methods of test and sampling in Indian Standards, it is essential that these are scientifically tested and analysed in laboratories and test houses. Only then can Indian Standards further the cause of improving the quality of Indian products. The ISI has been collaborating with various research institutions, laboratories and testing organizations in the public and private sectors on a fairly extensive scale.

Since the Institution does not possess any laboratory of its own, nor is it considered practicable to establish one to deal with products concerning every walk of life, it has to rely upon the assistance of public and private laboratories. It is gratifying to record that fullest collaboration and assistance were available to the Institution from laboratories and research organizations in all fields of industry and technology; and in describing in the following paragraphs the research and test

programmes of various divisions and technical sections, we record our gratitude for the generous support enjoyed by the Institution in this respect.

The Building Division organized and carried out research and investigation on cement and concrete, lime, building stone, pozzolanic materials, gypsum building boards, glazed wall tiles, ridge tiles and ceiling tiles, magnesium oxychloride, plastic bitumen for waterproofing, flush doors, plywood, timber preservative, current meters, water coolers and beverage coolers, hook ladders and sieve shakers.

Textile subjects on which research was initiated included braided cotton cord, linen sewing thread, filter cloth, rayon handloom fabrics, and 'A' twill and 'L' twill jute bags for packing sugar.

Research with which the Chemical Division was concerned included 'Round Robin Tests', carried out by laboratories in France, UK, USA, and India on the bleach index and bleachability of seedlac and non-volatile matter soluble in cold alcohol in seedlac, shellac and bleached lac. Research was also carried out on acetic anhydride; imported and Indian alcohols; china-clay for textile and paper industries; sheet glass; glass containers for fruit preserves; lemongrass oil (East Indian); sandalwood oil; citronella oils of Ceylon and Java types; coal and coke; paper and boards; reptile skins; indigenous and imported samples of phenolic moulding powders; benzene and toluene; mixed screened indicator (developed by the National Physical Laboratory of India); bleaching earths used for decolourizing vegetable oils; mutton tallow; and marine oils.

The Agricultural and Food Products Division organized research and testing on milk products, cereal products, chocolate, sugar, glucose, insecticides, etc.

Research work, initiated by the Structural and Metals Division, aimed at establishing standard welding procedures, improving methods of testing weld test specimens; and testing the effect of size and shape of tensile test specimens on the yield stress values. Investigation work was also continued on cold-formed light-gauge structural sections, foundry facing materials; tank blocks for glass industry; methods of sampling manganese ore; and spalling tests for refractories. Research was also initiated for collecting data for corrosion protection of light-gauge steel sections, steel transmission towers, and steel work in foundations. In addition, investigations on the production and use of cold-formed light-gauge structural steel sections have been initiated at the National Physical Laboratory.

A few of the important investigation and testing problems taken up for the Electrotechnical Division were collection of performance data of high voltage insulators, electric fans, electric motors with Class 'E' insulation, stationary accumulators with tubular plates, and determination of insulation resistance of lamp caps and lampholders.

1.7 Administration

1.7.1 General Council—The General Council (GC) held its thirteenth meeting on 25 March 1958 in the Conference Hall of the ISI Headquarters building, under the chairmanship of Shri Morarji Desai, President of the ISI, who, after piloting the proceedings for about an hour, had to leave for

attending the Parliament, when Lala Shri Ram, Senior Vice President, took over the Chair.

Reviewing the activities of the Institution during the year 1957-58, the President remarked that there was much more to be done to make the industry and consumer conscious of the advantages of Certification Marks. He expressed the hope that the members, as well as private and public agencies, would strive their best to make producers and consumers of Indian goods, both within the country and abroad, standards conscious. While commending the 'sound leadership' of the ISI Directorate and its achievements, he exhorted the Institution 'not to rest on our oars, because the goals we have set for ourselves still lie ahead'.

The question of preparation of Indian Standards on general conditions of contracts for civil engineering works, which had been postponed *sine die* by the Council at its twelfth meeting, was discussed again. Since the last meeting, information had been collected from overseas countries, where the contractual form of agreement had been issued by the national standards organizations, in regard to the popularity of such forms and the extent to which contracting parties were following them. On the basis of the data collected, and after discussing the pros and cons of the issue, the Council decided to drop the subject.

The Council also considered the recommendation, made by the Certification Marks Advisory Committee in its second meeting held on 24 March 1958, for publicizing Certification Marks. The Committee had recommended (*see 2.8.1*) *inter alia* that the use of ISI Certification Marks should be made compulsory for industries which had enjoyed tariff protection for about five years. After a discussion, the Council referred the matter to the Division Councils for their consideration and recommendation.

1.7.2 Executive Committee—The Executive Committee (EC) held five meetings, dealt with general matters of administration and considered various questions referred to it.

The important decisions, taken by the EC during the year included the institution of the 'K. L. Moudgill Prize'; first recruitment of Probationers under the ISI Service Cadre; the amendment of ISI Contributory Provident Fund Rules and ISI Employees (Conduct) Rules; the publication of tables for conversion of non-metric to metric values in a handy form; the increase in the allowance of staff, and the contribution to the Contributory Provident Fund.

1.7.3 Finances—The total income of ISI (*see Fig. 1*) in 1957-58 from its normal sources, that is membership subscription from the Government of India, was Rs 1 881 469.57 against the anticipated budget figure of Rs 2 022 000.00. The expenditure actually incurred was Rs 1 882 846.02 against the budget of Rs 2 041 000.00.

The indirect contribution by Government and private organizations, by way of expenditure incurred by their members on travelling to attend meetings of the ISI, within India and abroad, is estimated to be nearly Rs 5 lakhs. Certified statements of audited accounts for the year under report are given in Appendix 4.3.

1.7.4 ISI Staff—During the year, 66 new members joined the ISI Staff, thereby raising its

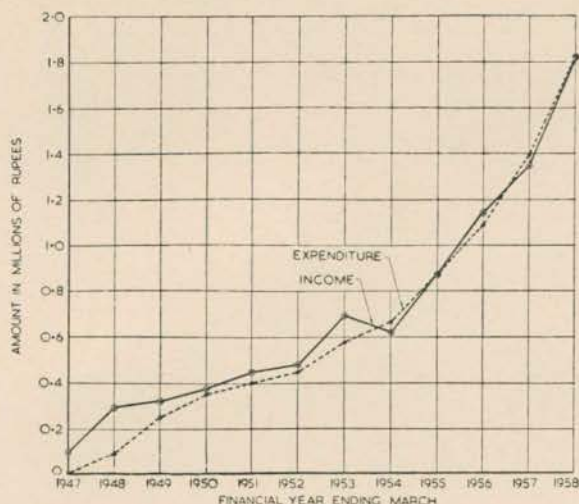


FIG. 1 GROWTH OF INCOME AND EXPENDITURE

total strength to 336. With a view to overcoming the shortage of trained technical personnel, the EC, during the preceding year, had created an ISI Cadre of Technical Services. Thirty two persons were recruited as probationers to the cadre on the basis of a written examination and interview by a special Selection Committee assisted by technical experts. The probationers are expected to take over their full responsibilities as members of ISI Staff after undergoing a two years intensive training programme. The Staff position as on 31 March 1958 is indicated in the following table :

STAFF POSITION ON 31 MARCH 1958

DESIGNATION	No. of Posts		
	Sanctioned	Filled	Vacant
Director	1	1	—
Joint Director	1	1	—
Deputy Director	6	5	1
Assistant Director	14	13	1
Secretary	1	1	—
Extra Assistant Director	36	25	11
Extra Assistant Director (Probationer)	33	29	4
Section Officer	10	10	—
Librarian	1	1	—
Technical Assistant (Drawing)	5	5	—
Clerical Staff	172	165	7
Others (Peons, etc)	83	80	3
TOTAL	363	336	27

1.8 Publications — With the publication of 160 new and revised standards (see Appendix 4.1), the total number of Indian Standards increased from 919 to 1079. This figure includes 30 revised standards and 8 which have since been withdrawn. Thus the total number of standards published and under print which were in force on 31 March 1958 was 1041.

1.8.1 Other Publications

a) *ISI Bulletin* — The circulation of ISI Bulletin, the journal of the Institution, devoted to standardization activity and movement in India and abroad, increased from 5 000 to 5 600 during the year. The Bulletin continued to grow in volume and coverage, thus proving more and more useful in publicizing

the activities of the Institution. It continued to publish, for the information of members and subscribers, new accessions to the ISI Library. The six issues, published during the year, contained 256 pages of 445 advertisements which yielded an income of Rs 30 500-00.

- b) *List of Indian Standards* — A classified list of Indian Standards published and under print as on 1 June 1957 was issued in the form of a 14-page pamphlet.
- c) *Addendum to ISI Handbook* — A 69-page Addendum to the ISI Handbook 1957 listing the Indian Standards printed since the publication of the Handbook, was issued to bring it up-to-date. The Addendum also contained an exhaustive alphabetical index, covering all the Indian Standards, ISO Recommendations and IEC publications listed in the ISI Handbook 1957, and in the Addendum.

1.9 Library — The Indian and overseas standards and other reference books, maintained in the ISI Library at the headquarters and also in the libraries of branch offices, were in considerable demand for reference by a large number of members. The number of standard specifications of various countries, catalogued and indexed in the ISI Library, reached the figure of 59 291 on 31 March 1958, while the total number of books was approximately 4 000. These figures do not include publications kept for reference at Bombay, Calcutta and Madras branch offices. Arrangement for translating standards from Dutch, French, German, Italian, Russian and Spanish languages formed a significant feature of the services rendered by the ISI Library. To meet various enquiries, the library also collected and supplied specific information relating to standardization in India and abroad. The following 15 journals were added during the year:

- 1) Abstract — Bulletin
- 2) Bulletin and Foundry Abstract of BCIRA
- 3) Higher Productivity
- 4) Indian Industries
- 5) Indian Plastics Review
- 6) Indian Textile Industry (Statistical Bull.)
- 7) Internorm Abstract Standardization
- 8) Iron, Steel and Hardware of India
- 9) Journal of Leather Technologists' Association of India
- 10) Light Metals
- 11) Metric Measures Journal
- 12) Philips Light Bulletin
- 13) Spokesman
- 14) Standardization (UK Ministry of Supply)
- 15) Steel and Construction

The Institution also received, through the Ministry of Works, Housing & Supply, 48 technical journals from the Technical Co-operation Mission of the USA.

1.10 Public Relations — Broadly speaking, public relations activities include the development and maintenance of close contacts with members of ISI; representatives of the technical, scientific and professional bodies and with the industrial and commercial houses, with a view to keeping them informed of the technical work of the ISI, to enroll

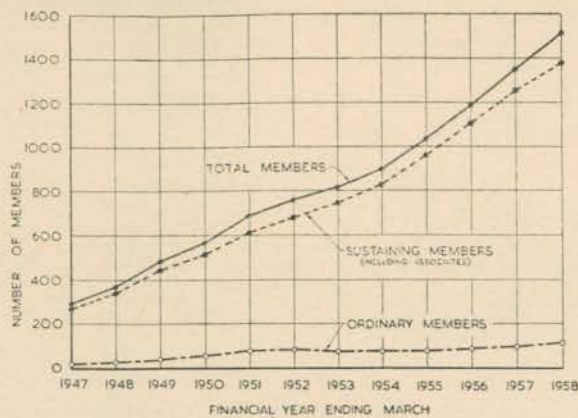


FIG. 2 GROWTH OF MEMBERSHIP

new members, and to foster continued association with the old members.

With regard to enrolment of new members (see Fig. 2), the subscribing membership of the Institution increased from the previous year's figure of 1 347 to 1 510. The detailed analysis of the categories of membership is given below:

MEMBERSHIP ANALYSIS (1957-58)

(As on 31 March 1958)

CLASS OF MEMBERSHIP	NUMBER OF MEMBERS ON		LOSSES DUE TO			ADDITIONS BY			NET GAIN
	1 April 1957	31 March 1958	Resignation	Lapsing	Total	Admission	Rein-statement	Total	
Sustaining Members	1 118	1 216	48	104	152	158	92	250	98
Sustaining Members (Associates)	133	183	13	18	31	66	15	81	50
Ordinary Members	96	111	5	9	14	24	5	29	15
TOTAL	1 347	1 510	66	131	197	248	112	360	163

The revenue obtained from subscribing members, during the year 1957, reached the figure of Rs 3.69 lakhs against the 1956 collection of Rs 3.36 lakhs. (For details see Appendix 4.2.)

1.10.1 Sale of Standards (see Fig. 3)

1.10.1.1 Indian standards — The sale proceeds of the ISI publications registered a significant rise because of the heavy demand for IS:786-1957 and IS:1020-1957, the two Indian Standards on conversion tables, published for the guidance of the industry, commerce and trade for changing over to the metric system. More than 62 000 copies of the former and 102 000 copies of the latter were sold — a record sale for any Indian Standard. The total sale proceeds amounted to Rs 443 839.06 as against last year's total of only Rs 82 004.00. The general demand for Indian Standards, it is experienced, is growing in India as also in overseas countries, particularly in UK, Germany and Pakistan.

1.10.1.2 Overseas standards — The sale proceeds of overseas publications, including British, American, Japanese, German, and others, amounted to Rs 90 854.80 as against the last year's total of Rs 86 773.00.

1.11 Publicity — To make the work of ISI better known, and also to propagate the standardization movement and advantages of Certification Marks,

the Institution set up, in March 1958, a Publicity Unit to handle, among other things, all matters pertaining to publicity work and Indian Standards Conventions. Hitherto, publicity work was being handled by the various Technical Divisions and Sections.

1.11.1 Publicity of the Certification Marks —

Now that the ISI Certification Marks have made some headway, and a number of products are carrying the ISI Certification Mark, it was considered opportune to extend the scope of certification marking. A comprehensive publicity campaign is being launched through newspaper advertisements, press articles, and audio-visual aids like cinema-slides, pamphlets, posters, stickers, etc. As a part of the publicity drive, and at the instance of the Ministry of Commerce & Industry, the Films Division of the Ministry of Information & Broadcasting is preparing a documentary film, entitled 'Standards for Industry', which, while tracing the origin, development and growth of the Indian Standards Institution, would bring out the advantages of Certification Marks.

A part of the museum, presently in the formative stages in the new ISI Headquarters building, has

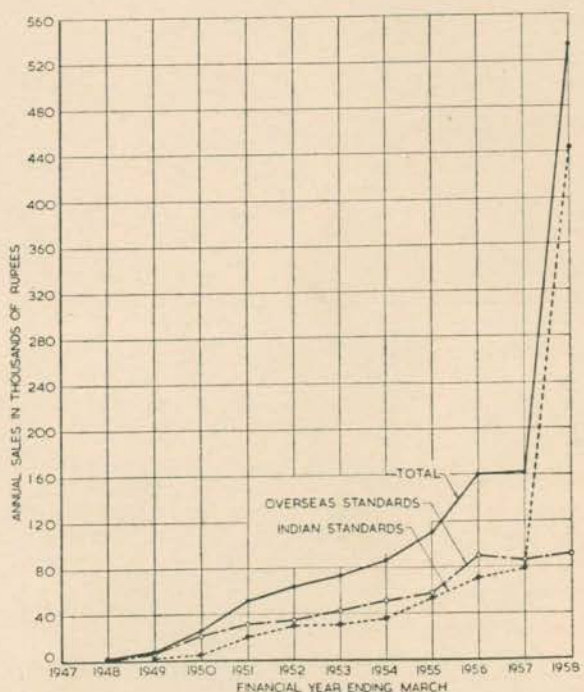


FIG. 3 GROWTH OF SALE OF INDIAN AND OVERSEAS STANDARDS

been reserved for exhibiting samples of products carrying ISI Certification Marks. Similar arrangements are being made in the ISI Branch Offices at Bombay, Calcutta and Madras.

1.11.2 Exhibitions — In order to propagate the cause of standardization and to create more widespread consciousness among the common men on the role of standards in the progressive development of the textile industry, the Institution participated in the Textile Industries Fair held at Bombay in December 1957 - January 1958.

The Madras office exhibited Indian Standards relating to the leather industry at the Leather Exhibition, organized in June 1957, at the time of the visit of the Working Party of the Economic Commission for Asia and the Far East (ECAFE) on Small Industries. The Branch Office also participated in the Leather Fair organized during the symposium on leather accessories under the auspices of the Central Leather Research Institute from 16 to 29 March 1958.

A few Indian Standards, along with other publicity literature, were also displayed in the 'Plan Publicity Week Exhibition', organized by the Directorate of Public Relations, Punjab, at Ambala in November 1957.

1.11.3 Radio Broadcasts — To create a general realization and appreciation of the role of standards

in the national economy and development, the following four talks by the officers of ISI were arranged and broadcast from the New Delhi Station of the All India Radio, in the months of November and December 1957:

Date of Broadcast	Title of Talk	Speaker
19 November 1957	Function of Standards	Dr. A. N. Ghosh
3 December 1957	Standardization in Industries	Shri C. S. Chandra-sekhara
17 December 1957	Standardization in Agriculture	Shri C. N. Modawal
31 December 1957	Certification Marks Scheme	Dr. D. V. Karmarkar

At the time of the third Indian Standards Convention, held in Madras in December 1957, Dr. Lal C. Verman, Director, ISI, gave a radio broadcast from the Madras Station of AIR on 22 December 1957.

1.11.4 Articles and Other Contributions — A list of articles and papers contributed by the ISI staff to various journals is given in the following Table:

ARTICLES CONTRIBUTED

Sl. No.	TITLE	AUTHOR	CONTRIBUTED TO	DATE
1.	Decimal Coinage, Metric System and the ISI	Dr. Lal C. Verman	Supplements of Indian Newspapers on India's Changeover to Metric System	1 April 1957
2.	Standardization in India	Shri S. K. Sen	Indian Engineering Exporter	May 1957
3.	Kamala Seed for Briquetting of Charcoal, Coal Dust and Wastes	Dr. Sadgopal	Paintindia	June 1957
4.	Standardization of Textile & the Technologist	Shri Maharaj Kishen	Textile Conference, Bombay	9 June 1957
5.	Standardization and Small Scale Industries	Shri T. V. Joseph	Industrial India	June 1957
6.	Latest Trends in Screw Threads and India's Position	Shri A. B. Rao	Meeting of Institution of Engineers	3 July 1957
7.	India for Metric System	Dr. Lal C. Verman	March of India	August 1957
8.	Indian Standards and ISI Certification Marks	Shri Jainath Kaul	Bombay Market	August 1957
9.	National Standards for Indian Industry	Shri Jainath Kaul	Indian Export Trade Journal	August 1957
10.	Statistics in the Working of ISI	Dr. A. K. Gupta	Meeting of Final Year Students of Indian Statistical Institute, Calcutta	12 August 1957
11.	ISI Certification Marks	Shri B. L. Bhatia	Industrial India	August 1957
12.	Standardization in Relation to Productivity	Shri S. K. Sen	Seminar on Productivity held in New Delhi	1-2 Nov 1957
13.	Standards — A Tool for Higher Productivity	Shri S. K. Sen	Meeting of Institution of Production Engineers (London), held in Calcutta	7 November 1957
14.	Standards and SQC in India	Dr. Lal C. Verman	Reunion Meeting of the UN Trainees in SQC (Delhi Centre) on the occasion of Prof. Ellis R. Ott's visit to India	23 Nov 1957
15.	SQC Techniques in Indian Standards	Dr. A. K. Gupta	do	do
16.	"Manakikaran Aur Udyog Dhande" (Hindi)	Shri G. P. Srivastava	Yojana (Hindi)	November 1957
17.	ISI and Indian Standards	Shri G. L. Gulati	Souvenir of the Small Industries Association, Madras	do

ARTICLES CONTRIBUTED — *Contd*

Sl. No.	TITLE	AUTHOR	CONTRIBUTED TO	DATE
18.	Development de L' Industrie Des Huiles Essentielles en Inde au Pakistan (French)	Dr. Sadgopal	Perfumerie et de la Cosmetique	November 1957
19.	'Hamare Naye Bant (Hindi)'	Shri G. P. Srivastava	Yojana (Hindi)	January 1958
20.	Review of 'Die Atherischen Ole' (Vol I & IV) by E. Gildeweister and Fr. Hoffmann (German)	Dr. Sadgopal	Chemical Age	Oct-Dec 1957
21.	Uniformity and Accuracy Through Standardization	Shri B. L. Bhatia	Textile Industries	7 December 1957-6 January 1958
22.	Review of 'Die Atherischen Ole' (Vol I & IV) by E. Gildeweister and Fr. Hoffmann (German)	Dr. Sadgopal	Indian Soap Journal	January 1958
23.	Shape of Weights to Come	Shri M. V. Patankar	Metric Measures	January 1958
24.	Measure for Measure	Shri M. V. Patankar	Metric Measures	March 1958

1.11.5 Press Notes — While the ISI Bulletin and other publications of the Institution kept its members and other interested persons informed of the technical work relating to Indian Standards in particular and standardization movement in general, a number of press notes, announcing the issue of draft Indian Standards, published Indian Standards and other important events, were also released. The ISI Convention, convened by the Institution in 1957 at Madras, also succeeded, to a considerable extent, in creating an awakening in the minds of the industrialists and the general public. Many English and language papers of Madras, at the time of the Convention, brought out supplements, carrying special articles on the activities and the role of the ISI. The press releases, issued through the Press Information Bureau, on the work of the Convention, were invariably included in full and featured well by all the national dailies.

Statistically speaking, 286 Press Notes, issued during the year, may be grouped as below:

- Draft Standards: 116
- Published Standards: 121
- Certification Marks: 49

2. DIVISIONS AND SECTIONS

2.0 Introduction — The activities of the different Divisions and Sections with notable features of the several projects are briefly described in this part of the Report.

2.0.1 In all 198 proposals were received for formulating new Indian Standards during the year, and the number of proposals accepted and referred to various committees for further action totalled 202 which included proposals made in the previous year, but which had not reached the stage of acceptance during that year.

2.0.2 The progressive growth of the activities of the ISI as reflected by the creation of new committees, increase in committee membership and the number of meetings held, is illustrated in a convenient manner in Fig. 4. Similarly Fig. 5 indicates the progress actually made in terms of Indian Standards published and draft Indian Standards circulated.

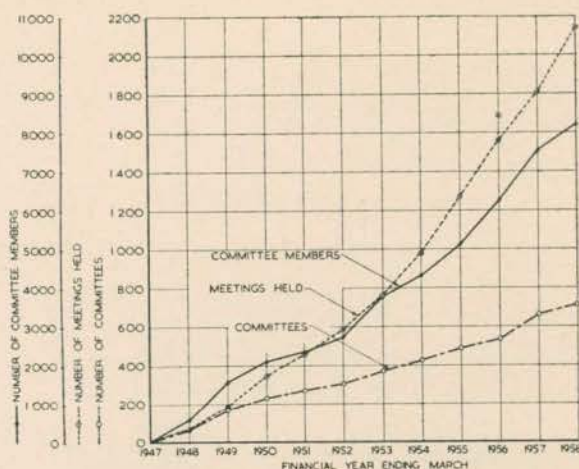


FIG. 4 GROWTH OF ACTIVITIES OF COMMITTEES

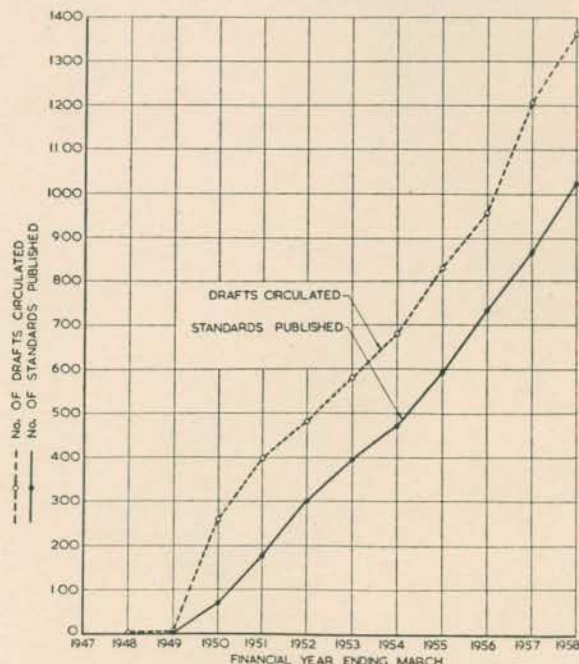


FIG. 5 GROWTH OF STANDARDS

2.0.3 Table I gives the information about number of committees, subcommittees and panels; number of meetings held; new standards published

TABLE I RECORD OF WORK OF ISI TECHNICAL DIVISIONS FOR THE YEAR 1957-58

DIVISION	NO. OF COMMITTEES, SUBCOMMITTEES AND PANELS	NO. OF MEETINGS OF SECTIONAL COMMITTEES, SUBCOMMITTEES AND PANELS	NEW STANDARDS PUBLISHED AND UNDER PRINT	AMENDMENTS TO STANDARDS	DRAFT STANDARDS CIRCULATED
Engineering	104	30	17	—	20
Building	125	62	28	—	32
Textile	121	59	29	5	20
Chemical	180	94	34	7	46
Agricultural and Food	48	27	16	9	6
Structural and Metals	70	32	19	1	17
Electrotechnical	58	34	16	2	11
Executive Committee	2	4	1	—	1
TOTAL	708	342	160	24	153

and under print; amendments to standards; and draft standards circulated during the year under review in respect of each Division/Section.

2.1 Engineering Division — Among the activities of this Division, a very high priority was given, at the instance of the Standing Metric Committee of the Government of India, to the formulation of Indian Standards for weights and measures and weighing instruments required in connection with the implementation of Weights and Measures Act, 1956. Efforts were also intensified to meet the increasing demand for engineering standards. The basis for the formulation of a national standard for screw threads, 6 mm and above, continued to be under discussion. At the ISO level, agreement on a unitary world standard for this range had not been found possible, and it was decided to recognize two parallel series, one for inch and the other for metric threads.

2.1.1 The Engineering Division Council did not hold any meeting. However, the Standing Working Committee of the Division (SWCE) held its 14th meeting on 18 February 1958, and organized the existing Machine Tools and Small Tools Sectional Committee, and the Internal Combustion Engines and Automotive Vehicles Sectional Committee. Further, two new committees were formed for dealing with transmission devices and engineering metrology.

2.1.2 A brief survey of the progress of work on different projects under the Division during the year is given below:

- i) *General Engineering Standards* — For providing guidance to industry and trade in the changeover from the existing units to the metric system, an Indian Standard Method For Precise Conversion of Inch and Metric Dimensions to Ensure Interchangeability (IS: 1105-1957) was published. The standard, which recommends simplified set of rules for the precise conversion of dimensions on engineering drawings from inches to millimetres and *vice-versa*, is intended to serve as a guide to engineers, designers, draughtsmen and shop-workers.
- ii) *Oil Burning Domestic Appliances* — Draft standards for hurricane lanterns, oil

pressure lamps and oil pressure stoves, which had already been circulated for comments, were examined for finalization. In regard to the oil pressure lamps and oil pressure stoves, the system of screw threads to be adopted for the threaded components and the question of season cracking of parts subject to pressure in operation were under examination.

Publication

IS: 1116-1957 Glass Globes for Hurricane Lanterns

Work in Hand

Hurricane Lanterns
Lantern Type Oil Pressure Lamps
Pressure Stoves
Chimneys for Oil Pressure Lamps
Gas Mantles
Blow Lamps
Hanging Type Pressure Lamps

- iii) *Machine Tools* — Comments received on the draft Indian Standard for Limits and Fits for Engineering were examined and a revised draft of the standard was under preparation, taking into account the work done by ISO/TC 3 — Limits and Fits.

Some spade work was also done with respect to test charts for lathes; and information on drilling machines, planing machines, shaping machines, etc, was also collected. The work has aroused considerable interest in regard to the quality of machine tools. Proposals for machine tool elements, and for certain other general aspects of machine tools, such as preferred speeds and feeds, were also under consideration.

Work in Hand

Test Charts for Lathes Up to 400 mm Swing Over Head
Test Charts for Lathes Over 400 mm Swing Over Head
Radial Drilling Machines
Pillar Type Drilling Machines
Planing Machines
Shaping Machines
Knee Type Horizontal and Universal Milling Machines
Limits and Fits for Engineering
Safety Code for Machine Tools

- iv) *Hand Tools* — On the recommendation of the Tariff Commission, priority was given to the formulation of an Indian Standard

for engineers' steel files and rasps of different types, which are enjoying tariff protection. A preliminary draft proposal, drawn up entirely on the metric basis, was under consideration.

Publications

- IS : 621-1957 Forks for Plantations and Estates
- IS : 704-1957 Crow Bars and Claw Bars
- IS : 841-1957 Hand Hammers

Work in Hand

- Revision of IS : 273-1951 Picks and Beaters
- Revision of IS : 274-1951 Shovels
- Swage Blocks and Stand
- Powrahs
- Screw Drivers
- Chaff Cutter Blades
- Engineers' Files and Rasps
- Vices
- Pliers
- Sickles
- Transplanting Spades
- Brace Smith
- Shears
- Holing Spades
- Post Hole Diggers

- v) *Abrasives* — Draft standards for abrasives specialities; recommendations for the selection of grinding wheels, and glue-bond coated abrasives were finalized for publication.

Work in Hand

- Coated Abrasives (Glue Bond)
- Abrasive Specialities
- Recommendations for Selection of Grinding Wheels
- Preferred Shapes and Sizes of Grinding Wheels and Segments
- Safety Code for Grinding Wheels
- Selection and Use of Coated Abrasives
- Emery Fillets

- vi) *Internal Combustion Engines* — The draft standard for piston rings, which had already been circulated, could not be finalized, as certain difficulties were experienced in rationalizing the sizes of rings, both in the metric and inch series. For the same reason, work on other connected components, such as pistons, piston pins, cylinder sleeves, etc, could not progress.

Four draft test codes for the testing of IC engines of different types were being re-examined before circulation in the light of comments received from the members. To deal with components and accessories (excluding the engine) of automotive vehicles a new Sectional Committee was formed.

Publication

- IS : 810-1957 Inlet and Exhaust Valves for IC Engines

Work in Hand

- Piston Rings
- Single Cylinder Fuel Injection Pumps
- Aluminium Alloy Pistons
- Cast Iron Pistons
- Code for Rating Test of Constant Speed IC Engines
- Code for Type Testing of Constant Speed IC Engines
- Code of Rating Test of Variable Speed IC Engines
- Code of Type Testing of Variable Speed IC Engines

- vii) *Gas Cylinders* — The Sectional Committee for Gas Cylinders has all along been acting as an advisory body to the Chief Inspector of Explosives, who is its Chairman. Because of the industrial expansion, prospects for the manufacture of gas cylinders are quite encouraging. It is

expected that the Committee would now devote attention to the formulation of national standards for gas cylinders and their fittings.

- viii) *Drawings* — As a result of the decision to change over to the metric system, it had become necessary to revise the Code of Practice for General Engineering Drawings (IS : 696-1955). In the light of suggestions received from members, a preliminary draft was prepared incorporating the latest drawing office practices, as reflected in other national standards. The preliminary draft was examined and the modified draft revision of the draft was under preparation.

Work in Hand

- Revision of IS : 696-1955 Code of Practice for General Engineering Drawings

- ix) *Bicycles* — Draft standards for bicycle bottom bracket components; cotter pins, washers and nuts; cranks and chain-wheels; freewheels; steering head assembly components; front forks; and rim tapes and buckles, having been circulated, were re-examined and finalized for publication.

Standards for bicycle components are intended not only to cover the production of large-scale manufacturers, but also to provide guidance to a large number of small-scale units. The standards are, therefore, being drawn up somewhat elaborately, and it has been decided to continue this practice till such time as the Development Commissioner for Small-Scale Industries is fully equipped to provide detailed assistance to the small-scale producers.

The question of minimum thickness of nickel plating for bicycle components, particularly rims, assumed a great importance, on account of the world-wide shortage of nickel and because of the need to conserve foreign exchange.

Considering the climatic and other conditions prevalent in the country, and because of the need for rational approach to the problems, information was being collected on the practices being followed by a number of foreign countries.

Work in Hand

- Bottom Bracket Axle
- Bottom Bracket, Adjustable Cup
- Bottom Bracket, Fixed Cup
- Bottom Bracket, Locking Nut
- Cotter Pins, Washers and Nuts
- Cranks and Chain Wheels
- Freewheels
- Steering Head Assembly Components
- Rim Tapes and Buckles
- Front Forks
- Tyres
- Tubes
- Glossary of Terms Used in the Bicycle Industry
- Revision of:
 - IS : 532-1954 Bicycle Tube Valves
 - IS : 623-1955 Bicycle Frames
 - IS : 624-1955 Bicycle Rims
 - IS : 626-1955 Bicycle Seat Pillars
 - IS : 627-1955 Bicycle Chains
 - IS : 628-1955 Bicycle Pedal Assembly
 - IS : 629-1955 Bicycle Hub Assemblies
 - IS : 630-1955 Bicycle Spokes (Plain) and Nipples for Spokes

- x) *Screw Threads* — The ISO, having failed at the international level in formulating a unitary world standard for screw threads, decided to recognize two separate series of screw threads, one on the inch basis and the other on the metric basis. In the context of the ISO work, the basis to be adopted for national standards for screw threads for general and constructional purposes was under consideration of the Screw Threads Sectional Committee.

Work in Hand

Revision of IS : 886-1957 Dimensions for Screw Threads (Below 6 mm)
Dimensions of Screw Threads Above 6 mm
Spanners

- xi) *Sports Goods* — Draft revisions of tentative standards for shuttlecocks, for cricket and hockey balls, and for footballs, volleyballs, basket-balls and water polo balls were approved for circulation. In the formulation of standards for gymnastic equipment, the main difficulty has been the non-availability of suitable timbers. Arrangements were, therefore, made with the Central Wood Working Institute, Bareilly, for the fabrication of a few items of gymnastic equipment from certain selected species of indigenous timber. The equipment, when ready, would be subjected to practical test at the Forest Research Institute, Dehra Dun.

Publications

IS : 830-1957 Tennis Racket Frames
IS : 831-1957 Badminton Racket Frames

Work in Hand

Revision of IS : 415-1953 Shuttlecocks
Revision of IS : 416-1953 Cricket and Hockey Balls
Revision of IS : 417-1953 Footballs, Volley-Balls, Basket-Balls and Water Polo Balls
Squash Racket Frames
Football Bladders
Leg-Guards for Cricket Batsmen, Wicket-Keepers and Hockey Goal-Keepers
Wicket Keeping Gauntlets
Batting Gloves

xii) *Cutlery*

Publications

IS : 990-1957 Spoons, Stainless Steel
IS : 991-1957 Spoons, Brass and Nickel Silver

Work in Hand

Steel Pen Knives
Butcher Knives
Bread Knives, Table — Serrated Edge
Carving Knives, Fibre Handle
Cooks' Knives

- xiii) *Engineering Hardware* — Two draft standards for steel wire ropes were circulated for comments.

Work in Hand

Steel Wire for Wire Ropes
Steel Wire Ropes for Winding Purposes in Mines
Steel Wire Ropes for Haulage Purposes in Mines
Fibre Cores for Steel Wire Ropes

- xiv) *Pencils* — A draft standard for black lead pencils, covering the requirements of draughtsmen, carpenters, stenographers and the needs of general writing, was circulated. Preliminary draft standards for leads for propeller pencils and for copying pencils were under preparation.

Work in Hand

Black Lead Pencils
Lead for Propeller Pencils
Copying Pencils

- xv) *Sewing Machines* — Four draft standards for sewing machine components (bobbins, needle bars, pressure foot, and pressure bars) and a draft standard covering general requirements for sewing machines (household model) were circulated.

Work in Hand

General Requirements for Sewing Machines (Household Model)
Bobbins
Needle Bars
Pressure Bars
Roller for Oscillating Rock Shaft
Needle
Glossary of Sewing Machine Parts

xvi) *Pumps*

Work in Hand

Vertical Turbine Pumps for Clear, Cold, Fresh Water
Horizontal Spindle Pumps for Clear, Cold, Fresh Water

- xvii) *Instruments (Drawing, Optical, Surveying and Mathematical)* — Five draft standards relating to engineers' pattern drawing boards, tee-squares, slide rules (linear type), glossary of terms used in optical instruments industry, and general requirements for optical components were circulated.

Work in Hand

Engineers' Pattern Drawing Boards
Engineers' Pattern Tee-Squares
Slide Rules (Linear Type)
Glossary of Terms Used in Optical Instruments Industry
General Requirements for Optical Components
Optical Glass
Surveyors' Compass
Prismatic Compass
Through and Tubular Compass
Bubbles
Levelling Staves
Surveying Chains
Metric Scales for Use in Schools, Colleges and Other Training Establishments

- xviii) *Cargo Marking* — The draft standard recommendation for pictorial marking of handling instructions for non-dangerous goods was being finalized in the light of comments received. In this connection an investigation was being organized, at certain selected centres, for deciding the most appropriate symbol for ' fragility '.

Work in Hand

Recommendation for Pictorial Marking of Handling Instructions for Non dangerous Goods

- xix) *Automotive Vehicles* — A separate Sectional Committee, to deal with the components and accessories of automotive vehicles (excluding engines), was organized; and it is hoped that the work would be intensified on automobile components and accessories.

Publication

IS : 1132-1957 General Requirements for Leaf Springs for Automobile Suspension

Work in Hand

Oil Seals
Helical Springs for Automobile Suspension

- xx) *Ball and Roller Bearings* — A preliminary draft proposal for ball and roller bearings

for general engineering application was prepared. Considering the wide variations in climate in India, the importance of the problem of ageing, in the case of precision and semi-precision bearings, is obvious, and suitable tolerances have to be provided for. However, for the present the problem is being kept under study, since the use of precision bearings is not as yet widespread in India. On the question of noise in bearings, investigations were being organized at the National Physical Laboratory of India.

It has also been decided to prepare a guide for proper selection and fitting of bearings for different applications.

Work in Hand

Glossary of Terms Relating to Ball and Roller Bearings
 Identification Code for Ball and Roller Bearings
 Materials for Bearing Components and Test for the Same
 Dimensions of Bearings, Including Tolerances
 Methods of Test for Complete Bearings

xxi) *Boilers* — Certain points regarding the relative responsibility of the ISI and the Central Boilers Board in the matter of formulation of standards for boilers and their accessories were under discussion between the two organizations. The Institution also made some suggestions in regard to the amending of the Indian Boilers' Act to make it more comprehensive.

xxii) *Weights and Measures* — Draft standards for commercial metric length measures (non-flexible), metric woven metallic tape measures, metric steel tape measures, and carat weights were finalized for publication.

Work in Hand

Commercial Carat Weights
 Commercial Length Measures (Non-flexible)
 Metric Woven Metallic Tape Measures
 Beam Scales
 Counter Machines
 Spring Balances
 Steel Yards
 Platform Weighing Machines
 Weigh Bridges
 Person Weighing Machines
 Dormant Weighing Machines
 Automatic Weighing Machines
 Crane Weighing Machines
 Methods for Testing Accuracy of Commercial Measuring Instruments Used in Petroleum Trade

xxiii) *Pulleys and Belts* — Belting, which had been the joint responsibility of the Chemical, Textile, and Engineering Divisions, was made the sole responsibility of the Engineering Division. Draft revisions of standards for cotton and hair belting and drafts for friction surface rubber transmission belting, cast iron and mild steel pulleys, and belt fasteners, which had already been circulated, were awaiting re-examination for finalization by the committee.

Work in Hand

Revision of IS: 529-1954 Solid-Woven Impregnated Cotton Belting for Power Transmission
 Revision of IS: 530-1954 Solid-Woven Impregnated Hair Belting for Power Transmission
 Friction Surface Rubber Transmission Belting
 Cast Iron and Mild Steel Flat Pulleys
 Belt Fasteners

Vegetable Tanned Leather Belting
 Leather Belting for Small Machines
 Rubber and Canvas Conveyor and Elevator Beltings

xxiv) *Small Tools* — To intensify the work on small tools, a separate committee was set up towards the close of the last year for formulating standards for small tools, which, till now, were being dealt along with machine tools.

2.2 Building Division — The Building Division covered a number of important phases of standardization relating to building industry, such as introduction of metric system in the building industry; modular co-ordination and its application to building design, materials and components; and the codification of practices followed in installation services, such as water supply, drainage, electricity, lifts, etc.

Several standard specifications for building materials were prepared in the metric system, preferring whole metric dimensions and specifying near inch-pound equivalents only where necessary. A comprehensive code on the measurements of building works, which is entirely in metric units, was also completed. The code has found a wide general acceptance, and it is expected it would lead almost immediately to the use of the metric system in the preparation of project estimates and in the calling of tenders in the metric units. Simultaneously, the Division prepared a standard on equivalent metric units for scales, dimensions, and quantities which is expected to provide the basis for the adoption of metric units in different sections of the industry. The draft standard on architectural and building drawing practices, which has adopted metric scales, in the same way, would lead to the preparation of designs of buildings in the metric system. The adoption of a metric module, namely the 10 cm, has also resulted in the use of metric scales in the preparation of constructional drawings and in the manufacture of building materials and components.

The work on modular co-ordination made further progress; the finalized standard on modular co-ordination and published specification for bricks, stones, metal windows, and timber windows all incorporate modular dimensions.

2.2.1 Among the new items, taken up for work, may be mentioned the code of colours for building and decorative finishes; laying of cement flooring tiles; sawing of timber; finishing of wood and wood compositions; steel welded fabric for reinforcement; codes for accoustical design of cinemas, theatres, conference rooms and auditoriums; daylighting in schools and factories; method of measurement of sound insulation; industrial screens; interior illumination of buildings; and street lighting.

The Building Division Council, which held its sixth meeting on 25 March 1958, approved of the setting up of a joint subcommittee to deal with the specifications pertaining to steel and other reinforcement used in concrete including prestressed concrete.

2.2.2 A brief description of the work in different fields is as follows:

i) *Cement and Concrete* — The revision of IS: 269-1951 Specification for Ordinary, Rapid-Hardening and Low Heat Portland Cement was completed. The research and investigation, undertaken in this

connection, revealed that the uniformly high quality of cement produced in this country made it possible to keep the same strength requirements as in the previous specification, even after substituting the Leighton Buzzard Sand by the Indian Standard Sand, known to give slightly lower strength values. The substitution of Indian Standard Sand in place of Leighton Buzzard Sand also brought to a close an investigation, which was started as early as 1942, to find a suitable Indian sand for the testing of cement in the country. Regarding reinforcement for concrete, the work on specification for steel for prestressing purposes was taken up, specification for mild steel deformed bars was finalized, and the work on steel welded fabrics for concrete reinforcement, and on a second grade of mild steel bars for reinforcement to cover the so-called 'untested steel' was initiated.

Work in Hand

Revision of IS: 269-1951 Ordinary, Rapid-Hardening and Low Heat Portland Cement
 Method of Test for Determination of Free Lime in Portland Cement
 Method of Test for Strength of Concrete
 Method of Sampling and Analysis of Concrete
 Natural and Manufactured Aggregates for Use in Mass Concrete
 Asbestos Cement Building Pipes and Fittings (Spigot and Socket Pipe)
 Asbestos Cement Pressure Pipes
 Reinforced Concrete Street Lighting Columns
 Portland Pozzolana Cement
 Mild Steel Deformed Bars for Concrete Reinforcement
 High Tensile Steel Wire for Prestressed Concrete
 Mild Steel and High Tensile Bars for Prestressed Concrete
 Steel Welded Fabric for Concrete Reinforcement
 Code of Practice for Prestressed Concrete
 Code of Practice for Laying of Concrete Pipes

- ii) *Lime and Gypsum* — Efforts were made to persuade the lime industry to adopt Indian Standard Specification for Building Limes. These efforts met with a large measure of success evidenced by the active participation of the lime industry in the symposium jointly organized by the ISI and the National Buildings Organization, NBO, in February this year. Work on the drafting of codes, covering the manufacture and use of building lime, was also initiated.

Work in Hand

Code of Practice for Burning and Slaking of Lime
 Code of Practice for Use of Building Lime
 Gypsum Wall Boards
 Gypsum Hollow Blocks
 Gypsum Plaster for Finishing Purposes

- iii) *Pozzolanas* — Successful attempts were made in working out methods of tests for pozzolanic materials as a preliminary to the classification of pozzolanic material found in the country. A specification for *surkhi*, which is a pozzolana, was got ready for circulation.

Work in Hand

Methods of Test for Pozzolanic Materials
 Surkhi for Use in Mortar and Concrete

- iv) *Building Bricks and Stones* — Important basic investigations were conducted on the classification and availability of natural building stones in the country, specially

in regard to their suitability for different types of constructions. Basing the dimensional requirements upon a module of 10 cm, a specification for common burnt clay building bricks and two specifications for building stones were issued. Common tests for building stones were covered by a series of specifications dealing with methods of tests.

Publications

IS: 1077-1957 Common Burnt Clay Building Bricks
 IS: 1121-1957 Methods for Determination of Compressive, Transverse and Shear Strengths of Natural Building Stones
 IS: 1122-1957 Methods for Determination of Specific Gravity and Porosity of Natural Building Stones
 IS: 1123-1957 Method for Petrographical Examination of Natural Building Stones
 IS: 1124-1957 Method of Test for Water Absorption of Natural Building Stones
 IS: 1125-1957 Method of Test for Weathering of Natural Building Stones
 IS: 1126-1957 Method of Test for Durability of Natural Building Stones
 IS: 1127-1957 Dimensions and Workmanship of Natural Building Stones
 IS: 1128-1957 Lime Stone Slabs

Work in Hand

Dressing of Natural Building Stones
 Classification and Distribution of Natural Building Stones
 Methods for Determination of Resistance to Wear by Abrasion of Natural Building Stones

- v) *Timber* — Standards covering general aspects, such as abbreviated symbols for various timber species; glossary of terms relating to timber, plywood and joinery were finalized. The code of practice for seasoning of timber, which is under print, completes the work undertaken by the Institution relating to extracted timber.

Publication

IS: 1141-1957 Code of Practice for Seasoning of Timber

Work in Hand

Glossary of Terms Applicable to Timber, Plywood and Joinery
 Timber for Aircraft Purposes
 Cut Sizes of Timber and Their Grading
 Non-coniferous Sawn Timber for Further Conversion
 Methods of Testing Timber,
 Logs for Matches

- vi) *Wood Products* — Investigations in regard to the design of packing cases to test their durability and ability to withstand transport hazards were completed, resulting in a preliminary specification for packing cases which was approved for circulation.

Publications

IS: 709-1957 Medium Strength Aircraft Plywood
 IS: 710-1957 Marine Plywood
 IS: 848-1957 Synthetic Resin Adhesives for Plywood (Phenolic and Aminoplastic)
 IS: 849-1957 Cold Setting Casein Glue for Wood
 IS: 850-1957 Natural Sour (Lactic) Casein for Glue Manufacture
 IS: 851-1957 Synthetic Resin Adhesives for Construction Work in Wood
 IS: 852-1957 Animal Glue

Work in Hand

Veneered Decorative Plywood
 Revision of IS: 303-1951 Commercial (Common) and Moisture-Proof Plywood
 Block Boards
 Wooden Separators for Storage Batteries of Stationary Type
 Extenders for Use in Synthetic Resin Adhesives for Plywood
 Packing Cases Made from Solid Wood

vii) *Tar and Bitumen* — The main work done in this field was the finalization of the methods of tests for tar and bitumen. These standards, which include all the tests currently used in the case of tar and bitumen, are expected to prove of value to laboratories in equipping them with standard testing equipment and in conducting tests according to uniform procedure. In view of the changes that would result in the requirements of some of the tar and bitumen products, a complete revision of standards of these products has been initiated; such revisions will also take note of new grades of tar and bitumen which have come into use since the establishment of oil refineries in the country.

Work in Hand

Method for Sampling
 Determination of:
 Specific Gravity
 Penetration
 Residue of Specified Penetration
 Softening Point
 Viscosity
 Equiviscous Temperature
 Ductility
 Flash Point and Fire Point
 Water Content
 Loss on Heating
 Matter Insoluble in Benzene
 Matter Insoluble in Toluene
 Solubility in Carbondisulphide
 Mineral Matter (Ash)
 Phenols
 Naphthalene
 Volatile Matter Content
 Float Test
 Distillation Test

viii) *Builder's Hardware* — The work relating to builder's hardware was initiated not only on types which satisfy the minimum requirements for performance and strength but also on the types normally used in better quality buildings. Draft standards for dustbins; wire gauze; cold rolled mild steel butt hinges; and metal rain-water pipes, gutters, fittings and accessories were finalized for circulation.

Publications

IS: 866-1957 Tinmen's Rivets
 IS: 1120-1957 Mild Steel Square or Hexagon Head Coach Screws with Gimlet Points

Work in Hand

Wire Gauze, Mosquito-Proof
 Metal Rain-Water Pipes, Gutters, Fittings and Accessories
 Mild Steel Dustbins
 Cold Rolled Mild Steel Butt Hinges
 Buckles
 Buckles, Prongless, Nickel Plated

ix) *Floor and Roof Coverings* — An important item of investigation, which was successfully completed, was in regard to the test methods for roofing felts, taking into account Indian climatic conditions. The Committee, foreseeing the possibility of more extensive use of mastic asphalt for flooring purposes in factories and other locations, has initiated an experimental investigation on laying of mastic asphalt flooring in collaboration with manufacturers of mastic asphalts.

Publication

IS: 809-1957 Rubber Flooring Materials for General Purposes

Work in Hand

Mastic Asphalt for Flooring
 Ridge Tiles and Ceiling Tiles
 Clay Flooring Tiles
 Bituminous Felts for Waterproofing and Damp-proofing
 Code of Practice for:
 Laying and Maintenance of Linoleum Floors
 Laying of Mastic Asphalt Flooring
 Laying of Rubber Floors
 Waterproofing with Bitumen Felts
 Damp-proofing of Buildings

x) *Doors, Windows and Building Furniture* — In the two published standards on the subject, the sizes of doors and windows have been worked to a basic module of 10 cm, introducing thereby the principle of module co-ordination into the door and window industry. A specification for industrial windows, prescribing a simple range of industrial windows, was finalized.

Publications

IS: 1003-1957 Timber Panelled and Glazed Doors and Windows
 IS: 1038-1957 Steel Doors, Windows and Ventilators

Work in Hand

Industrial Windows
 Code of Practice for Fixing and Glazing of Steel Doors and Windows
 Timber Flush Doors Shutters
 Steel Shelving Racks
 Venetian Blinds

xi) *Terminology, Notations and Drawings* — The code of architectural and building drawing office practice, which is in metric system, was got ready for circulation; while the one on unit weights of materials, which is a reference document on the design of building and other structures, was completed.

Work in Hand

Code of Building Terminology
 Code of Architectural and Building Drawing Office Practice
 Schedule of Unit Weights of Building Materials

xii) *Modular Co-ordination* — The publication of the standards dealing with the general principles of modular co-ordination, modular doors and windows, and modular bricks and stones, have paved a way for a general approach to the problems of application of modular co-ordination in the building industry. Work was also initiated on codes dealing with application of modular co-ordination to structural steel, structural concrete and masonry work.

Publication

IS: 1233-1957 Recommendations for Modular Co-ordination of Dimensions in the Building Industry

xiii) *Functional Requirements of Buildings* — A series of standards, covering comprehensively all aspects of fire safety of buildings, was prepared for circulation. This is soon to be followed by structural safety codes dealing with foundations, substructures and superstructures.

Publication

IS: 875-1957 Code of Practice for Structural Safety of Buildings: Loading Standards

Work in Hand

Structural Safety of Buildings: Foundations and Superstructures

Code of Practice for:

Daylight (for Houses and Flats)

Orientation of Buildings

Ventilation of Dwellings

Sound Insulation, Houses, Flats and Schools

Code of Practice for Fire Safety of Buildings:

Chimneys, Flues, Flue Pipes and Hearths

Electrical Installations

Fire Fighting Equipment and Its Maintenance Including Construction and Installation of Fireproof Doors

General Principles and Fire Grading

Personal Hazards

Exposure Hazards

Materials and Details of Construction

- xiv) *Building Construction Practices* — In the field of general building construction, the publication and wide acceptance of the code on measurement of building works is expected to achieve the unification of procedure followed in the framing of project estimates, in the calling of tenders, and in the evaluation of building construction costs on a nationwide basis. This will also introduce metric measurements and metric units in the building industry.

Publication

IS:1200-1958 Method of Measurement of Building Works

Work in Hand

Code of Practice for Fixing Devices and Methods of Fixing in Walls and Ceilings

Code of Practice for Fixing Devices and Methods of Fixing in Cavity Constructions

Wood Stairs

- xv) *Building Finishes* — Two draft standards, one dealing with practice for finishing of iron and steel in buildings and the other for cement concrete flooring tiles, were circulated for comments; and a specification for sand suitable for plaster work was prepared.

Work in Hand

Code of Practice for:

Finishing of Iron and Steel in Buildings; Painting and Allied Finishes

Laying and Finishing of Cement Concrete Flooring Tiles

Applied Wall and Ceiling Finishes, Cement Plaster and Cement Lime Plaster

Cement Concrete Flooring Tiles

Sand for Plaster

Masons Tools for Master Work

- xvi) *Water Supply, Drainage and Sanitation* — One standard dealing with the basic requirements of water supply, drainage and sanitation was published and is expected to provide the basis for the design of buildings, in regard to services and equipment for different uses and occupations.

Publications

IS. 778-1957 Gunmetal Gate, Globe and Check Valves for Water, Steam and Oil Only (Not Intended for Petroleum Industry)

IS: 1172-1957 Code of Practice for Basic Requirements for Water Supply, Drainage and Sanitation

Work in Hand

Code of Practice for Water Supply and Plumbing

Code of Practice for Drainage in Buildings

White Glazed Earthenware Sanitary Appliances

Sand Cast Brass Screw Down Bib Taps and Stop Taps for Water Services

Water Meter Boxes

Glazed Earthenware Wall Tiles

- xvii) *Electrical Installation and Illumination* — Following closely the current practice, and at the same time eliminating several undesirable and harmful practices that had come into vogue due to the shortage of material, economy and other considerations, the code of practice for electrical wiring and fittings was finalized for printing.

Publication

IS: 732-1957 Code of Practice for Electric Wiring and Fittings in Buildings

- xviii) *Refrigeration and Air-Conditioning* — In this field, emphasis was laid on room air-conditioners, commercial refrigerators and water coolers. Basic work was also done in regard to outside design conditions for air-conditioning purposes.

Work in Hand

Standard Design Conditions for Air-Conditioning in Various Parts of India

Guide to the Use of Different Types of Insulating Materials

Commercial Refrigerators

Self-contained Water Coolers

Standard and Testing of Room Air-Conditioners

Domestic Refrigerators

- xix) *Building Regulation and Control* — The code on building bye-laws was finalized, bringing to a successful conclusion the work which was initiated three years ago. The code is intended for use by local bodies and is expected to provide basis for drafting their revised building bye-laws.

Work in Hand

Code of Building Byelaws

Model Zoning Regulations

Model Special Regulations for Central Areas of Cities

- xx) *Fluid Flow Measurement* — In this field, four standards, dealing with methods for measurement of water in open channels, were finalized in close co-ordination with the work of ISO/TC 30 SC 1. Investigations on calibrating indigenously manufactured current meters were handicapped for want of proper testing equipment. Efforts were, therefore, made to get the testing equipment installed at the National Physical Laboratory of India.

Work in Hand

Glossary of Terms Used in Measurement of Flow of Water in Open Channels

Measurement of Flow of Water in Open Channels by Velocity Area Methods

Measurement of Flow of Water in Open Channels Using Notches, Weirs and Flumes

Standard Forms for Recording Measurement of Flow of Water in Open Channel

- xxi) *Bridges* — A draft code on steel bridges was finalized for circulation, and the work was initiated on a code of practice for concrete and masonry bridges.

Work in Hand

Code of Practice for Steel Bridges

- xxii) *Soil Engineering* — The draft standard embodying the principles of classification of soils for general engineering purposes was got ready for circulation and for check up by various soil laboratories for testing efficacy of the proposed system of classification. The Institution also collaborated with the Central Board of

Irrigation & Power in its work relating to methods of testing soils.

Work in Hand

Classification of Soils for General Engineering Purposes
Soil Cement Blocks for General Building Construction

- xxiii) *Sieves* — An investigation of the manufacturing potential in regard to the sieves and also of the availability of raw materials revealed that sieves up to 100 meshes per inch could only be manufactured in the country, and that wire netting conforming to the ISI specifications could be made available for manufacture. The investigation also revealed that wire cloth for meshes was not manufactured in the country and so had to be imported; and that sieve frames for this range of sieves could be made in India.

Work in Hand

Standard Method of Sieving Powders
Industrial Screens

- xxiv) *Fire Fighting Equipment* — Twenty one standards for fire fighting equipment were finalized. The finalization of standards for water fittings, used in fire fighting equipment, fire extinguishers, ladders, etc., is expected to pave the way for the promotion of manufacture of these items in the country.

Work in Hand

Coupling, Double Male and Double Female Instantaneous Pattern for Fire Fighting Purposes
Fire Hose Delivery Couplings, Branch Pipe, Nozzles and Nozzle Spanner
Suction Hose Couplings for Fire Fighting Purposes
2-Way and 3-Way Suction Collecting Heads for Fire Fighting Purposes
Delivery Breechings, Dividing and Collecting Instantaneous Pattern for Fire Fighting Purposes
Branch with Revolving Head for Fire Fighting Purposes
Suction Strainers, Cylindrical and Shoe Types for Fire Fighting Purposes
Hydrant, Stand Post Type
Underground Hydrant, Sluice Valve Type
Combined Hydrant, Hydrant Cover Lift and Lower Valve Key
Washers for Water Fittings for Fire Fighting Purposes
Stirrup Pump for Fire Brigade Use
Portable Chemical Fire Extinguishers, Foam Type
Portable Chemical Fire Extinguishers, Carbon Tetrachloride Type
Portable Chemical Fire Extinguishers, Soda Acid Type
Fireman's Axe
Fire Hooks
Fire Bell
Fire Extinguishers, Water Type
Fire Extinguishers, CBM Type
Fire Extinguishers, Water (Bucket Pump Type)
Blower and Exhauster
360/550 LPM (or 80/120 GPM) Trailer Pump for Fire Brigade Use
1600/2300 LPM (or 350/500 GPM) Trailer Pump for Fire Brigade Use
550/1000 LPM (or 120/220 GPM) Trailer Pump for Fire Brigade Use
1600/2300 LPM (or 350/500 GPM) Motor Fire Engine
3200/4600 LPM (or 700/1000 GPM) Motor Fire Engine
Motor Fire Engine with 360/500 LPM (or 80/120 GPM) Portable Pump and 2300 Litre (or 500 Gallon) Water Tank
Mechanically Operated Turn-Table Ladder for Fire Brigade Use
Emergency Tender
Motor Fire Engine with 1600/2300 LPM (or 350/500 GPM) Pump and 4600 Litre (or 1000 Gallon) Water Tank
Hook Ladder
Extension Ladders
Wheeled Fire Escape
Snatch Block, Single Sheave for Fire Brigade Use

Screw Jacks, 5 Ton for Fire Brigade Use
Self-contained Breathing Apparatus for Fire Brigade Use
Electric Motor Sirens
Firemen's Helmets
Combined Foam and CO₂ Crash Tender
Foam Crash Tender, Large
Foam Crash Tender, Small
Rescue Tender
Dry Powder Crash Tender
Oxy-Acetylene Cutting Set Used in Fire Services
First Aid Box
Small Fire Engine
Control Post Van for Fire Brigade Use
Dividing and Collection Breeches
Crow's Foot Coupling
Quick Closing Clak Valve
Hose Binding Machine

The Building Standards Information Digest, the monthly bulletin started five years ago by the Building Division, continued to be issued to all the members of the BDC Committees and to others who had specifically showed their interest in it. The Digest, which summarizes information contained in various technical journals and in drafts and printed standards concerning the building industry, has proved useful in bringing out recent advances in science and technology connected with standardization in the building industry.

2.3 Textile Division — The Textile Division continued its efforts to formulate Indian Standards for various items of the textile industry. Some of the important standards, deserving a special mention, were those for textile stores, namely shuttles for hessian and sacking looms; twin wire healds for use in cotton and silk weaving (excluding jacquard and fancy weaving); maize starch for use in the cotton textile industry; leather picking bands for looms; and hawser-laid, shroud-laid and cable-laid manila ropes.

2.3.1 The Division could not hold any meeting of the Division Council or Standing Working Committee. No new subjects were, therefore, taken up for work during the year.

2.3.2 A brief account of the work accomplished during the year is given below:

- i) *Physical Methods of Tests* — The draft Indian Standard Glossary of Textile Terms, which was finalized last year, was in advanced stage of publication. Besides, a number of draft standards were approved for circulation for eliciting comments.

Work in Hand

Definitions of Textile Terms
Definitions of Terms Relating to Textile Machinery and Mills Accessories Used in:
Cotton Industry
Wool Industry
Jute Industry
Silk Industry
Definitions of Terms Relating to Types of Fabrics Made from:
Cotton
Wool
Jute
Silk
Definitions of Textile Terms Relating to Man-made Fibres
Definitions of Terms Relating to Various Types of Fabrics Made from Man-made Fibres or Filaments
Determination of:
Crimp in Wool in the Fleece
Clean Wool Yield of Raw Wool
Kemp Content of Raw Wool
Mean Fibre Length of Wool
Ends and Picks per Centimetre in Woven Woollen Fabrics

Weight per Square Metre and Weight per Linear Metre of Woollen Fabrics
 Length and Width of Jute Fabrics
 Porter and Shots per Inch of Jute Fabrics
 Weight per Square Metre (or Square Yard) and Weight per Linear Metre (of Linear Yard) of Jute Fabrics
 Count (or Melidity) of Warp and Weft Yarns in Grey Fabrics
 Tensile Strength of Cotton Fibre (Flat Bundle Method)
 Breaking Load (Strength) and Elongation of Single Threads of Cotton Yarn (by constant-rate-of-traverse machine)
 Fibre Immaturity Percentage by Polarizing Microscope
 Regularity and Evenness of Yarn
 Nappiness in Cotton

ii) Chemical Test Methods

Publications

IS: 199-1957 Methods for the Estimation of Moisture, Total Size or Finish, Ash and Fatty Matter in Grey and Finished Cotton Textile Materials
 IS: 686-1957 Methods for Determination of Colour Fastness of Textile Materials to Daylight
 IS: 1185-1957 Method for Determining the Relative Efficiency of Wetting Agents

Work in Hand

Revision of IS: 19-1949 Procedure for Testing Cotton Textile and Cordages (Other Than Jute) for Resistance to Attack by Micro-Organisms
 Revision of IS: 201-1950 Methods of Analysis of and Tolerance for Water for Textile Purposes
 Detection and Estimation of Damage in Cellulosic Textile Materials due to Micro-Organisms
 Determination of Colour Fastness of Textile Materials to Carbonizing with Aluminium Chloride
 Determination of Colour Fastness of Textile Materials to Alkaline Milling
 Determination of Colour Fastness of Textile Materials to Washing at the Boil
 Determination of Colour Fastness of Textile Materials to Decatizing
 Determination of Colour Fastness of Textile Materials to Bleaching with Sodium Chlorite, Mild
 Determination of Colour Fastness of Textile Materials to Bleaching with Sodium Chlorite, Severe
 Determining Shrinkage of Knitted Goods Containing Wool
 Determination of Shrinkage on Washing of Fabric Woven from Rayon and Synthetic Fibres not Liable to Felting
 Methods for Identification of Synthetic Resin Finishes on Cotton and Regenerated Cellulosic Fibres
 Determination of Strength of Anthraquinone Vat Blue RSN, Anthraquinone Vat Blue BC, Anthraquinone Vat Green B and Caledon Jade Green 2G
 Procedures for Testing Jute Fabrics for Resistance to Attack by Micro-Organisms
 Quantitative Estimation of Fibres and Their Mixtures
 Determination of pH Value of Aqueous Extract of Cotton Textile Materials
 Detection and Estimation of Common Antiseptics in Cotton Textile Materials
 Determination of Barium Activity Number of Cotton Textile Materials
 Estimation of Residual Chlorine in Cotton Textile Materials
 Determination of Absorbency of Cotton Textile Materials
 Determination of Degree of Whiteness of Cotton Textile Materials
 Determination of Scouring Loss of Cotton Textile Materials
 Determination of Residual Nitrogenous Matter of Cotton Textile Materials
 Method for Determination of Colour Fastness of Textile Materials to:
 Gas Fumes
 Washing in Presence of Sodium Hypochlorite
 Determination of Shrinkage of Woven Silk Fabrics on Washing
 Methods for Identification of Waterproof, Mildew-proof, Rotproof and Fireproof Finishes on Textiles
 Methods for Assessing Relative Efficiency of Detergents
 Determination of Amount of Size Left in Cotton Cloth After Desizing

Method for Measuring Leakage of Water Under Constant Hydrostatic Pressure
 Method for Assessing Resistance of Fabrics and Yarns to Insect Pests

iii) *Cotton Yarn and Fabrics* — Three amendments to IS: 171-1951, IS: 174-1951 and IS: 175-1951 were circulated and four standards were published.

Publications

IS: 1142-1957 Cotton Cambric, Scoured, for Oil Dressed Fabric
 IS: 1143-1957 Cotton Mosquito Netting, Square Mesh, Dyed
 IS: 1144-1957 Cotton Cellular Shirting, Dyed
 IS: 1178-1957 Filter Cloth, Grey for Sugar and Oil Industries

Work in Hand

Revision of IS: 293-1951 Code for Seaworthy Packaging of Cotton Textiles
 Calico, Cotton Bleached
 Canvas, Cotton, 12 oz — Scoured, Waterproof
 Canvas, Cotton, 16 oz — Scoured, Waterproof
 Canvas, Cotton, 20 oz — Scoured, Waterproof
 Canvas, Cotton, 24 oz — Scoured, Waterproof
 Duck Cotton, 10 oz — Scoured, White, Bleached, Brown, Waterproof
 Duck Cotton, 14 oz — Scoured, Waterproof
 Duck Cotton, 18 oz — Scoured, Waterproof
 Duck Cotton, 22 oz — Scoured, Waterproof
 Cloth, Cotton Lining
 Gaberdine, Cotton White, 28 in.
 Sewing Thread, Cotton
 Tape Newar
 Thread Cotton, Embroidery
 Twill Cotton
 Netting Mosquito, Round Mesh
 Code for Inland Packaging of Cotton Textiles

iv) *Textile Materials for Aircraft* — Two draft Indian Standard Specifications, one on braided cotton cord for aircraft and the other one dealing with cotton sewing thread for aircraft were advanced to their further stage of preparation.

Work in Hand

Braided Cotton Cord for Aircraft
 Cotton Sewing Thread for Aircraft
 Cotton Webbing for the Aircraft Safety Belts
 Flax Webbing for Aircraft Purposes
 Jute Webbing
 Tape Cotton
 Tape Silk
 Thread Silk
 Thread Linen
 Cord Elastic

v) *Jute and Jute Fabrics* — The Jute Sectional Committee, TDC 3, decided to await the decision of the Trading Organization for Jute Industries on the standard form of contract and the specifications to be covered therein. For the introduction of metric system in the Indian Standards relating to jute and jute manufacturers, TDC 3: 5 was set up to speed up the work in this field.

The draft Indian Standard Specification for A-twill Jute Bags for Packing Sugar, formulated on the basis of test results, obtained by the Indian Jute Mills' Association Research Institute, Calcutta, on the various samples of A-twill jute bags, was approved for circulation.

Work in Hand

Indian Hessians
 Packing Jute Manufactures in Bales, Trusses and Bundles
 Jute Bags for Packing Sugar

- vi) *Woollen and Worsted Fabrics* — Three Amendments to IS: 672-1955, IS: 677-1955 and IS: 678-1955 were published. The other subjects which continued to receive the consideration of the Committee are listed below:

Work in Hand

Worsted Lohis
 Super Shawls
 Woollen Rugs
 Woollen Blankets
 Worsted Suitings (Top Dyed)
 Worsted Suitings (Piece Dyed)
 Worsted Suitings (Special)
 Summer Suitings
 Union Suitings
 Tweed
 Blazer Cloth
 Woollen Coating
 Woollen Flannel for Trousering
 Worsted Shirting
 Woollen Carpets and Woollen Rugs (Floor Coverings)
 such as are made in Rajasthan, Agra, Gwalior, etc,
 for Export
 Hand-Woven Woollen Carpets (South India) for Export
 Cloth, Green, Baize
 Felt, Sheet Ordinary for Packing and Cushioning
 Felt, Brown
 Serge, Battle Dress
 Blankets Barrack/Hospital, Brown
 Serge, Blue No. 1
 Cloth Blanket (for Follower's Coats)

vii) *Handloom Fabrics*

Publications

- IS: 1093-1957 Handloom Cotton Madras Handkerchiefs
 IS: 1094-1957 Handloom Cotton Gada Cloth, Grey
 IS: 1095-1957 Handloom Cotton Dress Material, Bleached, Dyed, Printed, Striped or Checked
 IS: 1096-1957 Handloom Cotton Holland Cloth
 IS: 1097-1957 Handloom Cotton Mosquito Netting, Bleached or Dyed
 IS: 1098-1957 Handloom Cotton Cambric, Bleached
 IS: 1099-1957 Handloom Cotton Lining Cloth, Dyed
 IS: 1100-1957 Handloom Cotton Crepe, Bleached or Dyed
 IS: 1101-1957 Handloom Cotton Cellular Shirting, Bleached or Dyed
 IS: 1102-1957 Handloom Buckram Cloth

Work in Hand

Handloom Cotton:
 Madras Check
 Nainsook, Bleached or Dyed
 Calico, Bleached
 Shirting, Bleached, Dyed, Striped, Checked, or Printed
 Coating, Bleached, Dyed, Striped or Checked
 Long Cloth, Bleached or Dyed
 Pyjama Cloth, Grey and Striped
 Curtain Cloth, Bleached, Dyed, Striped, Checked or Printed
 Floor Durries
 Bed Durries
 Handloom Woollen and Worsted:
 Woollen Tweed
 Serge
 Worsted Raffal Shawls
 Worsted Lohis

- viii) *Coir and Coir Products* — The work continued on three grades of anjengo type of yarn, coir mats and coir matting.

ix) *Rayon Yarn and Fabrics*

Publications

- IS: 1226-1957 Method for Determination of Linear Density (Mass per Unit Length) in Denier Units (or tex Units) of Continuous Filament Rayon Yarn and Acetate Yarn
 IS: 1227-1957 Method for Determination of Twist in Continuous Filament Rayon Yarn and Acetate Yarn
 IS: 1228-1957 Method for Determination of Dry and Wet Single Strand Strength and Elongation of Continuous Filament Rayon and Acetate Yarn

- IS: 1229-1957 Method for Determination of Commercial Weight of Continuous Filament Rayon Yarn and Acetate Yarn and Their Mixture

Work in Hand

Rayon Taffeta
 Rayon Crepe
 Rayon Satin
 Rayon Half-Crepe Sari Cloth
 Rayon Georgette
 Rayon Voile, Ninon and Chiffon
 Rayon Linen
 Rayon Sari Cloth
 Rayon Half-Crepe
 Rayon Crinkle Georgette
 Rayon Jacquard Fabrics
 Rayon Baby Sharkskin
 Rayon Sharkskin
 Method for Grading Continuous Filament Rayon Yarn and Acetate Yarn

x) *Ropes and Cordages*

Publications

- IS: 1084-1957 Hawser-Laid Manila Rope
 IS: 1085-1957 Shroud-Laid Manila Rope
 IS: 1086-1957 Cable-Laid Manila Rope

Work in Hand

Shroud-Laid Sisal Rope
 Hawser-Laid Sisal Rope
 Cable-Laid Sisal Rope
 Shroud-Laid Coir Rope
 Hawser-Laid Coir Rope
 Cable-Laid Coir Rope

xi) *Textile Sizing and Finishing Materials*

Publication

- IS: 1184-1957 Maize Starch for Use in the Cotton Textile Industry

Work in Hand

Tapioca Starch

- xii) *Hosiery Yarn and Knitted Garments* — The Eastern Region Cotton Hosiery and Knitted Garments Subcommittee submitted its report covering data as regards weight, fabric structure, dimensions, sizes, etc, of various types and sizes of plain knit underwear, commonly made in that region, with a provision for regulating the size marking. The reports from the other Regional Subcommittees are awaited. The Woollen Hosiery and Knitted Garments Sectional Committee also continued to give its attention to the work of the formulation of standards for socks, jerseys, pull-overs, knitted gloves, woollen vests, etc.

Work in Hand

Cotton Hosiery:
 Plain Knit Underwear
 Interlock Underwear
 Interlock Outerwear
 Woollen Hosiery:
 Socks
 Jerseys
 Gloves Knitted
 Vests Woollen
 Drawers
 Comforters
 Stockings
 Hose Tops
 Cardigans
 Mufflers
 Slip-Overs
 Pull-Overs
 Gents and Ladies Garments
 Scarves
 Jerseys, Natural Grey

- xiii) *Textile Mill Stores* — One draft specification for cotton tubular banding to drive spindles

(for cotton textile mills) was finalized for publication, and the draft specification for cotton spindle tapes was circulated for comments.

Publications

- IS : 1186-1957 Shuttles for Hessian Looms
- IS : 1187-1957 Shuttles for Sacking Looms
- IS : 1190-1957 Twin Wire Healds for Use in Cotton and Silk Weaving (Excluding Jacquard and Fancy Weaving)
- IS : 1225-1957 Leather Picking Bands for Looms

Work in Hand

- Six Inch Lift Varnished and Enamelled Ring Rabbeth Bobbins for Cotton Mills
- Shuttles for Automatic Looms
- Picking Sticks for Cotton Looms
- Shuttles for Plain Calico Looms
- Buffers
- Pickers
- Buffer Bands for Automatic Looms
- Cotton Healds Used in Cotton Mills
- Wire Reeds Used in Jute Mills
- Fluted Rollers
- Spindles
- Spindle Tapes
- Tubular Banding to Drive Spindles (for Cotton Textile Mills)

- xiv) *Textile Machinery*—The work on the formulation of specification for plain calico looms, ring frames, carding engines and their important component parts received further attention.

Work in Hand

- Loom Dimensions
- Fly Spindles
- Picking Noses
- Preferred Dimensions of Ring Frame and Its Important Component Parts, Carding Engine and Its Component Parts
- Specification for:
 - Ring Frame and Its Important Component Parts
 - Carding Engine and Its Component Parts

- xv) *Wicks for Oil Burning Appliances*—The Wicks for Oil Burning Appliances Sectional Committee, TDC 32, held its first meeting on 5 November 1957. The Committee decided that the following subjects should be taken up in the order of their priority:
- a) Flat Wicks,
 - b) Circular Wicks, and
 - c) Round Wicks.

Work in Hand

- Flat Cotton Wicks for Hurricane Lanterns

2.4 Chemical Division—An important aspect of the work done by the Chemical Division, in connection with the changeover to metric system, was concerning the formulation of Indian Standards on metal containers on the basis of metric sizes. Other important projects covered the needs of protected industries, such as plastic raw materials and finished products, glass containers for fruit preserves industry, sheet glass, etc. Special attention was paid to the formulation of standards for consumer articles, such as inks, papers, and boot polish.

Among the important subjects covered by standards published during the year, mention may be made of vetiver (*khus*) oil; limestone for glass industry; bleaching earths used for decolorizing vegetable oils; gear lubricant multipurpose; brushes, artists and lettering; dye-based fountain pen inks; vinyl coated fabrics (leather cloth); and glass shells for general lighting service lamps.

Standards relating to ready mixed paints, lubricants, glass bottles and some basic chemicals were also issued.

2.4.1 The tenth meeting of the Chemical Division Council (CDC), held at Calcutta on 18 March 1958, transferred the work relating to belting to the Engineering Division Council; considered the proposal of setting up a new sectional committee on methods of test for petroleum and petroleum products and lubricants; and accepted 50 new subjects for the formulation of standard specifications.

2.4.2 A brief account of the work done by the Division is given below:

- i) *Comparative Study of Terminology, Indicators, Reagents, Test Procedures, etc., Prescribed in Indian Standards*—A comparative study of published Indian Standards on chemical subjects, numbering more than 450, revealed that a large number of variants of indicators, reagents, test procedures, etc., had been prescribed. The Chemical Standards Sectional Committee, while endeavouring to reduce the number of these variants to the minimum, decided that generally the use of proprietary brands of indicators in the recommended practices should be avoided. The Gutzeit method for the determination of arsenic was usually prescribed in Indian Standards. Recently, the Technical Development Establishment Laboratories, (TDEL), Kanpur, had suggested amendments to this method which, according to them, gave more concordant results. The Committee considered the amendments and requested the TDEL, Kanpur, to collect more data and advise it on the following points:
 - a) Whether the strip or disc method should be more desirable, particularly as there existed no quantitative relationship between the depth of the colour and the length of the stain produced, and
 - b) Whether the use of mercury bromide was preferable to the use of mercury chloride.
- ii) *Alcohol and Allied Products*—An Indian Standard Specification for Acetic Anhydride was published for the use of industry.

As a result of the progress made by the alcohol industry, it was felt necessary to revise the existing standards on Rectified Spirit (IS : 323-1952) and Denatured Spirit (IS : 324-1952). In the draft Revision of IS : 323-1952, the requirements of ethanol content, acidity and residue on evaporation were amended and a new grade was introduced to meet the special requirements of the Defence organizations. With regard to IS : 324-1952, the Committee concerned came to the conclusion that the quality of denatured spirit could be made less stringent without impairing the interest of the consumers.

The draft Revisions of both the standards have been issued for eliciting comments.

Work in Hand

Revision of IS : 323-1952 Rectified Spirit
Revision of IS : 324-1952 Denatured Spirit
Alcoholometric Tables

- iii) *Acids and Fertilizers* — Till recently, India had been depending on the imports of oleum, commercially known as fuming sulphuric acid and commonly used in the manufacture of explosives and also by the dyestuff, pharmaceutical and DDT industries. With a view to helping the indigenous industry in the manufacture of quality material, an Indian Standard for Oleum (20 Percent), Technical (IS : 1089-1957), was issued. In due course, the work on formulating standards for higher concentrations of oleum is expected to be taken up.

Publications

IS : 1089-1957 Oleum (20 Percent), Technical
IS : 1113-1957 Ammonium Chloride, Pure
IS : 1114-1957 Ammonium Chloride, Technical
Amendment No. 1 to IS : 266-1950 Sulphuric Acid

Work in Hand

Amendment No. 2 to IS : 266-1950 Sulphuric Acid
Ammonium Sulphate-Nitrate (Compound Fertilizer)
Ammonium Sulphate-Phosphate (Mixed Fertilizer)
Glossary of Terms Used in Fertilizer Trade and Industry
Urea, Technical and Pure

- iv) *Alkalis and Chlorine* — Six draft standards for quicklime and hydrated lime used by various chemical industries, namely calcium carbide, bleaching powder, glass, greases, etc, were issued for comments. On the recommendation of the Estimates Committee of the Lok Sabha, the work on formulation of standards for Common Salt for Animal Consumption and Cattle Licks (Plain and Mineralized) was taken up by the Institution and two draft standards on these materials were also issued for comments.

Publications

IS : 1065-1957 Bleaching Powder, Stable
Amendment No. 1 to IS : 708-1956 Potassium Chlorate, Technical

Work in Hand

Methods of Sampling and Test for Quicklime and Hydrated Lime
Quicklime and Hydrated Lime for Calcium Carbide
Quicklime and Hydrated Lime for Chemical Industries
Lime for Bleaching Powder
Quicklime and Hydrated Lime for Glass Industry
Hydrated Lime for Greases
Common Salt for Animal Consumption
Cattle Licks (Plain and Mineralized)
Calcium Chloride, Anhydrous and Technical
Stannic Chloride
Amendment No. 2 to IS : 252-1950 Caustic Soda, Technical

- v) *Coal Carbonization Products* — In this field, an Indian Standard on Coal Tar Solvent Naphtha, Light, Grade 2 (IS : 1235-1957) was finalized for publication.

The Committee, responsible for the preparation of this standard, took note of the fact that a good proportion of the indigenous production of coal tar solvent naphtha, light, which failed to meet the requirements of IS : 213-1956 Coal Tar Solvent Naphtha, Light, Grade I, was, nevertheless, of use in some industries. In view of this, the Committee sponsored

the production of IS : 1235-1957. It was, however, expected that the entire indigenous production would improve its quality in the course of the next few years and this standard and IS : 213-1956 would require review and revision.

Work in Hand

Coal Tar Solvent Naphtha, Light, Grade 2

- vi) *Fine Chemicals* — Draft Indian Standards on activated calcium carbonate and precipitated calcium carbonate, for the tooth paste industry, were finalized for printing. Consideration of draft Indian Standard for precipitated calcium carbonate for tissue paper was deferred pending the collection of more data from users and manufacturers. Besides, two draft Indian Standard Specifications for dicalcium phosphate and tricalcium phosphate used for dentifrice were approved for circulation and comments.

Publications

IS : 246-1957 Sodium Thiosulphate (*Revised*)
IS : 247-1957 Sodium Sulphite (*Revised*)
IS : 1044-1957 Turkey Red Oil

Work in Hand

Amendment No. 1 to IS : 557-1954 Sodium Acetate, Technical and Photographic
Precipitated Calcium Carbonate
Activated Calcium Carbonate
Tricalcium Phosphate
Dicalcium Phosphate
Vegetable Tallow
Hydrogen Peroxide
Nickel Chloride
Nickel Sulphate and Nickel Ammonium Sulphate

- vii) *Miscellaneous Chemicals* — The draft standard on compressed hydrogen could not be published as the industries wanted more time for consideration.

The Chemicals (Misc) Sectional Committee also launched upon a programme of formulating standards on gypsum. At present the only dependable source of industrial gypsum is Rajasthan, where it occurs as a tertiary formation of the region. The quality of gypsum being very inconsistent, there remains a considerable quantity of low grade material which cannot be marketed easily. It has been feared that unless some consuming industries agree to utilize this low grade ore, the stock of high calcium sulphate content gypsum would be exhausted. With a view to recommending proper grades of the material for use by the various consuming industries, the formulation of standards on gypsum has been undertaken.

Publications

Amendment No. 1 to IS : 259-1950 Ammonia Alum, Technical
Amendment No. 1 to IS : 261-1950 Copper Sulphate
IS : 1092-1957 China Clay for Paper and Textile Industries
IS : 1109-1957 Borax, Technical

Work in Hand

China Clay for Rubber Industry
Compressed Hydrogen
Gypsum
Methods of Test for Gypsum
Methods of Sampling for Gypsum
Light Magnesium Carbonate for Rubber Industry
Talc for Cosmetic Industry

Kaolin for Cosmetic Industry
Compressed Nitrogen Gas, Industrial

- viii) *Rubber Products* — The Indian Standard Specification for Rubber Lined Woven Jacketed Hose for General Fire Fighting Services, which was pending finalization due to difference of opinion regarding the sizes to be covered, was approved for printing. Besides, four drafts on braided hoses were finalized for adoption as Indian Standards, and six draft standards were approved for circulation; three drafts covering the various types of hoses and three on raw materials for rubber industry (pigments).

Work in Hand

Rubber Lined Woven Jacketed Hose for General Fire Fighting Services
Water Suction Hose
Braided Air Hose, Heavy Duty
Braided Hose, Low Pressure
Braided Water Hose, High Pressure
Braided Air Hose, Light Duty
Unlined Flax Water Hose
Armoured Suction Hose for Fire Fighting Services
Delivery Hose, Flax, or Cotton Burnettized for Fire Fighting Services
Latex Foam Rubber
Ebonite
Whiting for Rubber Industry
Red Iron Oxide for Rubber Industry
Barytes for Rubber Industry
Titanium Dioxide, Anatase Type
Zinc Oxide, Red Seal
Yellow Iron Oxide

- ix) *Paints* — Two specifications on anti-corrosive and anti-fouling paints for ship bottom and hulls were issued for eliciting comments. The Paints and Allied Products Sectional Committee, which has to its credit the publication of more than 200 standards, and has covered almost the whole series of the DGS&D Specifications on paints and allied materials (G/P 307/1-276), was now engaged in reviewing the standards already published, in view of the advancement of paint technology and industrial development in the country.

Publications

IS : 1103-1957 Brushes, Artists
IS : 1104-1957 Brushes, Lettering
IS : 1188-1957 Ready Mixed Paint Brushing, Oil Gloss, Genuine Zinc Oxide for General Purposes
IS : 1189-1957 Oil Paste for Paints, Yellow Ochre
IS : 1232-1957 Ready Mixed Paint, Brushing, Yellow Ochre, Oil Gloss for General Purposes
IS : 1236-1958 Ready Mixed Paint Brushing, Oil Gloss, Heat Resisting to IS Colour No. 360 Deep Buff
IS : 1257-1958 Black Japan, Type B, Exterior

Work in Hand

Amendment No. 1 to IS : 57-1950 Red Lead for Paints and Jointing Purposes
Amendment No. 1 to IS : 197-1952 Methods of Test for Varnishes and Lacquers
Amendment No. 1 to IS : 350-1952 Insulating Oil Varnish, Clear Baking
Amendment No. 1 to IS : 351-1952 Insulating Varnish, Baking Bitumen Type
Amendment No. 1 to IS : 352-1952 Insulating Spirit Varnish, Clear, Air-Drying
Amendment No. 1 to IS : 353-1952 Insulating Varnish, Non-Alcoholic, Clear, Air-Drying
Amendment No. 1 to IS : 384-1954 Brushes, Paints and Varnishes, Flat
Revision of IS : 62-1950 Graphite for Paints
Revision of IS : 101-1950 Methods of Test for Ready Mixed Paints and Enamels
Cellulose Nitrate, Ester Soluble, for Use in the Manufacture of Clear and Pigmented Lacquer

Glossary of Terms Relating to Paints

Black Japan, Type C
Anti-Corrosive Paint, Brushing, for Ships Bottom and Hulls, Red, Chocolate or Black as Required
Anti-Fouling Paint, Brushing, for Ships Bottom and Hulls, Red or Black as Required, Type A and Type B

- x) *Lac* — The work in this field included organization of a scheme for testing the suitability of sealing wax, conforming to grade 3 of IS : 868-1956, for the use of sealing railway wagons. Samples were collected from indigenous manufacturers and other suppliers for conducting tests.

Work in Hand

Sealing Wax for Railway Wagons

- xi) *Glassware* — Draft standards for boiling flasks (narrow-necked) and reagent bottles were finalized for adoption as Indian Standards, and four other draft standards on laboratory glassware were approved for circulation.

Samples of sheet glass were tested at the Central Glass & Ceramic Research Institute, the Hindusthan Pilkington Glass Works and the Seraikella Glass Works. On the basis of the test results, a draft standard was prepared for transparent sheet glass suitable for glazing and framing purposes.

Indian Standard Specification for Glass Ampoules (IS : 489-1954) was published in 1954. While implementing the standard, the users as well as producers suggested a few amendments to the standard in the light of their experiences. These suggestions were being studied by the Ampoules and Vaccine Phials Subcommittee, CDC 10 : 4; and it was likely that a draft revision of the standard would be issued, by the end of 1958, for comments.

Publications

IS : 997-1957 Limestone for Glass Industry
IS : 1106-1957 Distilled Water Glass Bottles
IS : 1107-1957 Aerated Water Glass Bottles
IS : 1108-1957 Tincture Glass Bottles
IS : 1112-1957 Glass Shells for General Lighting Service Lamps

Work in Hand

One Mark Graduated Flasks
One Mark Pipettes
Glass Filter Funnels
Filter Flasks
Boiling Flasks (Narrow-Necked)
Reagent Bottles
Glass Containers for Fruit Preserves
Sheet Glass
Penicillin Bottles
Revision of IS : 489-1954 Glass Ampoules
Beakers
Distilling Flasks
Separating Funnels
Petri Dishes
Weighing Bottles
Test Tubes
Colours for Signal Glass

- xii) *Essential Oils* — The Essential Oils Sectional Committee took up the work of formulating Indian Standards on 15 new items concerning perfumery chemicals and essential oils for giving a fillip to the export trade and also to save foreign exchange.

An Indian Standard (IS : 1177-1957) on Vetiver (*Khus*) Oil was issued covering only the requirements for the oil derived

from wild *khus* roots. Since the oil from cultivated plants also deserved encouragement, special efforts were made to collect technical data. Some data, which were made available, were under the consideration of the subcommittee concerned.

Publications

- IS : 328-1957 Oil of Eucalyptus (*Revised*)
IS : 1177-1957 Vetiver (*Khus*) Oil

Work in Hand

- Amendment No. 1 to IS : 326-1952 Methods of Test for Essential Oils
Amendment No. 1 to IS : 327-1952 Lemongrass Oil (East Indian Lemongrass Oil)
Amendment No. 1 to IS : 329-1952 Sandalwood Oil
Amendment No. 1 to IS : 512-1954 Citronella Oil
Clove Oil
Cinnamon Leaf Oil
Linaloe Oil
Bergamot Oil
Cedarwood Oil
Celery Seed Oil
Dill Oil
Lavandin Oil
Lavender Oil
Patchouli Oil
Pine Oil
Rosemary Oil
Spike Lavender Oil
Perfumery Chemicals:
Citral
Citronellol
Geraniol
Ionones (α , β and 100%)

- xiii) *Inks and Allied Products* — The revision of the existing standard (IS : 220-1950), was taken up in order to meet the demand of the ink industry, which desired that the standard should cover, besides blue-black ink, the requirements for other permanent fountain pen inks, such as royal blue, green, violet, etc.

Publications

- IS : 1221-1957 Dyebased Fountain Pen Inks (Blue, Green, Violet, Black and Red)
IS : 1222-1957 Ink, Duplicating, All Weather, Black for Rotary Type Machines
IS : 1234-1957 Ink, Stencil, Oil Base for Marking Porous Surfaces

Work in Hand

- Ink, Stencil, for Marking Non-Porous Surfaces, Colour as Required
Ink, Duplicating, All Weather, Black for Drum Type Machines
Revision of IS : 220-1950 Fountain Pen Inks
Ink, Metal Stamp
Ink, Finger Printing
Carbon Paper for Typewriter

- xiv) *Coal and Coke* — Six draft Indian Standards dealing with various methods of test for coal and coke were prepared and issued for comments to provide standards on the methods to be used for testing them. The committee, responsible for the preparation of these draft standards, has been considerably helped by the investigation and research being done by the Central Fuel Research Institute, and by the technical data collected by large-scale consumers of coal and coke, such as Railways, Ministry of Production, Ministry of Iron & Steel, etc.

Work in Hand

- Methods of Test for Coal and Coke:
Proximate Analysis, Sulphur and Calorific Value
Ultimate Analysis

Special Impurities: Carbon as Carbonate, Forms of Sulphur, Chlorine, Phosphorus, Arsenic
Methods of Test for Coal Carbonization—Caking Index, Swelling Properties, Gray-King Assay (LT) Coke Types
Methods of Test of Coke—Special Tests
Methods of Test of Ash of Coal and Coke

- xv) *Paper* — Before taking up the work of formulating quality standards for individual types of papers, boards, etc, the Paper Sectional Committee, CDC 15, organized a scheme for testing the samples of indigenous paper and arranged an investigation into the weight factor for different types of paper pulp at the Forest Research Institute, Dehra Dun. The Imperial Tobacco Co. Ltd. had completed the first phase of programme of the testing of board samples.

Work in Hand

- Methods of Test on Paper and Allied Products, Part II
Base Paper for Sensitized Paper
Blotting Paper
Waterproof Packing Paper, Bitumen Laminated
Paper for Electrical Purposes Excluding Varnished Paper and Paper for Cables
Kraft Paper
Paper for Permanent Government Record
Paper Board

- xvi) *Leather and Leather Goods* — The draft Indian Standard Glossary of Terms Relating to Hides, Skins and Leather, excluding the general chemical and other terms relating to proprietary and patented items, was got ready for circulation.

A draft Indian Standard was under compilation in order to obtain uniformity in sizes and fittings of footwear made on lasts.

With a view to solving India's dependence on imported wattle bark, used in leather tanning, on a national and scientific level, a panel was set up for collecting the technical data and for preparing working documents on vegetable tans and tan extracts.

Constant efforts were also made to impress upon the industrial units, the vital importance of the formulation and implementation of Indian Standards for improving the export trade in the field of East India tanned leather.

Work in Hand

- Leather Pump Buckets Made from Chrome Tanned Leather
Glossary of Terms Relating to Hides, Skins and Leather
Amendment No. 1 to IS : 1017-1957 Chamois Leather
Vegetable Tanned Leather Belting
Round Belting for Small Machines
Sizes and Fittings of Footwear
Revision of IS : 582-1954 Methods of Sampling and Test for Vegetable and Chrome Tanned Leathers
East India Tanned Leather

- xvii) *Plastics* — A scheme for testing improved varieties of indigenous phenol-formaldehyde moulding powders, proposed last year, was organized and the samples were expected to be distributed shortly to the participating laboratories for carrying out tests, after which one specification or more, as felt necessary, would be drawn up. The draft Indian Standards on the first five subjects, mentioned below, were

nearing finalization. A draft Indian Standard on thermosetting synthetic resin-bonded laminates was processed further for circulation. A draft on polystyrene was also prepared for preliminary examination by the Committee.

Work in Hand

Methods of Sampling and Test for Phenolic Moulding Materials, Part II
Phenol Formaldehyde Moulding Powder
Cellulose Nitrate for Leather Cloth
Methods of Test for Plastic Buttons
Plastic Buttons
Thermosetting Synthetic Resin-Bonded Laminates
Polystyrene
PVC Unsupported Sheets and Fibres

- xviii) *Classification and Labelling of Dangerous Substances* — The Committee on Labelling and Classification of Dangerous Substances, CDC 18, had deferred, last year, the finalization of Indian Standard Code of Symbols for Labelling Dangerous Goods, as they expected that the ILO and UNO Committees would soon come to an agreement about the symbol indicating the danger of corrosion. The two international committees, however, could not come to an agreement on the symbol. The ISI Committee, therefore, decided to go ahead with the Indian Standard covering the ideas of both the ILO and UNO Committees.

Work in Hand

Code of Symbols for Labelling of Dangerous Goods
Code of Classification of Dangerous Substances

- xix) *Petroleum Products* — An important aspect of the work in the field of petroleum industry has been the consideration of ASTM-IP Measurement Tables of Petroleum Products, circulated as draft ISO Recommendations, and the question of their adoption by India. The Petroleum Measurements Subcommittee, CDC 22: 6, was focussing its attention on this problem.

Work in Hand

Methods of Test for Petroleum Fuels and Solvents:
Aniline Point and Mixed Aniline Point
Aromatic and Olefinic Contents
Ash and Water Soluble Ash
Burning Quality and Wick-Char
Carbon Residue
Colour
Copper Strip Corrosion
Diesel Index
Distillation
Flash Point — Closed
Freezing Point
Existent Gum
Hard Asphalt
Heat of Combustion
Kauri — Butanol Number
Mineral or Strong Acidity
Neutralization Number
Octane Number
Oxidation Stability
Pour Point and Cloud Point
Sampling
Sediment
Smoke Point
Specific Gravity
Sulphur
TEL Content
Vapour Pressure, Reid
Viscosity
Water and Sediment by Centrifuge
Water by Distillation
Water Tolerance
Cetane Number
Measurement of Petroleum and Petroleum Products

Tank Strapping and Calibration
Gauging of Petroleum and Petroleum Products
Kerosenes
Light Diesel and High Speed Diesel Oils
Furnace Fuel Oils
Motor and Aviation Spirits

- xx) *Water* — The Water Sectional Committee, CDC 26, which was created in 1956, held its first meeting in July 1957. The Committee set up three panels for drafting (a) physical and chemical methods of test, (b) microbiological methods of test, and (c) specifications for boiler feed water and its treatments. The Committee also received proposals for studying the aggressive action of water on building materials and also the cleanliness of river waters and the reduction of polluting effects of the trade wastes and effluents of factories.

Work in Hand

Physical and Chemical Methods of Test for Water
Microbiological Methods of Test for Water
Boiler Feed Water and Its Treatments

- xxi) *Ceramicware* — The Ceramicware Sectional Committee, CDC 27, set up six panels to formulate proposed draft Indian Standards on (a) terminology, (b) enamelware, (c) laboratory and hospital porcelain, (d) stoneware containers, (e) dinnerware, and (f) ceramicware raw materials.

The Terminology Panel has agreed tentatively on the various terms to be included in the proposed draft Indian Standard, and a working document for the consideration of CDC 27 was being got ready. The Panel concerned with the stonewares conducted a general survey for studying the quality of stoneware manufactured in the country. Samples from various factories were collected and tested at the Central Glass & Ceramic Research Institute, Calcutta. The test results were being made use of for preparing the proposed draft Indian Standards on stoneware. The Dinnerware Panel also initiated its work and collected the technical data for consideration at its first meeting scheduled on 15 April 1958.

Work in Hand

Terminology
Enamelware
Laboratory and Hospital Porcelain
Stoneware Containers
Dinnerware
Ceramic Raw Materials

- xxii) *Lubricants* — Data were being collected, before finalizing the draft standard on steam turbine lubricating oil, whether the requirements for demulsification number prescribed in the standard should be replaced by anti-wear test and also whether the figures for viscosity index should be stipulated in order to eliminate oils of low viscosity. Revision of the draft IS: 317-1951 Automotive Hydraulic Brake Fluid, incorporating changes suggested by the Lubricants Sectional Committee, was being got ready for circulation.

The question of revising the existing Indian Standards on Steam Cylinder Oils

(IS: 311 to 316-1951) was further discussed by the Steam Cylinder Oils Subcommittee. Having felt that the oils should be graded according to operating steam temperature range, the Subcommittee proposed four grades—three for unfiltered oil and one for filtered oil—in place of the existing six Indian Standards. These grades would cover steam temperature up to 345°C. For steam temperature above 345°C, it was proposed that a new specification should be prepared only after the results of the service trials on different railway zones were made available. The service trial scheme, for conducting performance tests under controlled conditions, was finalized and the Railway Testing and Research Centre was making necessary arrangements to give effect to the scheme under various railway zones.

Publications

- IS: 1083-1957 White Oil, Light, Technical
- IS: 1088-1957 Oil, Clock and Watch
- IS: 1115-1957 Oil, Cutting, Soluble
- IS: 1118-1957 Gear Lubricant, Multipurpose (Extreme Pressure Gear Oil)
- IS: 1153-1957 Temporary Corrosion Preventive, Fluid, Hard Film, Solvent Deposited
- IS: 1154-1957 Temporary Corrosion Preventive, Fluid, Soft Film, Solvent Deposited, Water Displacing
- Amendment No. 1 to IS: 493-1954 Machinery and Spindle Oils
- Amendment No. 1 to IS: 496-1955 Internal Combustion Engine Lubricating Oils
- Amendment No. 1 to IS: 588-1954 Mosquito Larvicidal Oil

Work in Hand

- Steam Turbine Lubricating Oils
- Grease S. No. 2
- Revision of IS: 317-1951 Automotive Hydraulic Brake Fluid
- Gear Lubricant Regular
- Temporary Corrosion Preventive Grease Soft Film, Cold Application
- Amendment No. 1 to IS: 719-1955 Grease S/L No. 1 Oil, Cylinder, Unfiltered, Grade 1 (Revision of IS: 311-1951 and IS: 312-1951)
- Oil, Cylinder, Unfiltered, Grade 2 (Revision of IS: 313-1951 and IS: 314-1951)
- Oil, Cylinder, Unfiltered, Grade 3
- Oil, Cylinder, Filtered, Grade 1 (Revision of IS: 315-1951 and IS: 316-1951)
- Oil, Hydraulic, Mineral Oil Type

xxiii) *Treated Fabrics*—A draft Indian Standard Specification for Cellulose Nitrate Coated Fabrics was approved for circulation. The work on formulating an Indian Standard on tarpaulin was taken in hand as a priority item.

Publication

- IS: 1259-1958 Vinyl Coated Fabrics (Leather Cloth)

Work in Hand

- Cellulose Nitrate Coated Fabrics
- Tarpaulin

xxiv) *Oils, Fats and Soaps*—Laboratory investigations were carried out by Shri Ram Institute for Industrial Research and Hindustan Lever Limited to provide technical data for the formulation of quality standards for bleaching earths.

Tallow is extensively used by the textile, soap and fatty acids industries. As a preliminary to evolving a suitable standard on the subject, samples were collected from various slaughter houses and analysed by Hindustan Lever Ltd.

Similar analytical work was undertaken by Harcourt Butler Technological Institute, Kanpur.

Publication

- IS: 1035-1957 Methods of Sampling and Test for Bleaching Earths Used for Decolorizing Vegetable Oils

Work in Hand

- Stearic Acid and Oleic Acid
- Shark Liver Oil and Sardine Oil
- Mutton Tallow
- Glycerine, Refined and Glycerine, Crude

xxv) *Metal Containers*—At the instance of the Standing Metric Committee of the Government of India, the work on the formulation of Indian Standards for metal containers in metric system was taken up. For this purpose, the metal containers were divided into three groups, namely: (a) Barrels, (b) Drums and Kegs, and (c) Tinplate Containers. It was decided that the standards on metal containers should be formulated on the basis of their respective capacities by volume and not by weight of the material to be packed therein. In this connection, high priority was assigned to the work of formulating an Indian Standard for container roughly equivalent to 4 Imperial-gallon rectangular tin-container of the KO type which accounts for over 60 percent of the actual production of tinplate containers made from the indigenous tinplate and in which are packed various commodities like kerosene oil, vegetable oils and vanaspati. It was also agreed, that considering the economy of the tinplate used, the eighteen-litre tin would be the most suitable size in metric system. Accordingly, a draft Indian Standard on eighteen-litre tins was issued for comments.

The Barrels Subcommittee agreed to draft Indian Standard on two types of barrels, namely: light and heavy, the sizes being 150 litres (or 32/33 gallons) and 200 litres (or 44/45 gallons), respectively.

The Tinplate Containers Subcommittee evolved a series of sizes of containers for the following three trades: (a) Paints, (b) Vegetable Oils, and (c) Petroleum Products. These series were under examination, within the trades, for obtaining their general approval before preparing the proposed draft Indian Standards.

Work in Hand

- Eighteen-Litre Tins
- Glossary of Terms Relating to Metal Containers Trade
- Drums and Kegs
- Barrels, Light
- Barrels, Heavy
- Tins for Paints; Vegetable Oils; and Petroleum Products

2.5 Agricultural and Food Products Division

—The Division, having been inaugurated in 1956, entered the second year of its activities. It decided to formulate standards for cattle byres and tea, and undertook to investigate the need for establishing standards for edible food colours. The work, undertaken during the preceding year, in the field of sugar, edible starches, confectionery, cereal products, bee-keeping equipment, dairy products, dairy laboratory apparatus and glassware,

poultry and animal feeds, pest control products, etc, made considerable headway: standards for many of these items were finalized during the year.

2.5.1 The Division Council held two meetings during the year, a special meeting having been convened in Madras on 24 December 1957, so that the members could have an opportunity for contacts with the traders, manufacturers and agriculturists attending the third Indian Standards Convention in Madras, where subjects relating to agriculture and food were given special importance. In all, 27 new subjects were taken up for formulation of standards during the year.

2.5.2 A brief review of the work done by the Division is given below:

- i) *Sugar* — Two draft Indian Standards, one for sugar used in fruit processing industry and the other for cane molasses, were approved for wide circulation. Having investigated the need for a standard for sugar used in fruit processing industry, it was decided to formulate such a standard based on the draft standard prepared by the Director, National Sugar Institute, Kanpur.

Three draft standards for (a) refined sugar, (b) icing sugar, and (c) methods of test for vacuum pan sugar (plantation white) were also finalized. Regarding the earlier decision of the Sectional Committee to modify the existing requirements for grain-size, Group A for vacuum pan sugar, and also the requirements for crystals in sealed samples, it was decided to defer the implementation of this decision to a future date, when the required new Tyler Test Sieves No. 7, 12, 16 and 24, or their corresponding Indian Test Sieves, which are difficult to obtain at present, would be available in the country.

Publication

IS : 1152-1958 Icing Sugar

Work in Hand

Methods of Test for Vacuum Pan Sugar (Plantation White)
Amendment No. 1 to IS : 498-1953 Grading for Vacuum Pan Sugar
Refined Sugar
Cube Sugar
Sugar Used in the Fruit Processing Industry
Cane Molasses

- ii) *Glucose* — An amendment to the Indian Standard Specification For Liquid Glucose incorporating the modifications recommended by the Glucose Sectional Committee was issued.

Publication

Amendment No. 1 to IS: 873-1956 Liquid Glucose

- iii) *Edible Starches, Confectionery and Cereal Products* — Standards for *suji* or *rava* (semolina), biscuits (excluding wafer biscuits), wheat *atta*, pearl barley, barley powder, corn flakes and baking powder were finalized; and draft standards for covering chocolate, cocoa powder and cocoa butter were got ready for wide circulation. Investigations to establish the need, or otherwise, for the formulation of standards on groundnut cake flour and wheat gluten were also conducted during the year under report.

Publications

IS : 1006-1957 Arrowroot Starch
IS : 1008-1957 Hard Boiled Sugar Confectionery
IS : 1010-1957 *Suji* or *Rava* (Semolina)
IS : 1011-1957 Biscuits (Excluding Wafer Biscuits)
IS : 1155-1957 Wheat *Atta*
IS : 1156-1957 Pearl Barley
IS : 1157-1957 Barley Powder
IS : 1158-1957 Corn Flakes
IS : 1159-1957 Baking Powder

Work in Hand

Cocoa Powder
Cocoa Butter
Covering Chocolate
Baker's Yeast
Edible Tapioca Starch
Edible Tapioca Chips
Edible Tapioca Flour
Milk Toffee
Cream Toffee
Butter Toffee

- iv) *Apiary* — Two draft Indian Standard Specifications for Beeswax and Beehives were approved for wide circulation. Another draft Indian Standard Specification for Pedestal for Beehives was also approved, but its circulation was withheld till such time the draft Indian Standard Specification for Beehives was finalized.

Work in Hand

Beeswax
Beehives
Pedestal for Beehives
Honey Extractors
Honey Filters
Travelling Bee Box
Primary Pasteurization Unit
Bulk Honey Storage Containers
Postal Bee Packages

- v) *Dairy* — The work in this field covers not only dairy products, but also dairy equipment, dairy laboratory apparatus and glassware and dairy utensils.

Six draft Indian Standards were finalized and another three were approved for circulation for comments. One of the subjects for which standards were formulated is density hydrometers for use in milk and which are calibrated with a liquid surface tension of 50 dynes/cm. This figure was arrived at after analysing a large number of samples of cow and buffalo milk at the National Dairy Research Institute, Karnal. The British Standard on the subject envisages calibration at 46 dynes/cm.

Publications

IS : 1165-1957 Milk Powder (Whole & Skim)
IS : 1166-1957 Condensed Milk
IS : 1167-1957 Edible Casein
IS : 1183-1957 Density Hydrometers for Use in Milk

Work in Hand

Determination of Fat in Whole Milk, Evaporated (Unsweetened) Milk, Separated Milk, Skim Milk, Butter-milk and Cream by the Gerber Method
Apparatus for the Determination of Fat in Whole Milk, Evaporated (Unsweetened) Milk, Separated Milk, Skim Milk, Buttermilk and Cream by the Gerber Method
Lactose
Cylindrical Glass Milk Bottles
Milk Bottle Crates
Aluminium Milk Cans
Stainless Steel Milk Cans
Tinned Mild Steel Milk Cans
Milking Pails
Milk Strainers
Method of Rapid Examination of Purity of Milk

Method of Chemical Analysis of Milk
Method of Bacteriological Examination of Milk
Aluminium Foils for Capping of Milk Bottles

- vi) *Tobacco Products* — In this field, two sub-committees were set up, one to formulate standards for cigarettes and smoking mixtures, and the other for cigars and *bidis*.

Work in Hand

Cigarettes
Smoking Mixtures
Bidis
Bidi Cigarettes
Hooka Tobacco
Pipe Tobacco
Cigars

- vii) *Animal and Poultry Feeds* — The Animal Feed Sectional Committee, realizing that it was not possible to produce high grade stock of animals, either for milk or for work, without the provision of adequate or balanced feed for them; and also realizing that it was necessary for the feed to be not only well balanced but also economical, decided to collect information from different regions of the country on various aspects, such as availability of raw materials and their nutritional efficacy, the nutritional deficiency of cattle and poultry, the availability and suitability of waste products, etc. The Committee appointed two sub-committees, namely (a) Poultry Feed Subcommittee, and (b) Cattle Feed and Mineral Mixtures Subcommittee. The Committee also decided that the work on the following subjects should be undertaken:

Tapioca Chips for Animal Feed
Tapioca Flour for Animal Feed
Poultry Feed.

- viii) *Tea and Cattle Byres* — Two sectional committees, namely Tea Sectional Committee, and Cattle Byres Sectional Committee, were set up for the formulation of comprehensive standards for tea and cattle byres, respectively.
- ix) *Pest Control Products* — In this field a number of Indian Standards covering a large number of chemicals and formulations commonly used in the control of pests and insects have been published and finalized. In the published Indian Standards on BHC, Technical; BHC Dusting Powders; BHC Water Dispersible Powder Concentrates; BHC Emulsifiable Concentrates; BHC Refined; and *gamma*-BHC (Lindane), a combined method, namely *chromatographic-cum-polarographic*, has been prescribed as a referee method for the determination of *gamma*-isomer content of BHC. Since testing facilities for the combined method were not usually available in the same laboratory, amendments were issued permitting the use of either of the methods, *chromatographic* or *polarographic*, instead of the combined method, till such time as facilities for the combined method become available in the same laboratory.

Experience in the testing of DDT, BHC and dieldrin water dispersible powder concentrates for suspensibility after accelerated storage has shown that the test procedure, specified in the published standards,

has certain limitations. Accordingly, amendments were issued to the published standards.

Publications

IS: 634-1957 Ethylene Dichloride Carbon Tetrachloride Mixture (3:1 v/v)
IS: 1251-1958 Zinc Phosphide, Technical
Amendment No. 1 to IS: 560-1955 BHC, Technical
Amendment No. 1 to IS: 565-1955 DDT Water Dispersible Powder Concentrates
Amendment No. 1 to IS: 881-1956 BHC, Refined
Amendment No. 1 to IS: 882-1956 *gamma*-BHC
Amendment No. 1 to IS: 1053-1957 Dieldrin Water Dispersible Powder Concentrates

Work in Hand

Aldrin, Technical
Aldrin Emulsifiable Concentrates
Aldrin Dusting Powders
Endrin, Technical
Endrin, Emulsifiable Concentrates
Ethylene Dibromide
Methyl Bromide
Household Insecticidal Sprays
Copper Oxy-Chloride
2:4 Dichlorophenoxy Acetic Acid
Equipments Commonly Used for Pest Control Operations
BHC Smoke Generators
Endrin Dusting Powders
Endrin Water Dispersible Powder Concentrates

- x) *Layouts for Regulated Markets* — In the absence of any authoritative publication on the subject, efforts were made for the collection of plans and other details in respect of regulated markets. Further work is continuing.

2.6 Structural and Metals Division

The Structural and Metals Division (SMDC) was established in October 1956 for the formulation of national standards relating to ferrous and non-ferrous metals, foundry, refractories, metal structural engineering, welding, etc. It has been long felt, perhaps rightly so, that the rapid industrialization in India depends, to a considerable extent, on the expansion of steel and metals producing and consuming industries.

Consequent upon the decision of the Government of India to change over to the metric system, the Division finalized three standards relating to preferred dimensions in metric units to ensure that Indian industry derives the maximum advantage from the adoption of the new system. Another important achievement has been the publication of three standards relating to hot rolled structural steel sections, the work pertaining to which was initially undertaken as a part of the Steel Economy Programme at the instance of the Planning Commission. The standardization of these sections has been done in metric units. As a result of collaboration established with the organizations responsible for the setting up of new steel mills and the expansion of the existing mills, details are being finalized for the production of hot rolled structural steel sections in the mills, both in the private and public sectors. The Tata Iron & Steel Co. Ltd. are expected to commence the production of light and medium structural sections, included in these standards, from July 1958. The Indian Iron & Steel Co. Ltd. (IISCO) is commencing the rolling of medium structurals from April 1958; it produced one of the medium Indian standard sections during June 1957. During 1958, the production of metric sizes is expected to be in the region of about 10 percent of the demand. This is expected to progress to about 70 percent by 1960.

2.6.1 The Division Council in its second meeting decided that adequate publicity should be given to the work done by the ISI on the redesign of hot rolled sections through various scientific and technical journals. It also felt that various Ministries of the Government of India, State Governments, industries, manufacturers, fabricators, consumers and the public in general should be acquainted with the recommendations contained in the Steel Economy Report and, in particular, with the new Indian standard hot rolled sections in metric dimensions. It was also agreed that the consumers should be intimated, well in advance, by the various mills about the different sections which would be available to them in the market hereafter.

Since considerable work has been done in India on redesign and standardization of hot rolled structural sections, it was decided to make a proposal to the ISO/TC 17 — Steel, to set up a sub-committee to undertake the study of the work in this field in various countries of the world in order to evolve international standards for facilitating international trade and co-ordinating national standards. It was also decided to make another proposal to ISO/TC 17 for setting up a sub-committee to undertake studies of the activities in various countries in the field of rationalization of carbon and alloy steels for general engineering purposes.

Work on more than 50 new subjects was started; priority to be allotted to the new subjects has been left to the discretion of the Sectional Committees concerned.

2.6.2 A brief account of the activities in specific fields is given below:

- i) *Metal Standards* — Three draft standards relating to preferred dimensions for metal products in metric units were finalized. In this work, the Committee took note of the work done by the ISO. In various countries of the world, a strong opinion has developed in favour of making a clear distinction between standardization of characteristics of products and expression of these characteristics in different systems of units of measurement. This aspect of work is of particular importance to the standardization work in India. The preferred basic sizes standardized in metric system would, it is expected, replace the dimensional standards in inch system which the industry in India has been using for many years.

Since India's trade and industrial relationship are, and will continue to be, with countries using the inch system, consideration was given to the possibility of evolving basic sizes which would give maximum advantage in international trade and also facilitate the changeover of India's industry to dimensional standards in metric system.

Research work on corrosion of light gauge steel structures and corrosion protection of steel transmission towers and steelwork in foundations was initiated. Data regarding the available testing equipment in the various laboratories are being collected.

Work in Hand

Preferred Sizes for Metal Products
 Thicknesses of Sheet and Diameters of Wire
 Sizes of Metal Strip, Sheet, Bars, Flats and Plate for Structural and General Engineering Purposes
 Colour Code for Identification of Metallic Materials
 General Requirements for Supply of Metals and Metal Products
 Classification, Designation and Coding for Steels
 Code of Practice for Classification of Non-Ferrous Scrap Metal and Residues
 Glossary of Terms Relating to Iron and Steel
 Corrosion Protection of Light Gauge Steel Structures
 Performance Tests for Protective Schemes Used in Corrosion Protection of Light Gauge Steel
 Corrosion Protection of Steel Transmission Towers and Steelwork in Foundations

- ii) *Methods of Chemical Analysis* — Draft Indian Standard Methods of Chemical Analysis of Manganese Ore was finalized. This standard is expected to be printed in the course of the next year. A number of draft standards for methods of chemical analysis of soft solder, white metal, brazing solder, iron ore; methods of testing tin coating on tin plates; and methods for determination of arsenic were prepared for circulation for comments.

The National Metallurgical Laboratory (NML) has decided to undertake the preparation and issue of standard certified samples of metals, alloys and ores for use in metallurgical analysis. Under the plan, the NML will serve as a nucleus for the preparation of such standard samples. To help the NML in this work, the Committee concerned has undertaken to bring out a standard for certified samples for metallurgical analysis.

Work in Hand

Revision of IS : 228-1952 Methods of Chemical Analysis of Pig Iron, Cast Iron and Plain Carbon and Low Alloy Steels
 Method of Chemical Analysis of:
 Manganese Ore
 Soft Solder
 White Metal Bearing Alloys
 Brazing Solder
 Iron Ore
 Ferro Manganese
 Tin Ingot
 Printing Metal
 Methods of Testing Tin Coating on Tin Plate
 Methods for Determination of Arsenic
 Methods of Testing Silica Sands
 Certified Samples for Metallurgical Analysis
 Unified Standards for Methods of Chemical Analysis for Groups of Metals and Alloys

- iii) *Methods of Physical Tests* — On the basis of the recommendations finalized by the ISO Technical Committee, ISO/TC 17 — Steel, a number of draft Indian Standards for methods of physical tests are being circulated soon. Preliminary data are being collected regarding ductility and transverse tests.

Work in hand

Tensile Testing of Steel
 Tensile Testing of Steel Sheet and Strip Less than 3 mm and not Less than 0.5 mm Thick
 Tensile Testing of Steel Wire
 Bend Test for Steel
 Simple Bend Testing of Steel Sheet and Strip Less than 3 mm Thick
 Reverse Bend Testing of Steel Sheet and Strip Less than 3 mm Thick
 Brinell Hardness Test for Steel
 Rock-Well Hardness Tests (B & C) Scales for Steel

Vickers Hardness Test for Steel
Charpy Impact Test (U Notch) for Steel
Izod Impact Test for Steel
Ductility Test:
Torsion Test for Wire
Wrapping Test for Wire
Drifting Test for Tubes
Flattening Test for Tubes
Flattening Test for Rivets
Compression Test for Rivet Bars
Transverse Test

- iv) *Methods of Sampling* — A detailed investigation was initiated with a view to making a comparative study of the methods of sampling manganese ores formulated by the ISO and those which are currently being used by industries in India. The results of the study will facilitate formulating the Indian Standard on methods of sampling manganese ores.

Work in Hand

Basic Principles for Determining Sampling Procedures
Sampling of:
Ferro Alloys
Manganese Ores
Foundry Sands
Iron Ores

- v) *Steel* — Draft standards relating to (a) electrically welded mild steel boiler and superheater tubes [for design steam temperature not exceeding 455°C (or 850°F)] and (b) chrome molybdenum steel bars and rods were finalized; the latter is expected to be published as soon as comparative data regarding the yield stress values of the steel bars are available, after carrying out check tests, using both ISI and ASTM standard test specimens.

Six draft Indian Standards for (a) commercial quality structural steel, (b) structural steel tubes, (c) light gauge sheet and strip, (d) mild steel tubes and tubulars, (e) rivet bars for boilers, and (f) wrought steel for boilers have completed the stage of circulation for comments. Printed standards on these subjects are expected to be available soon.

Publications

IS : 961-1957 High Tensile Structural Steel
IS : 1148-1957 Rivet Bars for Structural Purposes
IS : 1149-1957 High Tensile Rivet Bars for Structural Purposes

Work in Hand

Revision of:
IS : 277-1951 Galvanized Steel Sheets (Plain and Corrugated)
IS : 279-1951 Galvanized Iron & Steel Wire for Telegraph and Telephone Purposes
IS : 280-1951 Mild Steel Wire
IS : 412-1954 Expanded Metal (Steel) for General Purposes
IS : 513-1954 Special Qualities of Steel Sheets
IS : 597-1955 Black Plate for Tinning, and Tin-Plate Electrically Welded Mild Steel Boiler and Super-Heater Tubes [for Design Steam Temperature not Exceeding 455°C (or 850°F)]
Chrome Molybdenum Steel Bars and Rods for Aircraft Purposes
Commercial Quality Structural Steel
Light Gauge Structural Quality Hot Rolled Carbon Steel Sheet and Strip
Mild Steel Tubes and Tubulars Suitable for Screwing to IS : 554-1955 Pipe Threads
Rivet Bars for Boilers
Wrought Steel for Boilers, Plain Carbon
Steel Tubes for Structural Purposes
Mild Steel Wire Suitable for Manufacture of Wood Screws

Steel Wire Suitable for the Manufacture of Machine Screws
Transmission Poles
Steel Tubes for Automobile Purposes
Steel Tubes for General Engineering Purposes
Cold Drawn Electrically Welded Mild Steel Boiler and Superheater Tubes
Cold Drawn Seamless Mild Steel Boiler and Superheater Tubes [for Design Steam Temperature not Exceeding 455°C (or 850°F)]
Steel Pipes for Hydraulic Purposes
Steel Tubes for Cycle and Motor Cycle Purposes
Steel Forgings
Steel Bars for Production of Machined Parts
Stainless Steel for Use in the Manufacture of Utensils

- vi) *Structurals* — Considerable progress has been made on the finalization of Part I of the ' Handbook of Properties of Structural Steel Sections '. The Handbook gives detailed worked-out tables for the use of structural engineers, on the sections included in three Indian Standards IS : 808-1957, IS : 1173-1957 and IS : 1252-1958. The Handbook, which will be ready for press in the next few months, is expected to prove a valuable guide to designers and fabricators of steel structures.

In order to evolve improved and more efficient type of piling sections, detailed theoretical investigations are being conducted. As soon as a design for the new type of piling sections is ready, a practical study regarding its efficiency properties will be undertaken at Calcutta and Vishakhapatnam Ports.

Publications

IS : 808-1957 Rolled Steel Beam, Channel and Angle Sections
IS : 1173-1957 Rolled Steel Sections — Tee Bars
IS : 1252-1958 Rolled Steel Sections — Bulb Angles

Work in Hand

Handbook of Properties for Structural Steel Sections
Rolled Steel Piling Sections
Cold Formed Light Gauge Steel Structural Sections
Structural Sections in Aluminium and Aluminium Alloys

- vii) *Structural Engineering* — In order to expedite implementation of the Indian Standard Code of Practice for the Use of Structural Steel in General Building Construction (IS : 800-1956), various departments of the Central Government, Chief Engineers of Public Works Departments of States, Municipalities and City Corporations have been approached for adopting the design principles laid down in the Code in their day-to-day work, with a view to achieving maximum economy in the use of steel. Various technical institutions have also been requested to include the study of this Code in their educational curriculum.

The Indian Standard Code of Practice for Use on Cold Formed Light Gauge Steel Structural Members in General Building Construction has been finalized. The work pertaining to the preparation of design handbook for the use of structural engineering is progressing.

Publications

IS : 804-1958 Specification for Rectangular Pressed Steel Tanks
IS : 806-1957 Code of Practice for Use of Steel Tubes in General Building Construction

Work in Hand

- Code of Practice for Use of Cold Formed Light Gauge Steel Structural Members in General Building Construction
- Rules for Design, Construction, Erection, Testing, Operation, Maintenance and Inspection of Cranes and Hoists
- Code of Practice for Design of Vertical Mild Steel Cylindrical Welded Oil Storage Tanks
- Code of Practice for Use of Steel in Gravity Water Tanks
- Code of Practice for Use of Steel in Gas Storage Tanks
- Code of Practice for the Use of Steel in Overhead Transmission Line Towers
- Code of Practice for Use of Steel in Radio Masts
- Code of Practice for High Strength Bolting in Structures
- Code of Practice for Light Weight Open Web Steel Joist Construction
- Code of Practice for Use of Steel in Temporary Constructions
- Code of Practice for Use of Aluminium Sections in Structures
- Handbooks for Structural Engineers, Typical Design and Drawings regarding:
- 1) Functions of Good Design in Steel Economy
 - 2) Economy of Steel Through Choice of Fabrication Methods
 - 3) Steel Beams and Plate Girders
 - 4) Steel Columns and Struts
 - 5) Roof Trusses in Steel
 - 6) Design of Welded Connections
 - 7) Single Storey Industrial and Mill Type Buildings in Steel
 - 8) Multi-storey Steel Framed Structures for Offices and Residences
 - 9) Steel Transmission Towers
 - 10) Steelwork in Cranes and Hoists
 - 11) Large Span Shed Type Buildings in Steel
 - 12) Use of Tubes as a Structural Material
 - 13) Structural Use of Light Gauge Sections
 - 14) High Strength Bolting in Steel Structures
 - 15) Lightweight Open Web Steel Joist Construction
 - 16) Design of Rigid Frame Structures in Steel
 - 17) Application of Plastic Theory in Design of Steel Structures

- viii) *Pig Iron and Ferro Alloys* — Revision of IS : 224-1950 Pig Iron (Coke) is under progress.

Publications

- IS : 1110-1957 Ferro Silicon
IS : 1111-1957 Spiegeleisen
IS : 1170-1957 Ferro Chromium
IS : 1171-1957 Ferro Manganese

Work in Hand

- Revision of IS : 224-1950 Pig Iron (Coke)
- Ferro Phosphorus
Ferro Titanium
Ferro Vanadium
Ferro Tungsten
Ferro Molybdenum
Silico Manganese

- ix) *Cast Iron and Malleable Cast Iron* — Based mainly on the ISO Recommendation R 13 Cast Iron Pipes, Special Castings and Cast Iron Parts for Pressure Main Lines, three draft standards relating to (i) centrifugally cast (spun) iron pipes, (ii) vertically cast iron pipes, and (iii) cast iron fittings for pressure main lines were circulated for comments.

Publication

- IS : 1230-1957 Cast Iron Rain Water Pipes and Fittings

Work in Hand

- Amendment No. 1 to IS : 210-1950 Grey Iron Castings Centrifugally Cast (Spun) Iron Pipes for Pressure Main Lines
- Cast Iron Fittings for Pressure Main Lines
- Vertically Cast Iron Pipes for Pressure Main Lines
- Malleable Cast Iron Pipe Fittings
- Cast Iron Spigot and Socket Soil Waste and Ventilating Pipes and Fittings

- x) *Aluminium and Aluminium Alloys* — Draft Indian Standards relating to aluminium

shots for use in iron and steel manufacture; corrugated aluminium sheets; wrought aluminium alloys, bolt and screw stock; and extruded round tube and hollow sections, have been finalized for publication.

Work in Hand

Revision of:

- IS : 20-1953 Cast Aluminium for Utensils (*Revised*)
IS : 21-1953 Wrought Aluminium for Utensils (*Revised*)
IS : 23-1950 99 Percent Aluminium Notched Bars and Ingots for Remelting for Aircraft Purposes
IS : 30-1953 Aluminium Coated High-Tensile Aluminium Alloy Sheets and Coil for Aircraft Purposes
IS : 202-1950 Aluminium Alloy Ingots and Castings for Aircraft Purposes
IS : 617-1955 Aluminium and Aluminium Alloy Ingots and Castings for General Engineering Purposes
- Aluminium Shot for Use in Iron and Steel Manufacture
Corrugated Aluminium Sheet
Wrought Aluminium and Aluminium Alloys, Bolt and Screw Stock
Wrought Aluminium and Aluminium Alloys, Extruded Round Tube and Hollow Sections
Aluminium Utensils
Code of Practice for Die Casting Aluminium Alloys
Aluminium Master Alloys
Aluminium Re-draw Bars for Conductors
Structural Aluminium Alloys

- xi) *Copper and Copper Alloys* — The draft revision of IS : 191-1950 Specification for Copper and the draft Specification for Brass Ingot for Gravity Die Castings and Brass Die Castings (Including Naval Brass) were finalized.

It was also decided that no separate standards are necessary for non-ferrous non-magnetic materials, and that the requirements for these may be specified in the existing standards.

Work in Hand

Revision of:

- IS : 28-1950 Phosphor Bronze Ingots and Castings
IS : 191-1950 Copper
IS : 288-1951 Copper Rods for Boiler Stays
IS : 291-1951 Naval Brass Rods, Bars and Sections
IS : 292-1951 Brass Ingots and Castings
IS : 304-1952 High Tensile Brass Ingots and Castings
IS : 305-1952 Aluminium Bronze Ingots and Castings
IS : 306-1951 Tin Bronze Ingots and Castings
IS : 318-1952 Leaded Tin Bronze Ingots and Castings
IS : 319-1951 Free Cutting Brass Rods and Bars
IS : 320-1951 High Strength Brass Rods, Bars and Sections
IS : 407-1953 Brass Tubes for General Purposes
IS : 410-1953 Rolled Brass Plate, Sheet, Strip and Foil
- Brass Ingot for Gravity Die Castings and Brass Die Castings (Including Naval Brass)
- Leaded Brass Strips Used in the Manufacture of Parts for Instruments
- Phosphor Bronze Sheets, Rods and Wire
- Brass Sheet for the Manufacture of Utensils
- Copper Sheet and Strip
- Copper Sheet for the Manufacture of Utensils
- Copper Tubes for General Purposes
- Solid Drawn Copper and Copper Alloy Tubes
- Bronze for Railways
- Code of Practice for the Tinning of Brassware
- Code of Procedure in Inspection of Copper Base Alloy Sand Castings

- xii) *Lead, Zinc, Tin, Antimony and Their Alloys* — The draft revision of IS : 211-1950 Specification for Antimony was finalized and six draft standards relating to (a) zinc sheet and strip, (b) lead cable alloy, (c) code of practice for protective coatings of zinc base alloys, (d) printing metals, (e) chemical lead, lead sheets and

pipes for chemical purposes, and (f) code of practice for the manufacture and use of zinc base die castings were approved for circulation.

Work in Hand

Revision of:

- IS : 25-1950 Antifriction Bearing Alloys
- IS : 193-1956 Soft Solder (*Revised*)
- IS : 211-1950 Antimony
- IS : 404-1952 Lead Pipes for Other Than Chemical Purposes
- IS : 405-1952 Lead Sheets for General Purposes
- Chemical Lead, Lead Sheets and Pipes for Chemical Purposes
- Zinc Sheet and Strip
- Antimonial Lead, Rolled and Extruded
- Code of Practice for the Manufacture and Use of Zinc Base Die Castings
- Printing Metal
- Lead Cable Alloy
- Protective Coatings for Zinc Base Alloys
- Nickel and Nickel Alloys
- Zinc Base Alloys Other than Die Castings
- Code of Practice for Hot Dip Galvanizing and Zinc Impregnation

xiii) *Precious Metals* — The draft Indian Standard for Gold Alloys is under circulation for comments. Besides, certain technical data were collected for preparing a standard on platinum, carat gold, and solders for use with gold and silver wares.

Work in Hand

- Gold Alloys
- Fine Gold
- Fine Silver
- Platinum
- Carat Gold
- Solder for Use with Goldwares
- Solder for Use with Silverwares

xiv) *Welding General* — The draft standard relating to filler rods for gas welding is in the advance stage of finalization, while a draft standard relating to hose connection for welding and cutting appliances was issued for comments.

Publications

- IS : 812-1957 Glossary of Terms Relating to Welding and Cutting of Metals
- IS : 817-1957 Code of Practice for Training and Testing of Metal Arc Welders
- IS : 818-1957 Code of Practice for Safety and Health Requirements in Electric and Gas Welding and Cutting Operations
- IS : 1179-1957 Specification for Equipment for Eye and Face Protection During Welding
- IS : 1181-1957 Qualifying Tests for Metal Arc Welders (Engaged in Welding Structures Other than Pipes)
- IS : 1182-1957 General Recommendations for the Radiographic Examination of Fusion Welded Joints

Work in Hand

- Filler Rods for Gas Welding
- Hose Connections for Welding and Cutting Appliances
- Valve Fittings for Compressed Gas Cylinders
- Spot Welding Electrodes
- $\frac{1}{2}$ Percent Molybdenum Steel Electrodes (Covered) for Metal Arc Welding
- Covered Electrodes for the Metal Arc Welding of Medium High Tensile Structural Steel
- Filler Rods and Wires for Inert-Gas Arc Welding
- Code of Practice for Training of Oxy-Acetylene Welders Engaged in Oxy-Acetylene Welding of Mild Steel
- Qualifying Tests for Welders Engaged in Welding Pipelines
- Procedure Code for Electric Arc Welding
- Code of Practice for Inspection of Welds
- Welding Rods and Electrodes for Surfacing Work
- Code of Practice for Argon Arc Welding of Aluminium and Stainless Steel
- Assessment of Welds by Radiographic Examination
- Code of Practice for Welding of Pressure Vessels
- Code of Practice for Use of Welding in Weldments (Built Up Sections) for Use in Place of Steel Castings

Handbook for Welding Inspectors and Welding Supervisors

xv) *Structural Welding* — Considerable progress was made regarding the formation of a comprehensive Handbook for the use of metal arc welders. In addition, a draft code of practice for seam welding in mild steel was circulated for comments.

Publication

- IS : 819-1957 Code of Practice for Resistance Spot Welding for Light Assemblies in Mild Steel

Work in Hand

- Oxy-Acetylene Welding in Mild Steel
- Code of Practice for Seam Welding in Mild Steel
- Class I Metal Arc Welding of Steel Pipelines and Pipe Assemblies for Carrying Fluids
- Code of Practice for Use of Welding in Structures Subject to Dynamic Loading—Bridges
- Code of Practice for Welding in Tubular Construction
- Welding Handbook for Use of Welding Engineers
- Handbook for Welders

xvi) *Manganese Ore*

Work in Hand

Revision of:

- IS : 372-1952 Manganese Ore, Battery Grade
- IS : 373-1952 Manganese Ore, Metallurgical Grade

xvii) *Foundry* — The draft Indian Standard Specification for Foundry Moulding Boxes was finalized for printing, and two drafts relating to (a) Graphite for foundry facing materials, and (b) wooden pattern equipment for foundries were prepared for circulation.

Work in Hand

- Foundry Moulding Boxes
- Graphite for Foundry Facing Materials
- Wooden Pattern Equipment for Foundries
- Basic Characteristics for Sands for Different Moulding Purposes
- Recommended Methods of Testing for Foundry Sands
- Recommended Characteristics for Binding Materials (Bentonite)
- Recommended Methods of Testing of Binding Materials Silica Sands

xviii) *Refractories* — Draft Revisions of IS: 6-1953, IS: 7-1953, IS: 8-1953 and IS: 484-1953 were finalized while the Revision of IS: 483-1953 was deferred pending the result of tests being carried out by Naval Headquarters.

On the basis of the investigations made, it has been decided to formulate a standard specification for graphite crucibles; detailed work has been started in this regard. It was also arranged to conduct experimental investigations to establish a suitable correlation between the British Refractory Research Association's method and the one prescribed in IS: 485-1953 Methods of Sampling and Testing of Refractory Materials, for spalling test for refractories, with a view to the including the former as an alternative method in IS: 485-1953. The Central Glass & Ceramic Research Institute was requested to conduct tests on both Indian and foreign refractory bricks for collecting data in connection with the formulation of an Indian Standard on tank blocks for the glass industry.

Work in Hand

Revision of:

- IS : 6-1953 Moderate Heat Duty Fireclay Refractories, Group 'A'

- IS: 7-1953 Moderate Heat Duty Fireclay Refractories, Group 'B'
- IS: 8-1953 High Heat Duty Fireclay Refractories
- IS: 483-1953 Fireclay Refractories for Oil-Fired Boiler Furnaces of Naval Ships
- IS: 484-1953 Silica Refractories for General Purposes
- IS: 485-1953 Methods for Sampling and Testing of Refractory Materials

Methods for the Direct Determination of Alumina in Refractory Materials

- Mortar for Laying Silica Bricks
- Classification of Clays for Ceramic Industry
- Dimensional Standardization of Refractories
- Preferred Sizes for Firebricks
- Ladle Refractories
- Casting Pit Refractories
- Tank Blocks
- Insulating Firebricks
- Graphite Crucibles

- xix) *Alloy Steels and Special Steels* — Considerable data were collected from the engineering industry in India concerning the varieties and types of carbon and alloy steels which are presently being used by them.

Work in Hand

Rationalization of Carbon and Alloy Steels

2.7 Electrotechnical Division — This Division, which was established in March 1957, has been laying considerable emphasis on the preparation of standards for the assistance of protected industries. In this respect mention may be made of the standard specifications for distribution transformers up to 100 kVA and 11 kV, and for bayonet lampholders.

At the instance of ISI, the International Electrotechnical Commission, IEC, set up a new Technical Committee, IEC/TC 43, to formulate international recommendations for domestic and industrial type electric fans, and allotted its secretariat to India.

2.7.1 The second meeting of the Electrotechnical Division Council (ETDC), held on 26 March 1958, accepted 12 new subjects for formulation of standard specifications, which include plastic sleeves for covering electric cables (aircraft), mica-nite, PVC insulation and sheath for electric cables, signal batteries, industrial fans, and scientific instruments used in laboratories.

At its first meeting held on 17 May 1957, the Standing Working Committee of the Division (SWCET) felt that the IEC, in principle, should deal with only such aspects of internal combustion engines as are concerned with electrical generation; other aspects could be dealt with by the ISO to avoid overlapping of activity.

2.7.2 A brief account of the work accomplished by the Division is given below:

- i) *General Electrical Standards* — The Indian Standard Recommended Voltages and Frequency for AC Transmission and Distribution Systems (IS: 585-1954) laid down standard values of nominal voltages as 230 volts for three-phase system, since these were the most common declared voltages throughout the country at that time. At the international plane, however, the IEC has adopted two sets of voltages, namely (a) 220 volts single-phase and 220/380 volts three-phase, and (b) 240 volts single-phase and 240/415 volts three-phase. In view of the obvious economic advantages, and also to fall in line with the international practice, it was decided, in consultation with the

Central Water & Power Commission, Chief Engineers of important State Governments and Electricity Supply Undertakings, to recommend the adoption of 240 volts single-phase and 240/415 volts three-phase as Indian Standard in place of 230 volts single-phase and 230/400 volts three-phase, respectively.

Work in Hand

Amendment to IS: 585-1954 Recommended Voltages and Frequency for A.C. Transmission and Distribution Systems

Nomenclature
Graphical Symbols

- ii) *Electrical Conductors and Accessories* — A specification for paper-insulated or lead-alloy sheathed cables for electric supply and a code of practice for the installation, operation and maintenance of such cables were finalized. Steps are being taken for changing over the sizes of conductors and cables to the metric system.

Work in Hand

Revision of IS: 282-1951 Hard-Drawn Copper Solid and Stranded Circular Conductors for Overhead Power Transmission Purposes (*Tentative*)

Revision of IS: 396-1953 Bare Annealed Copper Wire for Electrical Machinery and Apparatus (*Tentative*)

Revision of IS: 398-1953 Hard-Drawn Stranded Aluminium and Steel-Cored Aluminium Conductors for Overhead Power Transmission Purposes (*Tentative*)

Trolley and Contact Wires for Electric Traction

Hard-Drawn Cadmium Copper Solid and Stranded Circular Conductors

Hardware Items for Transmission Lines

Enamelled Round Copper Wire

Paper Covered Rectangular Copper Conductors for Transformer Windings

Revision of IS: 482-1953 Reels for Covered, Solid, Round Electrical Winding Wires

Rubber-Insulated Flexible Trailing Cables for Quarries and Metalliferous Mines

Rubber-Insulated Flexible Trailing Cables for Use in Coal Mines

PVC Insulated (Heavy Duty) Cables for Electricity Supply and Control Purposes for Working Voltages Up to and Including 11 kV

Revision of IS: 434-1953 Rubber-Insulated Cables and Flexible Cords for Electric Power and Lighting (for Working Voltages Up to and Including 11 kV)

Amendment to IS: 693-1955 Varnished Cambric Insulated Cables for Electricity Supply (*Tentative*)

Paper-Insulated Lead-Sheathed Cables for Use in Mines

Braided Cables with Copper Conductors for Overhead Transmission

Vulcanized Rubber Insulation and Sheath for Electric Cables

Polythene Insulated and PVC Sheathed Cables Up to 650 V

Polythene and PVC Insulation for Cables

- iii) *Electrical Insulators and Accessories* — At the instance of the Posts & Telegraphs Department, revision of IS: 283-1951 Porcelain Insulators for Telegraph and Telephone Lines was taken up. A draft standard for insulator stalks for telegraph and telephone lines was approved for circulation.

Work in Hand

Revision of IS: 283-1951 Porcelain Insulators for Telegraph and Telephone Lines

Insulator Stalks for Telegraph and Telephone Lines

General Requirements and Methods of Test for Porcelain Insulators for Overhead Lines with a Nominal Voltage Below 1000 volts

Pins for Insulators

Code of Practice for Insulators

- iv) *Electrical Plant and Switchgear* — The draft Indian Standard Specification for Outdoor

Type Three-Phase Distribution Transformers Up to 100 kVA 11 kV, in which the Tariff Commission and the States had shown keen interest, was finalized and is under print.

Work in Hand

Bus Bars and Bus Bar Connections in Air, Oil or Compound
HRC Fuses
Revision of IS: 325-1956 Three-phase Induction Motors for Industrial Use
Standard Dimensions of Three-phase Induction Motors Loom Motors
Hollow Shaft Motors
Small AC and Universal Electric Motors with Class 'A' Insulation
Outdoor Type Three-phase Distribution Transformers Above 100 kVA 11 kV
Recommendations on Switchgear for Use in Tropics
Classification of Insulating Materials
Motor Control Gear
General Requirements for Electrical Equipment of Machine Tools
Code of Practice for Installation and Maintenance of Transformers
Code of Practice for Installation and Maintenance of Switchgear
Earth Leakage Protection in Mines and Similar Other Purposes

- v) *Electric Fans* — A Research Panel was set up to study tropic-proofing and other specialized problems of electric fans.

Publication

IS: 1169-1957 Pedestal Type Electric Fans

Work in Hand

Revision of IS: 374-1951 Electric Ceiling Fans
Revision of IS: 555-1955 Table Type Electric Fans
Air Circulator Type Electric Fans
Blowers
Exhaust Fans
Ventilating Fans
Carbon Brushes for Fans

- vi) *Electrical Instruments and Meters* — A draft Standard for AC Whole-Current Electricity Meters (Part III of IS: 722) was circulated for comments.

Publication

IS: 1248-1958 Indicating Instruments

Work in Hand

AC Electricity Meters (Part III of IS: 722)
Amendment to IS: 722-1955, Parts I & II
Pyrometers
Electrical Instruments Commonly Used in Laboratories

- vii) *Electrical Accessories* — Though a number of Indian Standards for domestic electrical appliances were formulated and published a few years back, one very often came across such appliances of a very poor quality. This was a matter of grave concern to the consumer, as it involved the safety of men and property. Since manufacture of such equipment is mostly in the hands of small entrepreneurs, an endeavour was made, directly and through the Small-Scale Service Institutes, to bring about an awareness among the manufacturers on the need for improving the quality of their products. Attempts were also being made to draw the attention of the Government to enact suitable legislation to prevent the marketing of unsafe electrical equipment.

Publications

IS: 418-1957 Tungsten Filament General Service Electric Lamps (*Revised*)
IS: 1087-1957 Single Pole Tumbler Switches
IS: 1119-1957 Reversible Type Two-Pin Plugs and Socket Outlets with Earthing Connections

IS: 897-1957 Tungsten Filament Electric Lamps for Railway Rolling Stock
IS: 1285-1958 Bayonet Lampholders

Work in Hand

Soldering Irons
Electric Toasters
Electric Sauce Pans
Electric Call Bells and Buzzers
Safety Requirements for Domestic Electrical Appliances
Three-Pin Plugs and Sockets
Bed Switches
Iron-Clad Switches
Composite Units of Switches and Fuses for Use in Domestic Circuits and Industrial Systems
Inductive Type Ballasts for Fluorescent Lamps
Switch Board Lamps
Automobile Lamps
Dial Lamps
Steel Conduits

- viii) *Radio Equipment* — In this field, draft Indian Standard Code of Safety Requirements for Mains Operated Amplifiers, and Methods of Measurements on Audio Amplifiers were circulated; while the work relating to the evolving of prototype community radio receivers was taken up.

Publication

IS: 616-1957 Code of Safety Requirements for Mains-Operated Radio Receivers

Work in Hand

Ceramic Capacitors
Silver Mica Capacitors
Wave Band Switches
Wire Wound Resistors
Aerial Wires, Insulated and Bare Copper
Hook-up Wires for Radio Equipment
Electrolytic Condensers
Volume Controls
Mechanical Parts for Receivers
'Standard' Community Radio Receivers
Receivers for School Broadcasting
Communication Receivers
Revision of IS: 705-1955 Dry Battery-Operated Community Radio Receivers (*Tentative*)
Revision of IS: 706-1955 AC Mains-Operated Community Radio Receivers (*Tentative*)
Revision of IS: 1036-1957 6-Volt Accumulator-Operated Community Radio Receivers
Vibrator Transformers
Methods of Test for IF Transformers
Methods of Test for RF Coils
Interstage Transformers and Microphone Transformers
Interference Suppression Devices
Revision of IS: 589-1954 Procedure for Basic Climatic Tests for Electronic Components (*Tentative*)
Mechanical Durability Tests for Electronic Components
Climatic Tests for Complete Equipment
Code of Safety Requirements for Mains-Operated Amplifiers
Methods of Measurements on Audio Amplifiers
Minimum Performance Requirements for PA System Amplifiers
Acoustical Terminology
Code of Practice for Installation of Public Address Amplifier Systems
Microphones
Tape Recorders

- ix) *Mica* — The two tentative standards, namely IS: 13-1949 Methods for Grading Processed Mica and IS: 14-1949 Classification of Processed Muscovite Mica, published in 1949, were split up into:

- a) Definitions of Mica Terms,
- b) Methods of Grading and Classification of Muscovite Mica, Blocks, Thins and Condenser Films, and
- c) Methods of Grading and Classification of Muscovite Splittings.

Consequently, the two old standards, namely IS: 13-1949 and IS: 14-1949, were withdrawn.

Publications

IS: 1174-1957 Definitions of Mica Terms
IS: 1175-1957 Methods of Grading and Classification of Muscovite Mica Blocks, Thins and Films

Work in Hand

Methods of Grading and Classification of Muscovite Splittings

- x) *Primary Cells and Batteries* — The draft Revisions of IS: 203-1950, IS: 267-1951 and IS: 268-1951 were approved for circulation.

Publication

IS: 1025-1957 Glossary of Terms for Primary Cells and Batteries

Work in Hand

Revision of IS: 203-1950 Leclanché Type Dry Cells and Batteries for Flash Lamps
Revision of IS: 267-1951 Leclanché Type Inert Cells
Revision of IS: 268-1951 Leclanché Type Sack Cells

- xi) *Secondary Cells and Batteries* — A draft standard for Lead-Acid Storage Batteries for Motor Vehicles, Heavy Duty, was finalized; and arrangements were made to initiate the work on aircraft batteries and signal batteries.

Publications

IS: 1145-1957 Lead-Acid Storage Batteries for Motor Cycles
IS: 1147-1957 Glossary of Terms for Secondary Cells and Batteries

Work in Hand

Lead-Acid Storage Batteries (Heavy Duty), for Motor Vehicles
Revision of IS: 395-1952 Lead-Acid Storage Batteries for Motor Vehicles, Light Duty
Hard Rubber Containers for Lead-Acid Accumulators
Lead-Acid, 12 Volt, Aircraft Storage Batteries
Lead-Acid Storage Batteries for Signal Equipment
Revision of IS: 541-1954 Stationary Accumulators

- xii) *Electroplating* — Two draft standards covering copper, nickel and chromium electroplated coatings, and commercial silver plating were finalized.

Work in Hand

Cadmium Plating
Oxy Copper Finishes
Zinc Plating
Electro-tin Plating
Hard Chromium Plating
Brass Plating
Industrial Silver Plating
Lead Plating
Anodizing
Bonderizing
Code of Practice for Electroplating

- xiii) *Illumination Engineering* — Panels have been constituted to prepare draft standards for different types of lighting fittings.

Work in Hand

Industrial Lighting Fittings
Commercial Lighting Fittings
Decorative Lighting Fittings
Street Lighting Fittings
Flood Lighting Fittings
Aerodrome Lighting Fittings

2.8 Certification Marks and Implementation Division — The Institution has been authorized to issue licences, under an Act of the Indian Parliament (ISI Certification Marks Act, 1952), to manufacturers for stamping their products with the ISI standard mark, certifying that the marked

goods conform to the relevant Indian Standard, and conveying to the consumer a sort of a third-party guarantee of the quality of goods he is purchasing. It has been experienced that this promotes not only consumer satisfaction but also the export trade.

Certification marking made further progress during the third year of its operation; the number of licences granted being 75, covering eleven articles, a list of which is given in Appendix 4.4. Enquiries received by the Institution show that there is a general desire on the part of manufacturers to have some control over the quality of their production, and that they are anxious to get licences for the use of the ISI certification mark. Quite frequently, delay is caused in the granting of licences, because, as the investigations of the Institution reveal, the quality of goods does not always conform to the relevant Indian Standard in all respects, and testing facilities in factories are not up to the desired standard. However, the main hindrance to the extension of certification marking is the difficulty in giving any price preference for certified goods. The Directorate General of Supplies & Disposals, which is the main purchasing organization of the Government of India, finds that it is not possible to give a price preference, but when other things were equal, DGS&D is prepared to give preference to certified goods in accepting tenders for supplies.

There is not, as yet, sufficient appreciation in the general market for goods of quality. It is necessary to create consciousness for quality so that the demand for certified goods comes from consumers. It has been proposed that the Institution should take an active part in the formation of consumers' associations, so that it may be possible to infuse 'standards consciousness' among the consumers through these associations.

The Tariff Commission have found it necessary to recommend, time and again, to their manufacturers of commodities, which come under protection, that production should be in accordance with Indian Standards. The Commission, in their latest report on the continuance of protection to cotton and hair beltings industry, as also to the bare copper conductors, aluminium conductors and steel reinforced industry, recommended, *inter alia*, that the manufacturers of these products should approach the ISI for the application of certification marks to their products. It may be recalled that, as mentioned in last year's report, on the recommendation of the Tariff Commission, the Government of India have imposed a ban on the export of aluminium utensils which do not bear ISI certification marks.

2.8.1 The Certification Marks Advisory Committee (CMAC), which was set up to explore ways and means to popularize the certification mark and to advise the ISI on other matters pertaining to certification marking, in its second meeting, has recommended that:

- i) The ISI Directorate should enquire from all the Directors of Industries whether they would be prepared to spare some time for furtherance of the certification marks scheme by being members of the CMAC and report the progress at the next meeting of the CMAC.
- ii) ISI and DGS&D should prepare some ground for introducing the ISI certification



marks scheme for steel and agricultural implements and, when some progress has been made in this connection, Shri P. H. Kutar of the Tata Iron & Steel Co. Ltd., Jamshedpur, should be invited for discussions for evolving a suitable scheme.

- iii) ISI should expedite formulation of Indian Standards for such engineering items as are of particular importance for export purposes and for which published Indian Standards are not available at present.

2.8.2 A brief description of the work done by the Division during the year under report is given below:

- i) *Enquiries for Certification Marks* — In all 140 firms made enquiries about ISI certification marks, and many ultimately sent their applications for the grant of licences. The table below shows the field of their activity:

a) Engineering	16
b) Building	62
c) Textile	1
d) Chemical	27
e) Agricultural and Food Products	16
f) Structural and Metals	15
g) Electrotechnical	3
Total	140

- ii) *Applications for the Grant of Licences* — In all, 72 new applications were received for the grant of licences for the use of ISI certification mark, thus raising the total number of applications to 210. These applications cover engineering, chemical, metallurgical, agricultural, electrotechnical and building materials. The final disposal of these applications is as follows:

a) Licences granted	75
b) Licences revised	2
c) Action deferred at the request of applicants	35
d) Applications withdrawn	5
e) Applications under consideration	93
Total	210

iii) *Licences*

- a) *Licences granted* — In all, 49 new licences for the use of ISI certification mark on goods, conforming to relevant Indian Standards, were granted. The names of licensees and the products for which licences were granted are given in Appendix 4.5.
- b) *Licences renewed* — Under Regulation 8(2) of the ISI Certification Marks Rules, 1955, 24 licences were renewed (see Appendix 4.6).
- c) *Action on other applications* — Action on 35 applications (see Appendix 4.7) was deferred, at the request of the applicants, mainly for the same reasons as given in the last year's report. The question of according price preference to certified goods for Government purchases was

pursued further with the DGS&D and the representatives of the Ministries of Commerce & Industry and Works, Housing & Supply. The DGS&D was prepared to give preference to quotations from tenderers whose goods bore ISI Mark, other things being equal, including the terms of delivery and the price of goods. It was further agreed that the extent of inspections in the case of the ISI certified goods could, in principle, be reduced after DGS&D had some experience with the licensees.

- iv) *Appointment of Competent Authority* — The Chief Industrial Adviser, Ministry of Commerce & Industry (Development Wing) was declared as competent authority in relation to plywood, including plywood for tea chests and commercial and moisture-proof plywood, for the whole of India except for the State of Jammu & Kashmir, subject to the condition that the plywood shall be inspected in accordance with the procedure laid down by the Development Wing in consultation with the ISI. He has also been empowered to make such inspections and take such samples of any material or substance, as may be necessary, to see that any plywood in relation to which the standard mark has been used conforms to the relevant Indian Standard, and to ensure that the standard mark is not improperly used in relation to any plywood with or without licence. It may not be out of place to mention that out of 49 licences, granted during the year, 24 licences were for tea-chest plywood panels.

- v) *Gazette Notifications Issued* — As required under the ISI Certification Marks Act, 1952, and the Rules and Regulations framed thereunder, 52 gazette notifications were issued whenever an Indian Standard was established and cancelled, or whenever amendments, errata and corrigenda slips to the published Indian Standards were issued. Thirtyseven gazette notifications were also issued relating to the grant and renewal of licences, and for the purpose of the publication of standard marks and marking fees for various articles covered by published Indian Standards.

- vi) *Testing Facilities* — As indicated in last year's report, a provisional list of 41 laboratories was prepared for the testing of products in connection with the working of certification marks. Three more laboratories have been so approved, bringing the total number of laboratories to 44 (see Appendix 4.8).

- vii) *Implementation of Indian Standards* — Voluntary implementation of Indian Standards by manufacturers and consumers has shown a marked progress. During the last year, as many as 171 Indian Standards were formally adopted by one or more of the purchasing organizations of the Central Government, a detailed list of which is given in Appendix 4.9.

The total adoptions number 838 against 970 printed standards, i.e. 80 percent of the

printed standards. The names of the organizations adopting these Indian Standards have already been listed in last year's report. Further, steps were intensified for promoting the adoption of Indian Standards, as a result of which an assurance was forthcoming from the industry in general, and from consuming departments and purchasing organizations of the Government in particular, regarding the adoption of Indian Standards in their manufacturing and purchase programmes.

2.9 Statistical Section — A brief account of the work done by the Statistical Section during the period is given below.

2.9.1 Introduction of SQC Concepts in Standards — All the draft standards sent out during the year for wide circulation were scrutinized by this Section with a view to introducing the SQC concepts wherever possible. In particular, sampling clauses which form an essential part of the material specifications for determining conformance of a material to specified requirements, were carefully examined and suitable recommendations were made in 90 cases to improve them by making them statistically sound. The recommendations were accepted in many cases by the technical committees concerned.

2.9.2 Collection and Analysis of Data — Collection of operational data while the products are being manufactured is very useful, while evaluating the requirements to be specified in the standard and while formulating economical sampling schemes to determine the conformance of the product to the requirements of the standard. To initiate matters in this direction, several principal manufacturing concerns were approached for supplying the data and their response is awaited. Experimental data collected by other technical divisions of ISI were also statistically analysed to draw relevant inferences.

2.9.3 Committee Work — The Methods of Sampling Sectional Committee (SMDC 4), set up by the Structural and Metals Division Council (SMDC), held its first meeting on 4 November 1957 and set up four panels to formulate Indian Standards on the following subjects:

- a) Basic principles for determining sampling procedures,
- b) Sampling of Ferro-alloys,
- c) Sampling of Foundry Sands,
- d) Sampling of Iron Ores.

The first three panels progressed in their work and prepared preliminary drafts.

A new Sectional Committee on Sampling (TDC 33) has been set up, under the Textile Division Council, for advising other sectional committees of the Textile Division Council on statistical matters in general and on sampling problems in particular. As reported last year, the Subcommittee on Sampling of Textile Materials (EC 3: 4) had prepared a draft standard for methods of sampling of cotton yarn for the determination of physical characteristics on the basis of data collected by it, and had also collected data on cotton fabrics for the preparation of a standard on the sampling of cotton fabrics, when it was dissolved. The work of TDC 33 is expected to be facilitated by the spade work already done by EC 3: 4.

To continue the work hitherto done by the Subcommittee on Coal Sampling (EC 3: 5), which has since been dissolved, a new Subcommittee on the Sampling of Coal and Coke (CDC 14: 1) has been set up under the Solid Mineral Fuel Sectional Committee (CDC 14) of the Chemical Division Council.

2.9.4 Certification Marks Scheme — During the year under review, schemes of inspection necessary for issuing licences to use the ISI Certification Mark were recommended in about 40 cases. The routine inspection data collected on the basis of these schemes by the licensees was also examined statistically to find out whether the goods conformed to the relevant Indian Standards. In those cases where non-compliance to the specification requirements was noticed, the fact was brought to the notice of the Marks Division for necessary action. Further check on the marking of only conforming goods is maintained, by testing random samples from the factory's stock of marked goods, as well as from the stock in the open market, and scrutinizing the test results statistically.

2.9.5 Collaboration with other Scientific Bodies — Following the recommendations of the Planning Commission for collaboration in scientific work between various organizations, collaboration of ISI with the Indian Council of Agricultural Research (ICAR) and with the Indian Statistical Institute is being sought in the field of standardization, particularly in propagating the use of statistical techniques in solving the problems arising in Industry and Commerce. As a result, the ICAR has agreed to consider introducing 'Standardization' as a subject of study in the syllabus for the training courses being organized by them.

2.9.6 Indian Standards on Conversion Factors and Tables — At the request of the Executive Council of the Association of Principals of Technical Institutions (India), the Statistical Section has undertaken the preparation of an Indian Standard on Guide to Metric System for the use of students of technical institutions. The Section has also under preparation a new form of slide table, for the inter-conversion of non-metric and metric values, which, when made available, is expected to prove a handy device for use by scientists, engineers, technologists, businessmen and others.

2.10 Sectional Committees under the Executive Committee — Subjects falling within the purview of a technical division are dealt with by its own appropriate technical committees; those which are of general interest to all the divisions are allotted to sectional committees under the direct authority of the Executive Committee.

2.10.1 A brief account of the work of such committees is given below:

2.10.1.1 Documentation Sectional Committee, EC 2 — The Committee finalized for publication the draft Indian Standard Proof Corrections for Authors and Printers, on which work had been initiated by the Books and Periodicals Subcommittee last year. The receipt of a large number of constructive comments on the draft enabled the Committee to replace all linguistic terms by non-linguistic symbols. This was done with a view to providing uniform symbols for use in all regional languages of the country as also in English. For this reason the standard, which is expected to be

published early next year, may provide the basic working paper for formulating an international recommendation by ISO/TC 46 — Documentation which has this subject already on its programme of work. The Committee also finalized the draft Indian Standard for Alphabetical Indexes, and circulated the draft Indian Standard Glossary of Cataloguing Terms.

With regard to the draft Indian Standard Catalogue Code, the Committee decided to defer its consideration for the next meeting, by which time Dr. Ranganathan's book on Catalogue Code, from which much help could be obtained, and which was under print, would have been published.

2.10.1.2 ISI Directorate Standards Sectional Committee, EC 5—The name of this Committee was recently changed from 'Style Manual Sectional Committee' to 'ISI Directorate Standards Sectional Committee', and its scope was correspondingly broadened. It finalized the revision of IS:12-1949. The experience gained during the last decade in the use of the standard necessitated a large number of changes, which have been incorporated in the revised standard, the title of which has been changed to 'Guide for Drafting Indian Standards'.

3. STANDARDIZATION ABROAD AND AT INTERNATIONAL LEVEL

3.1 Relations with Other National Standards Authorities—The cordial and co-operative relations between the ISI and the various standardization bodies of the commonwealth and other countries were maintained and deepened. This helped in many ways the progress of standards programme at the international level.

Nine hundred and twenty eight draft standards and fiftyone proceedings of first meetings were received from overseas national standards bodies during the year under report. Several of these draft standards were sent to ISI Committee members and others concerned with the subject matter of the drafts for comments. Later, these were passed on to the national standards bodies. In the same period, the ISI sent 202 draft Indian Standards and proceedings of 26 first meetings to other national bodies.

3.2 International Organization for Standardization (ISO)—The Indian Standards Institution, as a founder member of the ISO, continued lending its wholehearted support to the furtherance of the work of the ISO. A good amount of expansion of India's external trade is envisaged in the Second Plan, and the importance of the attention paid by the ISI, since its very inception, to the international efforts at co-ordinating all national standards could hardly be over-emphasized.

India has been a member of the Governing Council of ISO since its inception and has been again elected for another term of three years up to December 1960. India, through ISI, participates in 58 of its 87 technical committees, and holds the secretariat of three technical committees and one subcommittee, including ISO/TC 88 — Pictorial Marking of Handling Instructions for Goods which has been set up recently.

Various meetings of the ISO Technical Committees held during the year, along with the names

of the Indian delegates who attended these meetings, are given in Appendix 4. 10. In addition, Dr. Lal C. Verma, Director, ISI, also attended the annual meetings of the ISO Council and other bodies set up by it. During the period intervening between different meetings, he took the opportunity to pay visits to overseas standards bodies in Paris, Belgium, Moscow and Stockholm. As a result of his personal contacts with the leaders of the French and Belgian National Committees of the IEC in Paris and Brussels, he was successful in fixing the 1960 annual meeting of the IEC in Delhi.

The general impression, obtained from these visits and contacts, was that many standards organizations were finding it necessary to expand their facilities to meet the growing demand for new standards and to provide means for certification marking and informative labelling.

Detailed reports of various delegations on the progress made at the international meetings, they attended, were submitted to concerned sectional committees of ISI for their study and use in laying down national standards. A brief report of the work of each of the ISO committees, which held meetings during the period under review together with those for which India holds the Secretariat, is given below. This includes the work of some of the committees in which India made a significant contribution.

3.2.1 ISO Council—The Council adopted eight new recommendations, of which five were concerning aircraft equipment, one rubber and two pipe fittings. It also accepted the recommendation of the Co-ordinating Committee on Atmospheric Conditioning for Testing (ATCO) which had recommended three standard atmospheres, one of which is the Indian Standard Atmosphere, while the other two are those used widely in Europe and USA. This is an important step forward, because the materials and commodities coming in and going out of India would henceforth be tested in all countries under the most suitable and internationally recognized set of atmospheric conditions; and India will no longer be required to use cold atmospheres for testing goods entering international trade.

The Working Group on Agricultural Products which had been established by the Council a couple of years ago, met again and reviewed the position with regard to the initiation of work by ISO/TC 34—Agricultural Products. Besides India, Italy, France and the USSR are members of the Working Group. On a recommendation of this Group, the Council adopted a resolution recognizing the need for close liaison between ISO/TC 34 and all other international organizations interested in this subject, especially FAO.

On a recommendation of its Committee on Directives, the Council adopted a new procedure making it possible for the ISO to accept standards developed by other competent international organizations as ISO Recommendations. This will reduce the burden on various ISO Committees, establishing at the same time closer and more cordial relationships with other international organizations, and eliminating, to some extent, the duplication of efforts in international activity of this kind.

The Council also adopted a resolution concerning copyrights for the reproduction of a part or whole of a standard of one member-body by another

3.2.17 ISO/TC 44 — Welding — The fourth plenary meeting of the Technical Committee was held on 2 to 7 December 1957 at Paris. The Committee considered draft proposals for many subjects, including lengths and tolerances of mild steel and low alloy high tensile steel electrodes; lengths and tolerances for cast filler rods other than drawn or extruded; code for international symbols for filler materials for gas welding mild and low alloy high tensile steels; lengths and tolerances for drawn filler rods and extruded filler rods supplied in straight lengths; filler metal for braze welding; arc welding equipment; resistance welding equipment and symbolic representation of welds on technical drawings.

India communicated its approval, to the General Secretariat of ISO, concerning the following draft ISO Recommendations with the comment that in the draft ISO Recommendation No. 178 a test temperature of $27^{\circ} \pm 2^{\circ}\text{C}$ should be included in accordance with the agreement reached at the ATCO meeting for ambient temperature in tropical climates:

- a) No. 178 Code of International Symbols for Designating Covered Electrodes for Arc Welding of Mild Steels and Low Alloy High Tensile Steels, and
- b) No. 179 Standardization of Dimensional Properties of Electrodes and Filler Metals — Diameters and Tolerances.

3.2.18 ISO/TC 44/SC 3 — Filler Materials and Electrodes — The fourth meeting of this Subcommittee, which was held on 23 to 25 May 1957 at Paris, considered, among others, the documents on the following subjects:

- a) Electric Manual Welding — Requirements for Testing of Electrodes for Boiler Work,
- b) Appendix to the draft ISO Recommendation — Methods of Testing for Determining the Mechanical Properties of Metal Deposited by the Electrodes for Deep Penetration.

3.2.19 ISO/TC 45 — Rubber — The Committee, which met at Zürich (Switzerland) from 30 September to 5 October 1957, considered *inter alia*, the reorganization of its working groups on a more rational basis. It also approved 11 draft ISO Recommendations for further processing, and considered 17 new subjects with a view to preparing draft ISO Recommendations.

The 11 draft ISO Recommendations accepted by the Committee include the subjects on hardness; tension stress — strain; tear stress — strain; tear strength — crescent test piece; abrasion — du pont; rubber/fabric adhesion testing; determination of the mechanical stability of latex; sampling of latex — dry rubber content, total solids, alkalinity, KOH number; determination of resistance to crack growth; determination of resistance to flex cracking; accelerated ageing tests or simulated service tests on vulcanized rubber; and accelerated ageing test using cell type oven. The 17 new subjects discussed for formulating draft ISO Recommendations included a number of mechanical, physical and chemical tests on both raw materials and finished products of rubber.

Some 25 items which were accepted for consideration in its long-term programme, include, among

others, dynamic testing, certain mechanical tests on ebonite, chemical tests on latex and electrical tests.

3.2.20 ISO/TC 50 — Lac (Sectt. India) — The draft ISO Recommendations for Seedlac, Shellac and Bleached Lac, which were circulated earlier, were approved by a majority of the ISO Member Bodies. The Council has since approved these drafts for publication as ISO Recommendations.

Further, the samples of seedlac and shellac, prepared by the Indian Lac Research Institute, were distributed in September 1957 to UK, USA, France and four Laboratories in India for carrying out 'Round Robin Tests' for the determination of bleach index and bleachability of seedlac and non-volatile matter soluble in cold alcohol in seedlac, shellac and bleached lac. These tests were commenced from 11 November 1957 in the various laboratories in these countries. The Secretariat, on receipt of the test results and replies, would prepare a report for consideration of member bodies.

3.2.21 ISO/TC 54 — Essential Oils — The Committee carried out the work by correspondence, though no plenary meeting could be held. Three draft ISO Recommendations for (i) Standard Format for Methods of Analysis of Essential Oils, (ii) Determination of the Relative Density and Apparent Density of Essential Oils, and (iii) Determination of the Refractive Index of Essential Oils were circulated to its member bodies. India, while approving the first draft ISO Recommendation, urged that a supplementary temperature of 30°C should be prescribed for tests for use in tropical countries.

The Secretariat (Portugal) of the Committee had been trying to collect information from the member bodies for the preparation of the nomenclature of essential oils, giving (i) name of the oil in national language, (ii) botanical classification of the plant, and (iii) the portion of the plant from which oil is extracted. India has submitted a list of essential oils for which the Indian Standards have either been issued or are under formulation.

3.2.22 ISO/TC 55 — Resinous Lumber — The technical committee held its meeting in Moscow from 20 to 22 November 1957. Two items were discussed; one on second draft ISO Proposal on Coniferous Sawm Timber Sizes, and the other on second draft ISO Proposal on Coniferous Sawm Timber, Defects.

3.2.23 ISO/TC 56 — Mica (Sectt. India) — The fourth Plenary meeting of the Committee has been called in Harrogate in June 1958, where the 1958 series of ISO meetings will be held. Two new 'P' Members, namely Australia and USSR are likely to attend the meeting. The outstanding issues to be discussed relate to the classification of muscovite mica and the grading of muscovite splittings and of phlogopite mica. India has been pressing for the preparation of a set of master standard samples to illustrate different qualities of muscovite mica, and also for a field study to ascertain the actual qualities accepted by users of mica in different countries for various applications. These proposals will also be discussed at the Harrogate meeting.

The draft Recommendation for the Grading of Muscovite Mica Blocks, Thins and Condenser Films,

which was finalized after the Paris meeting in 1954, was submitted to the ISO Council by correspondence.

3.2.24 ISO/TC 59 — Building Construction and ISO/TC 59/SC 1 Modular Co-ordination — The Subcommittee ISO/TC 59/SC 1, which met in Paris on 3 and 4 June 1957, prepared a proposal to cover the scope and aim of modular co-ordination and the use of the basic module. This proposal was subsequently adopted for circulation to the ISO member countries. The Subcommittee also set up three working groups to prepare draft proposals for a glossary of terms, a system of tolerances, and the methods for the selection of modular sizes for components. It was also agreed that the Belgian Secretariat should prepare a questionnaire for circulation to members on the methods used for fitting non-modular components to the modular grid.

The Technical Committee ISO/TC 59, at its meeting on 5, 6 and 7 June 1957, set up the following subcommittees with the terms of reference mentioned against each:

<i>Subcommittee</i>	<i>Terms of Reference</i>
ISO/TC 59/SC 3	To prepare the preliminary draft ISO Recommendation on technical drawings in building construction, including the graphic symbols and terminology relating to such drawings. The work should be carried out in close co-operation with Technical Committee ISO/TC 10.
ISO/TC 59/SC 4	To prepare a draft ISO Recommendation proposal on the basic principles applicable to limits and fits (tolerances) in the building industry as well as its own terminology.

The Committee directed the Secretariat (France) to proceed with the preparation of a table of tolerances for various materials, components and assembly techniques. It also decided to set up a working group under ISO/TC 59/SC 1 to formulate principles concerning terminology.

3.2.25 ISO/TC 61 — Plastics — The seventh annual meeting of the Committee was held at Burgenstock (Switzerland) from 8 to 13 July 1957. The Committee approved four draft ISO Recommendations for submission to the ISO Council for final action, and six test methods for circulation to member countries as draft ISO proposals. Among many other subjects under active consideration of the appropriate working groups of ISO/TC 61, mention may be made of mechanical characteristics, like modulus of elasticity, dynamic properties, compression, hardness, etc; stiffness properties of plastics as function of temperature; flammability of thin flexible sheets and film; thermal stability of PVC; resistance of plastics to natural and artificial light; determination of surface and volume resistivities; and insulation resistance.

The subject of standard atmospheres has for some time been engaging the attention of the Working Group 3 of which Dr. Lal C. Verma, Director, ISI, is the Leader. India was particularly

interested in getting temperature and relative humidity (27°C and 65 RH), meant for tropical and sub-tropical countries, included as one of the standard atmospheres. India's efforts have met with success both in this meeting and at the level of the Co-ordinating Committee for Atmospheric Conditioning and Testing (ATCO) of the ISO. Final proposals, emanating from the Working Group 3 were circulated as draft ISO Recommendations for the scrutiny of the member bodies.

3.2.26 ISO/TC 65 — Manganese Ores — The third plenary meeting of the Technical Committee was held at Moscow from 20 to 22 November 1957. The Committee considered 7 draft proposals relating to the methods of chemical analysis of manganese ores for adoption as ISO Recommendations.

In order to formulate India's views relating to the Methods of Sampling Manganese Ores — Part I Ore Loaded in Freight Cars, prepared by the Technical Committee, ISO/TC 65, a detailed investigation has been initiated with a view to making a comparative study of the methods of sampling manganese ores formulated by the ISO and the methods which are currently being used by the industries in India.

3.2.27 ISO/TC 69 — Statistical Treatment of Series of Observations — Proposals for the formulation of two ISO Recommendations; one on Rules for Rounding Off Numerical Values, and the other on Presentation of Numerical Values in Specifications, were made by India for the consideration of ISO/TC 69, at its meeting held at The Hague October last. The working group, concerned with the presentation of data, was entrusted with the task of studying these proposals. Since it was not possible for India, a 'P' Member of the Technical Committee, to be represented at the meeting, the proposals had been circulated earlier among the member bodies of ISO/TC 69.

The following draft proposals were circulated to member bodies for eliciting their comments:

- 1) ISO/TC 69 (Sectt-22)46 First Draft Proposal on List of Recommended Symbols
- 2) ISO/TC 69 (France 4)45 Draft Proposal on Terminology Necessary for the Proper Formulation of ISO Standards
- 3) ISO/TC 69 (Sectt-17)40 Presentation of Data

India, and a number of other countries, had sent their comments which were circulated to member bodies. The Committee considered and approved these three documents in the light of the comments with certain modifications.

The Committee also took certain important decisions regarding continuity or otherwise of the various working groups. In view of many differences about the use of the most fundamental terms, the Committee expressed the opinion that standards on general statistical terminology should be considered as not falling under its scope, except in the context of industrial standards and decided that its term of differences should be changed to 'statistical symbols, terminology, and techniques for the proper formulation of industrial standards'.

3.2.28 ISO/TC 74 — Hydraulic Binders — The first meeting of the Committee was held in Brussels from 30 September to 2 October 1957. The subjects discussed in this meeting covered Terminology

of Cements and Methods of Testing Cements of Plastic Mortars. The study of chemical analysis of cements and the study of plaster were included in the programme of the immediate work of the Committee, for which two committees were set up.

3.2.29 ISO/TC 75 — Stretchers and Stretcher Carriers — Though India is only an 'Observer' member of ISO/TC 75, it was found possible to organize an Indian Delegation to the first Plenary meeting of the Committee which was held in London on 8 and 9 October 1957. A draft ISO Recommendation for Stretchers and Stretcher Carriers and Hospital Trolleys was discussed. Subject to certain modifications, the draft was approved for circulation to member bodies for approval by postal ballot.

3.2.30 ISO/TC 77 — Asbestos Cement Products — The Committee met from 9 to 12 April 1957 at Paris and discussed the following items:

- a) Asbestos Cement Pipes for Building Purposes and Joints
- b) Asbestos Cement Fittings For Pipes for Building Purposes
- c) Asbestos Cement Roofing and Cladding Shingles
- d) Asbestos Cement Corrugated Sheets for Roofing and Cladding

India was represented by Mr. W. H. Roolsby, Asbestos Cement Ltd., Bombay, and Shri T. V. Joseph, Officer on Special Duty, ISI.

3.2.31 ISO/TC 81 — Common Names for Pesticides — The aim of ISO/TC 81 is to give internationally recognized common names for pesticides by resolving the existing confusion with regard to the usage of the same chemical name differently in different countries.

The second plenary meeting of ISO/TC 81 was held in London during 18-20 September 1957. The officers from the High Commission of India in UK who attended this meeting on behalf of India presented the Indian viewpoint as briefed by the ISI Pest Control Products Sectional Committee AFDC 6.

The Committee at the above meeting reviewed the general principles in selecting common names for pesticides and in the preparation of a series of lists of common names. It also discussed the comments received on the report of the first meeting. The second draft ISO proposal on common names for pesticides (second list) comprising 16 names, was also considered.

The draft ISO Recommendation No. 166 — Common Names for Pesticides (First List) formulated by ISO/TC 81 earlier, was received from the ISO General Secretariat for approval on behalf of India. On the basis of the decisions taken by AFDC, the ISI Directorate approved the draft ISO Recommendation subject to certain modifications. All the common names contained in this list, except one which is a registered trade mark in Germany, are now free to be used as common names in all the member countries.

3.2.32 ISO/TC 85 — Nuclear Energy — The Committee held its meeting at Geneva from 29 July to 10 August 1957. The question of adopting American symbol for indicating the radioactive danger as the international symbol came up. The

American symbol, in fact, is a pictorial mark for dangerous goods. There is another symbol slightly different from the American symbol, for the radiation danger on which ILO-UN agreement exists and is in wide use in atomic energy establishments. Though India is still in a relatively infant stage of work in the field of nuclear energy, the subject matter on the symbolic representation of radioactive danger requires her careful consideration from the point of view of another Technical Committee on Pictorial Marking of Handling Instructions for Goods (ISO/TC 88), whose secretariat rests with India.

3.2.33 During the year 1957, 26 draft ISO Recommendations were accepted by the Council as ISO Recommendations. Besides, the ISO General Secretariat circulated 67 draft ISO Recommendations to all the member bodies including India. As in the past, these drafts were referred to the appropriate technical committee of the ISI. Where such committees did not exist, the draft recommendations were brought to the notice of the Government Departments and such other organizations in the country as were interested in the subject matter.

3.3 International Electrotechnical Commission (IEC) — The 1957 general meeting of the IEC, which is the Electrical Division of the ISO, was held in Moscow from 2 to 12 July 1957. It was attended by some 450 delegates and observers from 27 countries. The general meeting included meetings of several technical committees which were of interest to India, particularly those dealing with cables, dry cells and batteries, electric motors, electric lamps and lamp accessories. Dr. Lal C. Verman, Director of the ISI, who attended the meeting, also represented India on the Committee of Action of which India is an elected member.

On a proposal from India, a new Technical Committee, IEC/TC 43, for the preparation of international standards for electric fans (household and industrial) and ventilating devices was formed, with the secretariat assigned to India, i.e. the ISI.

India's invitation to the International Electrotechnical Commission to hold one of its annual sessions in India was also accepted. The group meetings of a number of its committees are scheduled to be held in New Delhi in October 1960.

3.3.1 Committee of Action — The Committee of Action held two meetings, the first on 9 July 1957, and the second on 12 July 1957. The Committee dealt with a number of administrative matters including finance. Some of its important decisions are recorded below:

- i) Acceptance of the invitation of the Swedish National Committee for the IEC for holding its 1958 General Meeting in Stockholm and some meetings of its Technical Committees outside Stockholm was confirmed. It was also provisionally agreed to accept the invitation from the Spanish National Committee for holding the 1959 General Meeting in Madrid.
- ii) It was decided that, from 1958 onwards, IEC publications will be issued in two separate booklets, one containing the

French and English texts, and the other containing the Russian and English texts.

- iii) Technical Committee No. 1, Nomenclature, was asked to establish liaison with ISO Technical Committee No. 85 — Nuclear Energy, and to make to the International Electrotechnical Vocabulary necessary additions of technical terms, nomenclature, etc, used in the field of electric power stations run on nuclear fuel and of electrical measuring instruments used for the detection and measurement of radiations.
- iv) Technical Committee No. 15, Insulating Materials, was requested to consider the behaviour of insulating materials under radiation in addition to their other properties, so as to give the other Technical Committees the basis for drawing up the requirements for the use of insulating materials in the manufacture of different types of apparatus which are exposed to radiation in addition to ordinary stresses.
- v) In preparation for the setting up of a new Technical Committee, to deal with electrical measuring instruments, employed in connection with the use of radio isotopes, and those used for safety measurements in the nuclear field, a Working Group was formed to consider the programme of the new committee and to make suggestions regarding the overall possibilities of standardization in the nuclear field.
- vi) A question raised by the Technical Committee No. 34 Lamps and Related Equipment, regarding the policy to be followed, concerning an international code designation scheme for photographic projection lamps, was referred for consideration to the President, Preparatory Committee.
- vii) Arising out of the Report of the Subcommittee on Safety Regulations, a new Technical Committee, No. 44, was set up to deal with the electrical equipment of machine tools. The Secretariat of the Committee was offered to the Swiss National Committee in the first instance.
- viii) The Secretariat of the Subcommittee on Safety Regulations was asked to make enquiries regarding the work of the International Radiological Congress and to report on the desirability of setting up a new Technical Committee.
- ix) Following a request from the German National Committee, it was decided that the resolutions of Technical Committee No. 24 Electric and Magnetic Magnitudes and Units, regarding the name to be given to the MKSA System and the rationalization of the electro-magnetic field equations, should be reconsidered at the next meeting of TC 24, and that publication of the Philadelphia resolutions should be postponed until after that meeting.

3.3.2 IEC/TC 2 — Rotating Machinery — It may be recalled that last year India had made a proposal for the unification of leading dimensions of electric motors, based on the metric system, which had been referred to a Working Group by the IEC/SC 2B Dimensions of Motors. The

second meeting of the Working Group, held in June 1957 in Brussels, was attended by Dr. Lal C. Verman, the Director of the ISI. Since a considerable amount of agreement had been arrived at, it was proposed that the IEC/SC 2B should be authorized to circulate the final draft recommendation based on the Indian proposal. The recommendation of the Working Group was subsequently endorsed by the Committee and accepted by the Committee of Action.

3.3.3 IEC/TC 20 — Electric Cables — The scope of the Technical Committee was revised to read as under:

“To prepare international recommendations regarding the testing of cables and accessories, without limitation of voltage, current or form of construction.”

The Committee discussed draft recommendations for tests on oil-filled paper-insulated metal-sheathed cables for voltages up to 275 kV, in the light of comments received as a result of circulation, and it was decided to combine the amended draft of the specification for tests on oil-filled cables with the draft specification for tests on accessories, and to circulate the combined document for approval.

A Working Group was also set up to review the Secretariat's proposal for tests on gas-pressure cables and accessories up to 275 kV for consideration at the next meeting.

3.3.4 Subcommittee 34C — Auxiliaries for Fluorescent Lighting — Certain proposals, for amending the first edition of Publication No. 82 Ballasts for Fluorescent Lamps, were discussed, and it was decided to circulate a draft amendment for comments. It was also decided to continue the preparation of the second edition of the publication.

3.3.5 IEC/TC 35 — Primary Cells and Batteries — The Committee considered the results of tests carried out by the National Committees to determine the service outputs of combined batteries, radio high-tension batteries, batteries for transistorized hearing aids, mercury batteries, and portable lighting batteries. As a result of comparison of these tests, an agreement was reached on values to be standardized for service outputs. India's proposal for the adoption of 27° Centigrade temperature for the testing of dry cells for use in tropical and sub-tropical countries was also adopted. The question of standardization of batteries for transistorized radio sets was considered, and proposals relating to three alternate types of batteries were agreed to be circulated to the National Committees for comments.

3.3.6 IEC/TC 18 — Electrical Installations in Ships — The Technical Committee met at Rapallo (Italy) on 13 to 17 May 1957. A recommendation of the Canadian National Committee, that the subject of the use of aluminium in ships be placed on the programme of work was agreed for discussion at the next meeting. In addition, comments received on the draft Recommendations for Electrical Installations in Ships were considered, and a number of modifications were accepted for incorporation in the revised draft.

Commander K. R. Ramnath of the Indian Naval Headquarters, represented India at this meeting.

3.3.7 IEC Meeting in Zürich — A number of technical committees and subcommittees of the

IEC met in Zürich from 1 to 11 October 1957. Of these, India's interest mainly lay in TC 40 Components for Electronic Equipment, SC 40-1 Capacitors and Resistors, and SC 40-5 Basic Testing Procedure. On account of the acute shortage of foreign exchange at the time, it was not possible to depute any delegate from India to attend these meetings. However, in accordance with a recommendation of the Commonwealth Standards Conference 1957, ISI delegated its proxy in favour of the British Standards Institution for presenting the Indian viewpoint. Mr. D. A. Weale of the BSI represented India at those meetings. The important decisions taken at those meetings are recorded below:

- a) *IEC/TC 40—Components for Electronic Equipment*—The Indian reservation on the acceptance of the revised long-term damp heat test was noted, but it was decided to endorse the acceptance of the test revised by IEC/SC 40-5, and its inclusion in the draft revision of IEC Publication No. 68.
- b) *IEC/SC 40-1—Capacitors and Resistors*—In view of the important changes likely to be made in the IEC Publication No. 68, India had pleaded for slowing down the finalization of draft IEC Recommendations for components. However, it was decided to proceed with the finalization of recommendations covering ceramic dielectric capacitors type I, aluminium electrolytic capacitors for general purpose application; carbon resistors, type II; and receiver type metallized mica capacitors, subject to such modifications as are agreed upon by the Subcommittee, including those proposed by India.

The comments including those of India, on draft Recommendations for Carbon Resistors, Type I, were considered; several of them were accepted for incorporation in the finalized draft.

- c) *IEC/SC 40-5—Basic Testing Procedure*—The Subcommittee discussed comments on the first draft revision of Publication 68 Basic Climatic and Mechanical Robustness Testing Procedures, and agreed on the redraft of several clauses. The most important of these, in which India has vital interest, related to damp heat (long term) tests and storage tests for electronic components. As regards the former, a Working Group, which had been working on several measurements taken in different countries, made recommendations for changing a condition for the test, from one of cycling the temperature to a steady elevated temperature at high humidity.

The recommendation of the Working Group was accepted and it was agreed that details of measurements, made by the Group, should be made available to India for examination, since her contention had been that this approach would not apply to the normal working conditions in the tropics. On storage tests, the Indian proposal, not to relate these to standard atmospheric conditions but to prevailing conditions, was accepted in principle; and a range of temperature and humidity figures, generally on the lines proposed by India, was agreed upon.

The Subcommittee also accepted the recommendations of ATCO for standard testing, reference temperatures, and relative humidities. It was agreed that a further document, incorporating such of the revised clauses as were agreed upon, would be prepared and circulated for approval; and that other tests, such as vibration, bumping, salt mist, etc, on which investigations were still continuing, would form the subject of a second document to be prepared for circulation.

3.3.8 The IEC Publications listed below were received by the ISI during the period under review:

- 1) IEC 50(15) International Electrotechnical Vocabulary (Second Edition) Group 15: Switchboards and Apparatus for Connection and Regulation
- 2) IEC 50(30) International Electrotechnical Vocabulary (Second Edition) Group 30: Electric Traction
- 3) IEC 50(20) International Electrotechnical Vocabulary (Second Edition) Group 20: Scientific & Industrial Measuring Instruments
- 4) IEC 55 Recommendations for Tests on Impregnated Paper-Insulated Metal-Sheathed Cables for Voltages of 10 kV to 66 kV (Excluding Gas-Pressure and Oil-Filled Cables)
- 5) IEC 64 International Specification for Tungsten Filament Lamps for General Service (Second Edition, 1954)
- 6) IEC 70(3) Specification for Capacitors for Power Systems (Part III) —Capacitors for Use Under Tropical Conditions
- 7) IEC 84 Recommendations for Mercury-Arc Converters (First Edition)
- 8) IEC 85 Recommendations for the Classification of Materials, for the Insulation of Electrical Machinery and Apparatus in Relation to Their Thermal Stability in Service (First Edition, 1957)
- 9) IEC 86 Recommendations for Primary Cells and Batteries
- 10) IEC 87 Specification for Glass Insulators for Overhead Lines with a Nominal Voltage of 1 000 Volts and Upwards
- 11) IEC 88 Standard Rated Currents (2 to 63 a) of Fuse Links for Low Voltage Fuses (First Edition, 1957)
- 12) IEC 92 Recommendations for Electrical Installations in Ships
- 13) IEC 93 Recommended Methods of Test for Volume and Surface Resistivity of Electrical Insulating Materials
- 14) IEC 95 Recommendations for Lead-Acid Starter Batteries
- 15) IEC 97 Recommendations for Fundamental Parameters for Printed Wiring Technique

Besides these Publications, 29 draft IEC Recommendations were also received. As in the past, they were referred to the relevant ISI sectional committees which considered them on behalf of the Indian National Committee.

4. APPENDICES

APPENDIX 4.1

(Item 1.8)

INDIAN STANDARDS PUBLISHED AND IN PRESS DURING 1957-58

[This list gives the new Indian Standards published during 1957-58 and those which were under-print on 31-3-58. It does not include standards which were under-print on 31-3-57 and were printed during the year under report. The latter were included in a similar list published as Appendix 4.1 in last year's Annual Report.]

Sl. No.	Rs	Sl. No.	Rs
EC			
1.	IS: 12-1958 Guide for Drafting Indian Standards (Revised) ...	27.	IS: 851-1957 Synthetic Resin Adhesives for Construction Work in Wood ...
	3-50		2-00
EDC			
2.	IS: 621-1957 Forks for Plantations and Estates ...	28.	IS: 852-1957 Animal Glue ...
	2-00		2-50
3.	IS: 704-1957 Crow-Bars and Claw-Bars ...	29.	IS: 866-1957 Timmen's Rivets ...
	1-50		1-00
4.	IS: 715-1957 Coated Abrasives, Glue Bond	30.	IS: 1003-1957 Timber Panelled and Glazed Doors and Windows ...
	1-50		2-00
5.	IS: 810-1957 Inlet and Exhaust Valves for Internal Combustion Engines ...	31.	IS: 1038-1957 Steel Doors, Windows and Ventilators ...
	1-50		3-00
6.	IS: 830-1957 Tennis Racket Frames ...	32.	IS: 1077-1957 Common Burnt Clay Building Bricks ...
	1-00		1-50
7.	IS: 831-1957 Badminton Racket Frames ...	33.	IS: 1120-1957 Mild Steel Square or Hexagon Head Coach Screws with Gimlet Points
	1-00		1-50
8.	IS: 841-1957 Hand Hammers ...	34.	IS: 1121-1957 Methods for Determination of Compressive, Transverse and Shear Strengths of Natural Building Stones ...
	2-50		1-50
9.	IS: 990-1957 Spoons, Stainless Steel ...	35.	IS: 1122-1957 Methods for Determination of Specific Gravity and Porosity of Natural Building Stones ...
	1-50		1-00
10.	IS: 991-1957 Spoons, Brass and Nickel Silver ...	36.	IS: 1123-1957 Methods for Petrographical Examination of Natural Building Stones
	1-50		1-50
11.	IS: 1056-1957 Commercial Metric Weights	37.	IS: 1124-1957 Method of Test for Water Absorption of Natural Building Stones
	2-00		1-00
12.	IS: 1058-1957 Commercial Metric Capacity Measures ...	38.	IS: 1125-1957 Method of Test for Weathering of Natural Building Stones ...
	1-50		1-00
13.	IS: 1105-1957 Method for Precise Conversion of Inch and Metric Dimensions to Ensure Interchangeability ...	39.	IS: 1126-1957 Method of Test for Durability of Natural Building Stones ...
	3-00		1-00
14.	IS: 1116-1957 Glass Globes for Hurricane Lanterns ...	40.	IS: 1127-1957 Dimensions and Workmanship of Natural Building Stones ...
	1-00		1-50
15.	IS: 1131 to 34-1957 Bicycle Bottom Bracket Axle ...	41.	IS: 1128-1957 Lime Stone Slabs ...
	2-00		1-00
16.	IS: 1135-1957 General Requirements for Leaf Springs for Automobile Suspension	42.	IS: 1141-1958 Code of Practice for Seasoning of Timber (Tentative) ...
	1-50		2-00
17.	IS: 1160-1957 Metric Dispensing Measures	43.	IS: 1150-1957 Abbreviated Symbols for Timber Species ...
	2-00		1-00
18.	IS: 1249-1958 Recommendations for Selection of Grinding Wheels ...	44.	IS: 1172-1957 Code of Basic Requirements for Water Supply, Drainage and Sanitation ...
	2-00		1-50
BDC			
19.	IS: 709-1957 Medium Strength Aircraft Plywood ...	45.	IS: 1200-1958 Method of Measurement of Building Works ...
	2-00		5-00
20.	IS: 710-1957 Marine Plywood ...	46.	IS: 1233-1958 Recommendations for Modular Co-ordination of Dimensions in the Building Industry ...
	2-00		2-00
21.	IS: 732-1957 Code of Practice for Electrical Wiring and Fittings in Buildings ...	TDC	
	4-00	47.	IS: 199-1957 Methods for Estimation of Moisture, Total Size or Finish, Ash and Fatty Matter in Grey and Finished Cotton Textile Materials (Revised) ...
22.	IS: 778-1957 Gunmetal Gate, Globe and Check Valves for Water, Steam and Oil Only (Not Intended for Use in Petroleum Industry) ...		1-50
	2-50	48.	IS: 686-1957 Method for Determination of Colour Fastness of Textile Materials to Daylight ...
23.	IS: 809-1957 Rubber Flooring Materials for General Purposes ...		1-50
	1-50	49.	IS: 1084-1957 Hawser-Laid Manila Rope ...
24.	IS: 848-1957 Synthetic Resin Adhesives for Plywood (Phenolic and Aminoplastic)		1-50
	1-50		
25.	IS: 849-1957 Cold Setting Casein Glue for Wood ...		
	1-50		
26.	IS: 850-1957 Natural Sour (Lactic) Casein for Glue Manufacture ...		
	1-50		

APPENDIX 4.1 — Indian Standards Published and in Press — *Contd*

Sl. No.	Rs	Sl. No.	Rs
50. IS: 1085-1957 Shroud-Laid Manila Rope ...	1-50	85. IS: 1092-1957 China Clay for Textile and Paper Industries ...	1-50
51. IS: 1086-1957 Cable-Laid Manila Rope ...	1-50	86. IS: 1103-1957 Brushes, Artists ...	1-50
52. IS: 1093-1957 Handloom Cotton Madras Handkerchiefs ...	1-50	87. IS: 1104-1957 Brushes, Lettering ...	1-50
53. IS: 1094-1957 Handloom Cotton Gada Cloth, Grey ...	1-50	88. IS: 1106-1957 Distilled Water Glass Bottles ...	1-50
54. IS: 1095-1957 Handloom Cotton Dress Material, Bleached, Dyed, Painted, Striped or Checked ...	1-50	89. IS: 1107-1957 Aerated Water Glass Bottles ...	1-50
55. IS: 1096-1957 Handloom Cotton Holland Cloth, Unscoured ...	1-50	90. IS: 1108-1957 Tincture Glass Bottles ...	1-50
56. IS: 1097-1957 Handloom Cotton Mosquito Netting, Bleached or Dyed ...	1-50	91. IS: 1109-1957 Borax, Technical ...	2-00
57. IS: 1098-1957 Handloom Cotton Cambric, Bleached ...	1-50	92. IS: 1112-1957 Glass Shells for General Lighting Service Lamps ...	1-50
58. IS: 1099-1957 Handloom Cotton Lining Cloth, Dyed ...	1-50	93. IS: 1113-1957 Ammonium Chloride, Pure ...	1-50
59. IS: 1100-1957 Handloom Cotton Crepe, Bleached or Dyed ...	1-50	94. IS: 1114-1957 Ammonium Chloride, Technical ...	1-50
60. IS: 1101-1957 Handloom Cotton Cellular Shirting, Bleached or Dyed ...	1-50	95. IS: 1115-1957 Oil, Cutting, Soluble ...	1-50
61. IS: 1102-1957 Handloom Buckram Cloth ...	1-50	96. IS: 1118-1957 Gear Lubricant, Multipurpose (Extreme Pressure Gear Oil) ...	3-50
62. IS: 1142-1957 Cotton Cambric, Scoured, for Oil Dressed Fabric ...	1-50	97. IS: 1153-1957 Temporary Corrosion Preventive, Fluid, Hard Film, Solvent Deposited ...	2-50
63. IS: 1143-1957 Cotton Mosquito Netting, Square Mesh, Dyed ...	1-00	98. IS: 1154-1957 Temporary Corrosion Preventive, Fluid, Soft Film, Solvent Deposited, Water Displacing ...	2-00
64. IS: 1144-1957 Cotton Cellular Shirting, Dyed ...	1-00	99. IS: 1177-1957 Vetiver (<i>Khus</i>) Oil ...	1-00
65. IS: 1178-1957 Filter Cloth, Grey, for Sugar and Oil Industries ...	1-00	100. IS: 1188-1957 Ready Mixed Paint, Brushing, Oil Gloss, Genuine Zinc Oxide, for General Purposes ...	1-00
66. IS: 1184-1957 Maize Starch for Use in the Cotton Textile Industry ...	1-50	101. IS: 1189-1957 Oil Paste for Paints, Yellow Ochre ...	1-00
67. IS: 1185-1957 Method for Determining the Relative Wetting Power of Wetting Agents (<i>Tentative</i>) ...	1-50	102. IS: 1221-1957 Dye-Based Fountain Pen Inks (Blue, Green, Violet, Black and Red) ...	1-00
68. IS: 1186-1957 Shuttles for Hessian Looms ...	1-50	103. IS: 1222-1957 Ink, Duplicating, All Weather, Black for Rotary Type Machines ...	1-00
69. IS: 1187-1957 Shuttles for Sacking Looms ...	1-50	104. IS: 1232-1957 Ready Mixed Paint, Brushing, Yellow Ochre, Oil Gloss, for General Purposes ...	1-00
70. IS: 1190-1957 Twin Wire Healds for Use in Cotton and Silk Weaving (Excluding Jacquard and Fancy Weaving) ...	1-50	105. IS: 1234-1957 Ink, Stencil, Oil Base, for Making Porous Surfaces ...	1-50
71. IS: 1225-1958 Leather Picking Bands for Looms (<i>Tentative</i>) ...	1-00	106. IS: 1235-1958 Acetic Anhydride ...	1-50
72. IS: 1226-1957 Method for Determination of Linear Density (Mass per Unit Length) in Denier Unit (or tex Units) of Continuous Filament Rayon Yarn and Acetate Yarn (<i>Tentative</i>) ...	1-50	107. IS: 1236-1958 Ready Mixed Paint, Brushing, Oil Gloss, Heat Resisting, to Indian Standard Colour No. 360 Deep Buff ...	1-00
73. IS: 1227-1957 Method for Determination of Twist in Continuous Filament Rayon Yarn and Acetate Yarn (<i>Tentative</i>) ...	1-50	108. IS: 1257-1958 Black Japan, Type B, Exterior ...	1-50
74. IS: 1228-1957 Method for Determination of Dry and Wet Single Strand Strength and Elongation of Continuous Filament Rayon Yarn and Acetate Yarn (<i>Tentative</i>) ...	2-00	109. IS: 1259-1958 Vinyl Coated Fabrics (Leather Cloth) ...	2-00
75. IS: 1229-1957 Method for Determination of Commercial Weight of Continuous Filament Rayon Yarn and Acetate Yarn and Their Mixture (<i>Tentative</i>) ...	1-50		
CDC			
76. IS: 246-1957 Sodium Thiosulphate (<i>Revised</i>) ...	2-00	AFDC	
77. IS: 247-1957 Anhydrous Sodium Sulphite (<i>Revised</i>) ...	2-00	110. IS: 634-1957 Ethylene Dichloride Carbon Tetrachloride Mixture (3:1 v/v) ...	3-00
78. IS: 328-1957 Oil of Eucalyptus (<i>Revised</i>) ...	1-00	111. IS: 1006-1957 Arrowroot Starch ...	1-50
79. IS: 997-1957 Limestone for Glass Industry ...	2-00	112. IS: 1008-1957 Hard Boiled Sugar Confectionery ...	3-00
80. IS: 1035-1957 Methods of Sampling and Test for Bleaching Earths Used for Decolorizing Vegetable Oils ...	1-50	113. IS: 1010-1957 <i>Suji</i> or <i>Rava</i> (Semolina) ...	1-50
81. IS: 1044-1957 Turkey Red Oil ...	1-50	114. IS: 1011-1957 Biscuits (Excluding Wafer Biscuits) ...	1-50
82. IS: 1083-1957 White Oil, Light, Technical... ...	1-50	115. IS: 1152-1957 Icing Sugar ...	1-50
83. IS: 1088-1957 Oil, Clock and Watch ...	1-50	116. IS: 1155-1957 Wheat Atta ...	2-00
84. IS: 1089-1957 Oleum (20 Percent), Technical ...	1-50	117. IS: 1156-1957 Pearl Barley ...	1-50
		118. IS: 1157-1957 Barley Powder ...	1-50
		119. IS: 1158-1957 Corn Flakes ...	1-50
		120. IS: 1159-1957 Baking Powder ...	2-50
		121. IS: 1165-1957 Milk Powder (Whole or Skim) ...	2-00
		122. IS: 1166-1957 Condensed Milk ...	2-00
		123. IS: 1167-1957 Edible Casein ...	1-50
		124. IS: 1183-1957 Density Hydrometers for Use in Milk ...	1-50
		125. IS: 1251-1958 Zinc Phosphide, Technical ...	1-50
		SMDG	
		126. IS: 806-1957 Code of Practice for Use of Steel Tubes in General Building Construction ...	2-00

APPENDIX 4.1 — Indian Standards Published and in Press — *Contd*

Sl No.	Rs	Sl No.	Rs
127.	4-00	ETDC	
128.	5-00	145.	2-00
129.	4-00	146.	2-00
130.	4-50	147.	4-00
131.	2-00	148.	1-50
132.	1-50	149.	0-75
133.	1-00	150.	2-00
134.	1-00	151.	1-50
135.	1-50	152.	2-00
136.	1-50	153.	1-50
137.	1-00	154.	1-00
138.	1-00	155.	2-00
139.	1-50	156.	1-00
140.	1-50	157.	1-50
141.	2-50	158.	5-00
142.	2-00	159.	5-00
143.	2-00	160.	2-00
144.	1-00		

APPENDIX 4.2

(Item 1.10)

CONTRIBUTIONS AND SUBSCRIPTIONS BY THE CENTRAL AND STATE GOVERNMENTS, ORGANIZATIONS, FIRMS AND INDIVIDUALS FOR THE CALENDAR YEAR 1957

	Rs	Rs	Rs
1. Contribution			
i) Government of India Grant-in-Aid	940 000-00
2. Membership Subscription			
a) Governments of States			
Bombay	...	12 500-00	
Uttar Pradesh	...	Awaited	
West Bengal	...	4 000-00	
Madhya Pradesh	...	3 250-00	
Bihar	...	2 500-00	
Punjab	...	2 500-00	
Andhra Pradesh	...	2 000-00	
Madras	...	2 000-00	
Orissa	...	2 000-00	
Mysore	...	1 500-00	
Rajasthan	...	1 250-00	
Kerala	...	1 000-00	
Delhi Administration	...	375-00	
Assam	...	250-00	
Jammu & Kashmir	...	250-00	35 375-00
b) Government of Neighbouring Country			
Ceylon	...	500-00	500-00
C. O.	...	35 875-00	940 000-00

APPENDIX 4.2 — Contributions and Subscriptions — *Contd*

	Rs	Rs	Rs
B. F. ...		35 875-00	940 000-00
c) Firms, Trade Associations, Non-Government Bodies, etc., paying more than the minimum			
Associated Cement Companies Ltd., Bombay ...	3 000-00		
Kalinga Tubes (Private) Ltd., Calcutta ...	3 000-00		
Tata Iron & Steel Co. Ltd., Bombay ...	3 000-00		
Delhi Cloth & General Mills Co. Ltd., Delhi ...	1 500-00		
C.P. Manganese Ore Co. Ltd., Nagpur ...	1 000-00		
Federation of Indian Chamber of Commerce & Indus- try, New Delhi ...	1 000-00		
Hindustan Lever Ltd., Bombay ...	1 000-00		
Philips India Ltd., Calcutta ...	1 000-00		
Sindri Fertilizers & Chemicals Private Ltd., Sindri...	1 000-00		
D.C.M. Chemical Works, Delhi ...	750-00		
Ahmedabad Advance Mills Ltd., Bombay ...	500-00		
Alkali & Chemical Corporation of India Ltd., Calcutta	500-00		
Aluminium Industries Ltd., Kundara ...	500-00		
Ashok Leyland Ltd., Madras ...	500-00		
Assam Oil Co. Ltd., Digboi ...	500-00		
Bikaner Gypsums Ltd., Calcutta ...	500-00		
Braithwaite Burn & Jessop Construction Co. Ltd., Calcutta ...	500-00		
Burmah-Shell Oil Storage & Distributing Co. of India Ltd., Calcutta ...	500-00		
Burmah-Shell Refineries Ltd., Bombay ...	500-00		
Central India Spinning, Weaving & Manufacturing Co. Ltd., Bombay ...	500-00		
Chandmull Rajgariah, Giridih ...	500-00		
Dalmia Cement (Bharat) Ltd., New Delhi ...	500-00		
Dunlop Rubber Co. (India) Ltd., Calcutta ...	500-00		
Engineering Association of India, Calcutta ...	500-00		
Ganges Rope Co. Ltd., Calcutta ...	500-00		
General Electric Co. of India Private Ltd., Bombay ...	500-00		
Hindustan Aircraft Private Ltd., Bangalore	500-00		
Hindustan Motors Ltd., Calcutta ...	500-00		
Imperial Chemical Industries (India) Private Ltd., Calcutta ...	500-00		
Imperial Tobacco Co. of India Ltd., Calcutta ...	500-00		
Indian Aluminium Co. Ltd., Calcutta ...	500-00		
Indian Iron & Steel Co. Ltd., Calcutta ...	500-00		
Indian Jute Mills Association, Calcutta ...	500-00		
Ludlow Jute Co. Ltd., Calcutta ...	500-00		
Madura Mills Co. Ltd., Madurai ...	500-00		
Mahindra & Mahindra Ltd., Bombay ...	500-00		
National Carbon Co. (India) Ltd., Calcutta ...	500-00		
Sree Meenakshi Mills Ltd., Madurai ...	500-00		
Standard Batteries Ltd., Bombay ...	500-00		
Standard Vacuum Oil Co. Ltd., Bombay ...	500-00		
Standard Vacuum Refining Co. of India Ltd., Bombay	500-00		
Stewarts & Lloyds of India Private Ltd., Calcutta ...	500-00		
Svadeshi Mills Co. Ltd., Bombay ...	500-00		
Tata Mills Ltd., Bombay ...	500-00		
Bata Shoe Co. (Private) Ltd., Calcutta ...	400-00		
Indian Copper Corporation Ltd., Ghatsila ...	400-00		
Bengal Chemical & Pharmaceutical Works Ltd., Calcutta ...	350-00		
Coal Consumers' Association of India, Calcutta ...	350-00		
Crompton Parkinson (Works) Private Ltd., Bombay	350-00		
Estrela Batteries Ltd., Bombay ...	350-00		
Firestone Tyre & Rubber Co. of India Private Ltd., Bombay ...	350-00		
Gladstone Lyall & Co. Ltd., Calcutta ...	350-00		
India Electric Works Ltd., Calcutta ...	350-00		
Killick Nixon & Co. Ltd., Calcutta ...	350-00		
Metal Box Co. of India Ltd., Calcutta ...	350-00		
C. C. Wakefield & Co. Ltd., Bombay ...	350-00		
Williamson Magor & Co. Ltd., Calcutta ...	350-00		
Angelo Brothers Ltd., Calcutta ...	300-00		
Associated Stone Industries (Kotah) Ltd., Ramganj Mandi ...	300-00		
Atlas Cycle Industries Ltd., Sonapat ...	300-00		
British Metal Corporation (India) Private Ltd., Calcutta ...	300-00		
Chloride & Exide Batteries (Eastern) Private Ltd., Calcutta ...	300-00		
Electrical Storage Co. Ltd., Calcutta ...	300-00		
Gammon India Private Ltd., Bombay ...	300-00		
Glenfield & Kennedy Ltd., Bombay ...	300-00		
Indian Galvanizing Co. (1926) Ltd., Calcutta ...	300-00		
Indian Rope Manufacturers' Association, Calcutta	300-00		
Indien-Gemeinschaft Krupp-Demag G.m.b.H., New Delhi ...	300-00		
James Lord & Sons Ltd., Calcutta ...	300-00		
C. O. ...	41 500-00	35 875-00	940 000-00

APPENDIX 4.2 — Contributions and Subscriptions — *Contd*

	Rs	Rs	Rs
B. F. ...	41 500-00	35 875-00	940 000-00
Metal Rolling Works Private Ltd., Bombay ...	300-00		
Roadmaster Industries of India Private Ltd., Rajpura ...	300-00		
Sen Raleigh Industries of India Ltd., Calcutta ...	300-00		
Sidhpur Mills Co. Ltd., Bombay ...	300-00		
Standard & Co., Kanpur ...	300-00		
Aluminium Manufacturing Co. Private, Ltd., Calcutta	275-00		
Basant Pran & Co., Calcutta...	275-00		
Behar Firebricks & Potteries Ltd., Mugma ...	275-00		
Coke Oven Construction Co. Private Ltd., Calcutta...	275-00		
Gannon Dunkerley & Co. Ltd., Bombay ...	275-00		
Hindustan Vehicles Ltd., Calcutta ...	275-00		
India Cycle Manufacturing Co. Ltd., Calcutta ...	275-00		
Jauhar Fire Bricks & Refractory Works Private Ltd., Mugma ...	275-00		
Kohinoor Grain Mills, Baroda ...	275-00		
Modern Construction Co. Private Ltd., Bhavnagar ...	275-00		
Sankey Electrical Stampings Private Ltd., Bhandup	275-00		
Indian Implements Manufacturing Co. Ltd., Aligarh	256-00		
Federation of Gujarat Mills & Industries, Baroda ...	251-00		
Nandan Bagan Flour Mills Private Ltd., Calcutta ...	251-00		
Premier Rubber & Cable Industries, Bombay ...	251-00	47 034-00	
d) Other Sustaining Members at Rs 250-00 each ...		266 502-00	
e) Sustaining Members (Associates)... ...		16 561-00	
f) Ordinary Members		2 677-00	
	Total Subscription	368 649-00	368 649-00
	Grand Total		1 308 649-00

APPENDIX 4.3

(Item 1.7.3)

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31 MARCH 1958

RECEIPTS			PAYMENTS		
Sl No.	HEADS OF RECEIPTS	AMOUNT	Sl No.	HEADS OF EXPENDITURE	AMOUNT
	Rs	Rs			Rs
1.	Opening Balance:		1.	Pay of Officers	368 424.75
	i) Cash and Bank Balances	478 868.58	2.	Allowances of Officers	50 692.46
	ii) Deposits	<u>550 000.00</u>	3.	Provident Fund Contribution for Officers: i) Interest	10 040.00
		1 028 868.58		ii) Contribution	25 870.00
2.	Subscriptions:		4.	T.A. for: i) Officers	75 996.47
	a) i) For 1956	2 450.00		ii) Committee Members	11 858.24
	ii) For 1957	<u>154 532.92</u>	5.	Pay of Establishment	278 212.72
		156 982.92	6.	Allowances of Establishment	218 262.84
	b) For 1958	239 782.78	7.	Provident Fund Contribution for Staff: i) Interest	6 003.00
3.	Recovery of Bills for Sale of Publications	425 249.88		ii) Contribution	24 108.00
4.	Certification Marks Fees & Inspection Charges	38 797.06	8.	T.A. for Staff	10 753.29
5.	Contribution by ISI Employees to CHSS	4 529.75	9.	Subscription for ISO & IEC	6 549.08
6.	Interest on Investments	2 594.57	10.	Printing	325 026.94
7.	Miscellaneous Receipts	11 857.00	11.	Other Charges:	
8.	Advertisement in ISI Bulletin	25 774.36		i) Stationery	62 054.85
9.	Government Grant for:			ii) Postage & Telegrams	52 845.87
	i) Recurring Expenditure	940 000.00		iii) Library: a) Publications	15 659.07
	ii) Short paid during 1956-57	<u>46 500.00</u>		b) Other Expenses	2 215.32
		986 500.00		iv) Telephones	26 399.41
		2 920 936.90		v) a) Furniture	24 281.09
10.	Miscellaneous Credits	657 317.72		b) Office Equipment	49 981.16
				vi) Rent	30 766.56
				vii) Electric & Water Charges	3 239.27
				viii) Miscellaneous	36 485.73
				ix) Advertisement	12 817.38
				x) Audit Charges (Arrears)	228.74
				xi) Maintenance of Building	—
				xii) Medical Relief	18 605.55
				xiii) Maintenance of Staff Car	3 432.94
			12.	Conferences: i) National	15 789.65
				ii) International	—
			13.	Exhibition	10 478.66
			14.	Testing & Research: i) Research & Consultation	26 000.00
				ii) Certification Testing	1 987.11
			15.	Publicity	—
					1 805 066.15
			16.	Miscellaneous Remittances	666 086.16
			17.	Closing Balances: i) Deposits	80 000.00
				ii) Cash & Bank Balances	1 027 102.31
					3 578 254.62
		TOTAL		TOTAL	3 578 254.62
		<u>3 578 254.62</u>			<u>3 578 254.62</u>

APPENDIX 4.3 — Contd

(Item 1.7.3)

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 MARCH 1958

EXPENDITURE			INCOME		
Sl No.	HEADS OF EXPENDITURE	AMOUNT	Sl No.	HEADS OF INCOME	AMOUNT
		Rs			Rs
1.	Pay of Officers	368 424-75	1.	Income Other than Government Grant:	
2.	Allowances of Officers	50 879-96			
3.	Provident Fund Contribution for Officers: i) Interest	10 040-00			
	ii) Contribution	25 870-00	i)	Subscription:	
4.	TA for: i) Officers	79 846-03	a)	Collection during 1956-57	211 661-37
	ii) Committee Members	11 858-24	b)	Collection during 1957-58	156 988-12
5.	Pay of Establishment	278 222-72			368 649-49
6.	Allowances of Establishment	218 262-84	ii)	Sale proceeds of ISI Publications (Net)	443 839-06
7.	Provident Fund Contribution for Staff: i) Interest	6 003-00	iii)	Commission on Sale of Publications Other than ISI Publications (Net):	
	ii) Contribution	24 108-00	a)	BSI	29 406-09
8.	TA for Staff	10 753-29	b)	IRS & ISD	290-30
9.	Subscription for ISO & IEC	19 421-33	c)	ASTM	2 070-22
10.	Printing	336 453-19	d)	IEC	737-62
11.	Other Charges: i) Stationery	62 909-31	e)	ISO	109-98
	ii) Postage & Telegrams	49 534-65	f)	SAA	58-97
	iii) Library: a) Publications	—	g)	JIS	53-81
	b) Other Expenses	2 402-21	h)	CE	2-68
	iv) Telephones	26 399-41	j)	Miscellaneous	7 359-42
	v) a) Furniture	1 947-62			40 089-01
	b) Office Equipment	1 024-74	iv)	Certification Marks Fees & Inspection Charges	38 897-06
	vi) Rent	30 766-56	v)	Contribution by ISI Employees to CHSS	4 529-75
	vii) Electric & Water Charges	3 239-27	vi)	Interest on Investments	2 594-57
	viii) Miscellaneous	36 587-53	vii)	Miscellaneous Receipts	12 387-49
	ix) Advertisement	12 817-38	viii)	Advertisement in ISI Bulletin	30 483-14
	x) Audit Charges	1 398-74			941 469-57
	xi) Maintenance of Building	—	2.	Government Grant	986 500-00
	xii) Medical Relief	18 605-55		Less grant received for the year 1956-57 and Capitalized	46 500-00
	xiii) Maintenance of Staff Car	3 432-94			940 000-00
	xiv) Depreciation	23 728-03			
12.	Conferences: i) National	15 772-15			
	ii) International	—			
13.	Exhibition	10 478-66			
14.	Testing & Research: i) Research & Consultation	1 666-44			
	ii) Certification Testing	1 987-11			
15.	Publicity	*50 000-00			
		1 794 841-65			
	Excess of Income over Expenditure	86 627-92			
		<u>1 881 469-57</u>			
	TOTAL			TOTAL	<u>1 881 469-57</u>

*Only a provision for payment to be made to the Ministry of Information & Broadcasting towards the cost of the documentary film on the activities of ISI.

APPENDIX 4.3 — Contd

(Item 1.7.3)

BALANCE SHEET AS AT 31 MARCH 1958

LIABILITIES			ASSETS		
SL No.	Rs	AMOUNT Rs	SL No.	Rs	AMOUNT Rs
1. Advance Subscription for 1958		239 988-00	1. Cash: i) At the Banks:		
2. Contributory Provident Fund:			a) State Bank of India, Delhi/Calcutta/Madras	1 003 688-52	
i) Opening Balance	505 125-00		b) Bank of Baroda, Bombay	21 135-95	
ii) Deduct Withdrawals less Subscription during the year	41 071-00		ii) In Office (Including Imprest): Delhi/Bombay/Calcutta/Madras	2 277-84	
iii) Add Contribution (less Refunds) by the ISI during the year	464 054-00		iii) Postage Stamps	5 371-50	
iv) Add Interest	33 494-00		2. Investments: i) Fixed Deposits	80 000-00	1 032 473-81
3. Sundry Creditors:		512 710-00	ii) Contributory Provident Fund:		
i) Inland	140 628-72		a) National Savings Certificates	420 000-00	
ii) Abroad	106 828-06		b) Balance of Loans with Members	13 018-00	
4. ISI Building Fund:		247 456-78	c) Balance in Bank	79 692-00	592 710-00
i) Collection up to 31-3-1957	1 142 487-64		3. Sundry Debtors: i) Advance to Staff:		
ii) Collection during 1957-58	645 902-37	1 788 390-01	a) Conveyance	36 856-50	
5. 'K. L. Moudgill Prize' Fund		11 136-53	b) Miscellaneous	9 793-56	
6. Capital Account:			ii) Deposits:		
i) Balance Brought Forward	553 576-93		a) P & T Deptt., Bombay, Delhi & Calcutta (Balance Sheet Items)	75-00	
ii) Add Government Grant Less Paid for the year 1956-57	46 500-00		b) P & T Deptt., Madras during the year	70-00	
iii) Add Excess of Income over Expenditure during the year	86 627-92	686 704-85	c) NDMC	3 600-00	
			iii) Others	208 300-44	258 695-50
			4. Stock: i) Printing Paper in hand	50 690-93	
			ii) Library Books	87 887-75	
			iii) Furniture & Office Equipment	229 776-65	368 355-33
			5. Staff Car & Accessories		7 124-45
			6. ISI Building Project (Construction & Preliminary Expenses):		
			i) As at 31-3-1957	583 617-58	
			ii) During the year 1957-58	611 278-10	1 194 895-68
			7. Expenses Pre-paid:		
			i) Deputy Controller of Stationery, Calcutta	6 797-84	
			ii) Surveyor General of India, Calcutta	1 000-00	
			iii) National Physical Laboratory, New Delhi	23 333-56	
			iv) Government Central Wood Working Institute, Bareilly	1 000-00	32 131-40
					<u>3 486 386-17</u>
					<u>3 486 386-17</u>
					<u>3 486 386-17</u>

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

Sd. D. PANCHAPAGESAN
Assistant Audit Officer

Food, Rehabilitation, Supplies, Commerce, Steel & Mines, New Delhi

Sd. HARBANS LAL
Secretary (Administration)
Indian Standards Institution, New Delhi

APPENDIX 4.4

(Item 2.8)

ARTICLES COVERED BY STANDARD MARKS SPECIFIED DURING 1957-58

Sl. No.	PRODUCT/CLASS OF PRODUCT	NO. AND TITLE OF THE RELEVANT INDIAN STANDARD	NO. AND DATE OF THE GAZETTE NOTIFICATION
1.	Gum Spirit of Turpentine (Oil of Turpentine)	IS: 533-1954 Gum Spirit of Turpentine (Oil of Turpentine) (<i>Tentative</i>)	SRO 2031 dated 22.6.57
2.	Rosin (Gum Rosin)	IS: 553-1955 Rosin (Gum Rosin)	do
3.	Plywood Panels Tea-Chest	IS: 10-1953 Plywood Tea-Chests (<i>Revised</i>)	SRO 3475 dated 2.11.57
4.	Rectified Spirit Grade B	IS: 323-1952 Rectified Spirit	SRO 3941 dated 14.12.57
5.	Naphthalene	IS: 539-1955 Naphthalene	SRO 207 dated 18.1.58
6.	Pruning Knives, Hooked and Curved	IS: 619-1955 Pruning Knives, Hooked and Curved	SO 14 dated 15.2.58
7.	Copper Sulphate, Technical	IS: 261-1950 Copper Sulphate, Technical	SO 207 dated 15.3.58
8.	Denatured Spirit	IS: 324-1952 Denatured Spirit	do
9.	Threephase Induction Motors for Industrial Use	IS: 325-1956 Threephase Induction Motors for Industrial Use (<i>Amended</i>)	SO 279 dated 22.3.58
10.	Enamelled High-Conductivity Annealed Round Copper Wire (Oleo-Resinous Enamel)	IS: 449-1953 Enamelled High-Conductivity Annealed Round Copper Wire (Oleo-Resinous Enamel)	SO 331 dated 29.3.58
11.	BHC, Technical	IS: 560-1955 BHC, Technical	do

APPENDIX 4.5

[Item 2.8.2 iii(a)]

LICENCES ISSUED UNDER CERTIFICATION MARKS SCHEME DURING 1957-58

LICENCE NO.	NAME & ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)
CM/L-27 20-5-57	M/s. Electrical Manufacturing Co. Ltd., Calcutta	1-6-57 to 31-5-58	Hard-Drawn Stranded Aluminium and Steel-Cored Aluminium Conductors for Overhead Power Transmission Purposes (IS: 398-1953)
CM/L-28 26-6-57	M/s. Amco Batteries Private Ltd., Bangalore City	16-7-57 to 15-7-58	Lead-Acid Storage Batteries for Motor Vehicles, Light Duty (IS: 395-1952)
CM/L-29 1-7-57	M/s. Tata-Fison Private Ltd., Bombay	16-7-57 to 15-7-58	i) DDT Dusting Powders (IS: 564-1955) ii) DDT Water Dispersible Powder Concentrates (IS: 565-1955)
CM/L-30 11-7-57	The India Cements Ltd., Sankarnagar, Distt. Tirunelveli	16-7-57 to 15-7-58	Ordinary and Rapid-Hardening Portland Cement (IS: 269-1951)
CM/L-31 4-9-57	M/s. Tata-Fison Private Ltd., Bombay	16-9-57 to 15-9-58	i) BHC Dusting Powders (IS: 561-1955) ii) BHC Water Dispersible Powder Concentrates (IS: 562-1955)
CM/L-32 24-9-57	M/s. Pitamberdas Lallubhai & Co., Bombay	8-10-57 to 7-10-58	Wrought Aluminium Utensils (IS: 21-1953)
CM/L-33 28-10-57	The Aluminium Manufacturing Co. Private Ltd., Calcutta	4-11-57 to 3-11-58	Wrought Aluminium Utensils—Grade A and Grade B (IS: 21-1953)
CM/L-34 4-11-57	The National Insulated Cable Co. of India Ltd., Calcutta	16-11-57 to 15-11-58	Hard-Drawn Copper Solid and Stranded Conductors (IS: 282-1951)
CM/L-35 4-11-57	do	16-11-57 to 15-11-58	Bare Annealed Copper Wire (IS: 396-1953)
CM/L-36 4-11-57	do	16-11-57 to 15-11-58	Hard-Drawn Aluminium and Steel-Cored Aluminium Conductors for Overhead Power Transmission Purposes (IS: 398-1953)
CM/L-37 4-11-57	The National Insulated Cable Co. of India Ltd., Calcutta	16-11-57 to 15-11-58	Rubber-Insulated Cables and Flexible Cords for Electric Power and Lighting (for Working Voltages Up to and Including 11 kV) (IS: 434-1953)
CM/L-38 4-11-57	do	16-11-57 to 15-11-58	Cotton-Covered High Conductivity Annealed Copper Wire (IS: 450-1953)
CM/L-39 4-11-57	M/s. Rashtriya Metal Industries Ltd., Bombay	16-11-57 to 15-11-58	Wrought Aluminium Utensils—Grade A (IS: 21-1953)
CM/L-40 4-11-57	do	16-11-57 to 15-11-58	Aluminium Sheets, Strips and Circles—Grade A (IS: 21-1953)
CM/L-41 10-12-57	M/s. Carew & Co. Ltd., Asansol	16-12-57 to 15-12-58	Rectified Spirit—Grade A & Grade B (IS: 323-1952)

APPENDIX 4.7

[Item 2.8.2 iii(c)]

INDIAN STANDARDS FOR WHICH APPLICATIONS WERE RECEIVED FOR LICENCES UNDER THE ISI CERTIFICATION MARKS ACT DURING 1957-58

Sl. No.	No. and Title of the Indian Standard	Number of Applications Received	Sl. No.	No. and Title of the Indian Standard	Number of Applications Received
Engineering			20.	IS: 563-1955 DDT, Technical	1
1.	IS: 510-1953 Blacksmith's Anvils (Cast Steel)	1	21.	IS: 564-1955 DDT Dusting Powders	3
2.	IS: 530-1954 Solid Woven Impregnated Hair Belting for Power Transmission (<i>Tentative</i>)	1	22.	IS: 565-1955 DDT Water Dispersible Powder Concentrates	(2 grouped with IS: 564-1955)
3.	IS: 624-1955 Bicycle Rims (<i>Tentative</i>)	1	23.	IS: 632-1956 BHC Emulsifiable Concentrates	(1 grouped with IS: 561-1955)
Building			24.	IS: 633-1956 DDT Emulsifiable Concentrates	(1 grouped with IS: 564-1955)
4.	IS: 10-1953 Plywood Tea-Chests (<i>Revised</i>)	35	25.	IS: 873-1956 Liquid Glucose	1
5.	IS: 207-1950 Gate and Shutter Hooks and Eyes (<i>Tentative</i>)	1	26.	IS: 874-1956 Dextrose Monohydrate	1
6.	IS: 458-1956 Concrete Pipes (With and Without Reinforcement)	3	Structural and Metals		
Chemicals			27.	IS: 210-1950 Grey Iron Castings	1
7.	IS: 77-1950 Linseed Oil, Boiled, for Paints	1	28.	IS: 227-1954 Malleable Iron Castings	1
8.	IS: 98-1950 Oil Paste for Paints, Zinc Oxide	1	Electrotechnical		
9.	IS: 99-1950 Oil Paste for Paints, Zinc Oxide, Reduced	(Grouped with IS: 98-1950)	29.	IS: 282-1951 Hard-Drawn Copper Solid and Stranded Circular Conductors for Overhead Power Transmission Purposes (<i>Tentative</i>)	2
10.	IS: 261-1950 Copper Sulphate, Technical	1	30.	IS: 325-1956 Three-phase Induction Motors for Industrial Use (<i>Amended</i>)	1
11.	IS: 323-1952 Rectified Spirit	2	31.	IS: 370-1954 Reversible Type Two-Pin Plugs and Socket-Outlets Without Earthing Connections (<i>Tentative</i>)	1
12.	IS: 324-1952 Denatured Spirit	1	32.	IS: 371-1954 Two- and Three-Terminal Ceiling Roses (<i>Tentative</i>)	(Grouped with IS: 370-1954)
13.	IS: 388-1952 Hydroquinone, Photographic Grade (<i>Tentative</i>)	1	33.	IS: 395-1952 Lead-Acid Storage Batteries for Motor Vehicles, Light Duty (<i>Tentative</i>)	2
14.	IS: 442-1954 Drums for Paints	1	34.	IS: 398-1953 Hard-Drawn Stranded Aluminium and Steel-Cored Aluminium Conductors for Overhead Power Transmission Purposes (<i>Tentative</i>)	1
15.	IS: 533-1954 Gum Spirit of Turpentine (Oil of Turpentine) (<i>Tentative</i>)	1	35.	IS: 434-1953 Rubber-Insulated Cables and Flexible Cords for Electric Power and Lighting (for Working Voltages Up to and Including 11 kV) (<i>Tentative</i>)	2
16.	IS: 539-1955 Naphthalene	1			
17.	IS: 553-1955 Rosin (Gum Rosin)	(Grouped with IS: 533-1954)			
Agricultural and Food Products					
18.	IS: 561-1955 BHC Dusting Powders	3			
19.	IS: 562-1955 BHC Water Dispersible Powder Concentrates	(2 grouped with IS: 561-1955)			

APPENDIX 4.8

[Item 2.8.2 (vi)]

LIST OF TESTING LABORATORIES PROVISIONALLY APPROVED FOR THE PURPOSE OF CERTIFICATION MARKS SCHEME OF THE ISI AS ON 31 MARCH 1958

A. Central Government Laboratories		5.	Government of India Cordite Factory, Aravankadu, Nilgiris
1.	Central Waterways, Irrigation and Navigation Research Station, Post Box No. 18, Poona	6.	Government Test House, Alipore, Calcutta
2.	Forest Research Institute, P.O. New Forest, Dehra Dun	7.	Hirakud Research Station, Hirakud (Via Sambalpur)
3.	Geological Survey of India, 27 Chowringhee Road, Calcutta	8.	Indian Agricultural Research Institute, Pusa, New Delhi
4.	Government of India Assay Department and Silver Refinery Project, 47 Strand Road, Calcutta-7	9.	Indian Institute of Sugar Technology, Kanpur
		10.	Indian Lac Research Institute, Namkum, Ranchi

APPENDIX 4.8 — List of Testing Laboratories Provisionally Approved — *Contd*

- | | |
|---|--|
| <p>11. The Plant Quarantine and Fumigation Station, Directorate of Plant Protection, Quarantine and Storage, Hazi Bunder Road, Sewri, Bombay</p> <p>12. Railway Testing and Research Centre, Alambagh, Lucknow</p> <p>13. Technological Laboratory, Indian Central Cotton Committee, Matunga, Bombay-19</p> <p>B. Council of Scientific and Industrial Research Laboratories</p> <p>14. Central Building Research Institute, Roorkee (UP)</p> <p>15. Central Electro-Chemical Research Institute, Karai-kudi (S.I.)</p> <p>16. Central Food Technological Research Institute, Cheluvamba Mansion, V. V. Mohalla P.O., Mysore</p> <p>17. Central Fuel Research Institute, P.O. Jealgora, District Manbhum (Bihar)</p> <p>18. Central Glass and Ceramic Research Institute, P.O. Jadavpur College, Calcutta-32</p> <p>19. Central Leather Research Institute, Adyar, Madras</p> <p>20. Central Road Research Institute, Mathura Road, New Delhi</p> <p>21. National Metallurgical Laboratory, Jamshedpur</p> <p>22. National Physical Laboratory of India, Hillside Road, New Delhi</p> <p>23. Regional Research Laboratory, P.O. Regional Research Laboratory, Hyderabad-Dn.</p> <p>C. Commercial Private Laboratories</p> <p>24. The Engineering and Mineral Research Laboratory, Mines House, Malleswaram, Bangalore-3</p> <p>25. Messrs. Essen & Co., 550 Eighth Main Road, Malleswaram, Bangalore-3</p> <p>26. ITALAB Ltd., Meher House, 15 Cawasji Patel Street, Bombay-1</p> | <p>D. State Governments Laboratories</p> <p>27. Calcutta Electric Supply Corporation, Victoria House, Calcutta</p> <p>28. Chemical Testing and Analytical Laboratory, Industrial Estate, Madras-15</p> <p>29. Concrete and Soil Research Laboratory, Public Works Department, Chepauk, Madras</p> <p>30. Engineering Research Laboratories, Red Hills, Hyderabad-Dn</p> <p>31. Directorate of Electricity, Government of West Bengal, 1 Harish Mukherjee Road, Calcutta-20</p> <p>32. Harcourt Butler Technological Institute, Nawab Ganj, Kanpur</p> <p>33. Industrial Research Laboratory of the Government of West Bengal, Calcutta</p> <p>34. Irrigation & Power Research Institute, Punjab, Amritsar</p> <p>35. The Mysore Industrial and Testing Laboratory Ltd., Government of Mysore, I.T.L. Buildings, Malleswaram P.O., Bangalore</p> <p>36. Occupational Institute, Chintamani (Mysore)</p> <p>37. Silk Conditioning House, 2 Church Lane, Calcutta</p> <p>38. Sri Krishnarajendra Silver Jubilee Technological Institute, Bangalore</p> <p>39. Victoria Jubilee Technical Institute, Matunga, Bombay-19</p> <p>40. Wool Research Laboratory, Poona-4</p> <p>E. University and Research Institutions</p> <p>41. Department of Chemical Technology, University of Bombay, Matunga, Bombay-19</p> <p>42. Indian Association for the Cultivation of Science, 2 & 3 Lady Willingdon Road, Jadavpur, Calcutta-32</p> <p>43. Laxminarayan Institute of Technology, Nagpur University, Nagpur</p> <p>44. Shri Ram Institute for Industrial Research, 19 University Road, Delhi-8</p> |
|---|--|

APPENDIX 4.9

[*Item 2.8.2 (vii)*]

INDIAN STANDARDS ADOPTED BY VARIOUS GOVERNMENT DEPARTMENTS DURING 1957-58

The following abbreviations have been used to denote adopting authority/ies in this Appendix

- | | |
|---|---|
| <p>CSO Central Standards Office (now Research, Design & Standardization Organization, Ministry of Railways).</p> <p>DGOF Directorate General, Ordnance Factories.</p> | <p>DGSD Directorate General of Supplies & Disposals.</p> <p>DTD Directorate of Technical Development (Controller General of Defence Production), Ministry of Defence.</p> |
|---|---|

SL No. (1)	NO. AND TITLE OF INDIAN STANDARD (2)	ADOPTING AUTHORITY/IES (3)
---------------	---	-------------------------------

ENGINEERING

Tools

<p>1. IS: 552-1954 Smith Bits</p> <p>2. IS: 703-1956 Axes</p> <p>3. IS: 842-1956 Smith's Swages</p> <p>4. IS: 843-1956 Smith's Tongs</p> <p>5. IS: 846-1956 Smith's Flatters</p> <p>6. IS: 847-1956 Smith's Fullers</p>	<p>DTD</p> <p>DTD, DGSD</p> <p>CSO, DGSD</p> <p>DTD, DGSD</p> <p>CSO, DTD, DGSD</p> <p>DTD, DGSD</p>
---	--

Cutlery

<p>7. IS: 888-1956 Hollow Ground Razors, Open Type</p> <p>8. IS: 990-1957 Spoons, Stainless Steel</p>	<p>DTD, DGSD</p> <p>DGSD</p>
---	------------------------------

APPENDIX 4.9 — Indian Standards Adopted by Various Government Departments — *Contd*

Sl. No. (1)	No. AND TITLE OF INDIAN STANDARD (2)	ADOPTING AUTHORITY/IES (3)
----------------	---	-------------------------------

Cutlery — *Contd*

9.	IS: 991-1957	Spoons, Brass and Nickel Silver	DGSD
10.	IS: 992-1957	Forks (Table, Fish and Serving), Stainless Steel	DTD, DGSD
11.	IS: 993-1957	Forks (Table, Fish and Serving), Brass and Nickel Silver	DGSD
12.	IS: 994-1957	Fish Knives and Butter Knives	DTD, DGSD
13.	IS: 995-1957	Table Knives, Dessert Knives and Fruit Knives	DTD, DGSD

Machinery

14.	IS: 886-1957	Dimensions for Screw Threads (Below 6 mm)	DTD, DGSD
15.	IS: 1062-1957	Methods of Test for Sparking Plugs	DTD, DGSD
16.	IS: 1063-1957	14 mm Sparking Plugs	DTD
17.	IS: 1064-1957	Paper Sizes	DTD

BUILDING

Floor and Roof Coverings

18.	IS: 653-1955	Sheet Linoleum	DTD
19.	IS: 654-1957	Clay Roofing Tiles, Mangalore Pattern	DGSD
20.	IS: 657-1956	Materials for Use in the Manufacture of Magnesium Oxychloride Flooring Compositions (<i>Tentative</i>)	CSO, DGSD
21.	IS: 658-1956	Code of Practice for Magnesium Oxychloride Composition Floors	CSO, DGSD

Builder's Hardware

22.	IS: 205-1950	Butt Hinges (<i>Tentative</i>)	DTD
23.	IS: 206-1956	Tee and Strap Hinges	DTD
24.	IS: 725-1956	Copper Wire Nails	DTD, DGSD
25.	IS: 726-1956	Mild Steel Buckets for General Use and for Fire Fighting Purposes	DTD, DGSD, CSO
26.	IS: 729-1956	Brass Drawer Locks, Cupboard Locks and Box Locks	DGSD, CSO
27.	IS: 730-1956	Fixing Accessories for Corrugated Sheet Roofing	DGSD, CSO

Services Equipment and Accessories

28.	IS: 458-1956	Concrete Pipes (With and Without Reinforcement)	DGSD
29.	IS: 774-1956	Flushing Cisterns for Water Closets	DGSD
30.	IS: 775-1956	Brackets and Supports for Lavatory Basins and Sinks	DGSD
31.	IS: 776-1957	Water Closet Seats and Covers	DGSD
32.	IS: 779-1956	Water Meters with Threaded End Connections	CSO
33.	IS: 780-1956	Sluice Valves for Water Works Purposes	DTD, DGSD

Timber and Wood Products

34.	IS: 710-1957	Marine Plywood	DGSD
35.	IS: 883-1957	Code of Practice for Use of Structural Timber in Building (Material, Grading and Design)	DGSD

Building Design

36.	IS: 875-1957	Code of Practice for Structural Safety of Buildings: Loading Standards	DGSD
-----	--------------	--	------

General Civil Engineering

37.	IS: 785-1957	Reinforced Concrete Poles for Overhead Power and Telecommunication Lines	DGSD
38.	IS: 876-1957	Wood Poles for Overhead Power and Telecommunication Lines	DGSD, CSO

TEXTILE

Textile Test Methods

39.	IS: 19-1949	Procedures for Testing Cotton Textiles and Cordages (Other Than Jute) for Resistance to Attack by Micro-Organisms	DGOF
40.	IS: 241-1951	Method for Determination of Cotton Fabric Dimensions	DTD
41.	IS: 743-1955	Method for Determination of Moisture Content in Greasy Wool	DGSD
42.	IS: 967-1956	Method for Determination of Colour Fastness of Textile Materials to Acid Chlorination	DTD, DGSD
43.	IS: 968-1956	Method for Determination of Colour Fastness of Textile Materials to Acid Spotting	DGSD
44.	IS: 969-1956	Method for Determination of Colour Fastness of Textile Materials to Cross Dyeing: Wool	DGSD
45.	IS: 970-1956	Method for Determination of Colour Fastness of Textile Materials to Degumming	DGSD
46.	IS: 971-1956	Method for Determination of Colour Fastness of Textile Materials to Perspiration	DGSD, DTD
47.	IS: 972-1956	Method for Determination of Colour Fastness of Textile Materials to Potting	DGSD
48.	IS: 973-1956	Method for Determination of Colour Fastness of Textile Materials to Soda Boiling	DGSD

APPENDIX 4.9 — Indian Standards Adopted by Various Government Departments — *Contd*

Sl. No. (1)	NO. AND TITLE OF INDIAN STANDARD (2)	ADOPTING AUTHORITY/IES (3)
Textile Test Methods — <i>Contd</i>		
49.	IS: 974-1956 Method for Determination of Colour Fastness of Textile Materials to Steaming	DGSD
50.	IS: 975-1956 Method for Determination of Colour Fastness of Textile Materials to Sublimation	DGSD
51.	IS: 976-1956 Method for Determination of Colour Fastness of Textile Materials to Water Spotting	DGSD
52.	IS: 977-1956 Method for Determination of Colour Fastness of Textile Materials to Alkali Spotting	DGSD
53.	IS: 978-1956 Method for Determination of Colour Fastness of Textile Materials to Carbonizing with Sulphuric Acid	DGSD
54.	IS: 979-1957 Method for Determination of Colour Fastness of Textile Materials to Mercerizing	DGSD
55.	IS: 980-1957 Method for Determination of Colour Fastness of Textile Materials to Stoving	DGSD
56.	IS: 981-1957 Method for Determination of Colour Fastness of Textile Materials to Acid Milling	DGSD
57.	IS: 1039-1956 Methods for Estimation of Small Quantities of Copper, Iron, Manganese, Chromium and Zinc in Proofed Cotton Fabrics (<i>Tentative</i>)	DGSD
Cotton		
58.	IS: 186-1951 Cotton Mulls and Nainsook (<i>Tentative</i>)	DGOF
59.	IS: 750-1956 Handloom Cotton Lungies, Striped or Checked	DGSD
60.	IS: 889-1957 Handloom Worsted Bunting Cloth, Heavy	DGSD, DTD
61.	IS: 890-1957 Handloom Worsted Bunting Cloth, Light	DGSD
62.	IS: 891-1957 Handloom Worsted Shirting	DGSD
63.	IS: 892-1957 Handloom Woollen Blankets, Natural Grey	DGSD, DTD
64.	IS: 893-1957 Handloom Woollen Blankets, Ordinary, Plain or Check	DGSD
65.	IS: 894-1957 Handloom Woollen Blankets, Superior, Scarlet (Red)	DGSD
66.	IS: 895-1957 Handloom Woollen Blanketing Cloth	DGSD, DTD
67.	IS: 1045-1957 Cotton Fabric for Covering Plywood in Aircraft	DGSD, DTD
68.	IS: 1093-1957 Handloom Cotton Madras Handkerchiefs	DGSD
69.	IS: 1094-1957 Handloom Cotton Gada Cloth, Grey	DGSD
70.	IS: 1095-1957 Handloom Cotton Dress Material, Bleached, Dyed, Printed, Striped or Checked	DGSD
71.	IS: 1096-1957 Handloom Cotton Holland Cloth, Unscoured	DGSD
72.	IS: 1097-1957 Handloom Cotton Mosquito Netting, Bleached or Dyed	DGSD
73.	IS: 1098-1957 Handloom Cotton Cambric, Bleached	DGSD
74.	IS: 1099-1957 Handloom Cotton Lining Cloth, Dyed	DGSD
75.	IS: 1100-1957 Handloom Cotton Crepe, Bleached or Dyed	DGSD
76.	IS: 1101-1957 Handloom Cotton Cellular Shirting, Bleached or Dyed	DGSD
77.	IS: 1102-1957 Handloom Buckram Cloth	DGSD
Wool		
78.	IS: 32-1950 Code of Seaworthy Packaging of Woollen Textiles	DTD
Textile Mill Stores and Accessories		
79.	IS: 1042-1957 Boards for Lay Races of Jute Looms	DGSD
80.	IS: 1043-1957 Blanks for Lay Blocks for Jute Looms	DGSD
81.	IS: 1048-1957 Built Bobbins for Old-Type Dry Jute Spinning Frames	DGSD
Miscellaneous		
82.	IS: 898-1957 Coir Fibre (<i>Tentative</i>)	DGSD, DTD
CHEMICAL		
Chemicals, Heavy		
83.	IS: 214-1956 Coal Tar Solvent Naphtha, Heavy	DGSD
84.	IS: 295-1951 Bleaching Powder, Unstabilized	DGSD, DTD
85.	IS: 299-1951 Alumino-Ferric	DGOF
86.	IS: 307-1956 Carbon Dioxide, Industrial	DGSD, DTD
87.	IS: 309-1956 Compressed Oxygen Gas, Industrial	DGSD, DTD
88.	IS: 540-1956 Refined Cresylic Acid	DGSD
89.	IS: 798-1955 Orthophosphoric Acid, Technical	DGSD, CSO
90.	IS: 853-1956 Bone-Meal, Raw	DGSD
91.	IS: 1021-1956 Caustic Soda, Pure	DGSD, DTD
92.	IS: 1022-1956 Kotka Phosphate	DGSD
93.	IS: 1023-1956 Dicalcium Phosphate	DGSD
94.	IS: 1040-1957 Calcium Carbide, Technical	DGSD, DTD
95.	IS: 1049-1957 Alcohol, Perfumery Grade	DGSD
96.	IS: 1061-1957 Coal Tar Disinfectant Fluids, Black and White	DTD
97.	IS: 1065-1957 Bleaching Powder, Stable	DTD
98.	IS: 1092-1957 China Clay for Textile and Paper Industries	DGSD
Chemicals, Fine		
99.	IS: 248-1950 Sodium Bisulphite (Sodium Metabisulphite) (<i>Tentative</i>)	DTD
100.	IS: 869-1956 Ethylene Dichloride, Technical	DGSD
101.	IS: 879-1956 Sodium Nitrite, Technical	DGSD, DTD
102.	IS: 880-1956 Tartaric Acid	DTD
103.	IS: 1069-1957 Water for Storage Batteries	DGSD, DTD

APPENDIX 4.9 — Indian Standards Adopted by Various Government Departments — *Contd*

Sl No. (1)	No. AND TITLE OF INDIAN STANDARD (2)	ADOPTING AUTHORITY/IES (3)
Chemicals, Fine — <i>Contd</i>		
104.	IS: 1070-1957 Distilled Water	DGSD, DTD
105.	IS: 1078-1957 Copper Naphthenate	DGSD
Paints		
106.	IS: 58-1950 Litharge for Paints	DGOF
107.	IS: 100-1950 Oil Paste for Paints, for General Purposes, Black	CSO
108.	IS: 107-1952 Ready Mixed Paint, Brushing, Red Oxide-Zinc Chrome, Priming	DGSD
109.	IS: 163-1950 Ready Mixed Paint, Dipping, Fire Resisting for Gangways of Coaching Stock (1) Black, (2) Other Colours as Required	CSO
110.	IS: 496-1955 Internal Combustion Engine Lubricating Oils	DTD
111.	IS: 618-1956 Kegs (Open Top Drums) for Paints	DGSD
112.	IS: 640-1956 Ready Mixed Red Oxide Paint for Hessian (Colour Unspecified)	DGSD, CSO
Soaps		
113.	IS: 285-1951 Laundry Soap	DTD
Oils and Greases		
114.	IS: 409-1952 Grease, S. No. 3	DGSD
115.	IS: 506-1953 Grease, L/A No. 1	DGOF
116.	IS: 507-1953 Grease, L No. 3	DGSD
117.	IS: 720-1955 Grease, S. Hard, Loco	DGSD
Rubber Products		
118.	IS: 1001-1957 Fuel Pump Diaphragm Fabric, (a) Synthetic Rubber Proofed, (b) Varnish Proofed	DGSD, DTD
Leather and Leather Products		
119.	IS: 575-1956 Chrome Belt Lace Leather	DGSD
120.	IS: 622-1956 Russet Leather	DGSD, DTD
121.	IS: 1015-1956 Leather Pump Buckets Made from Vegetable Tanned Leather	DGSD
122.	IS: 1016-1956 Methods of Sampling and Test for Oil Tanned Leathers	DGSD, DTD
123.	IS: 1017-1957 Chamois Leather	DGSD, DTD
Coal and Coke		
124.	IS: 436-1953 Methods for Sampling of Coal and Coke (<i>Tentative</i>)	DGOF
125.	IS: 437-1956 Size Grading of Coal and Coke for Marketing (<i>Revised</i>)	DGOF
126.	IS: 439-1953 Hard Coke (<i>Tentative</i>)	DGOF
127.	IS: 770-1955 General Classification of Coal	DGSD
Office Stationery and Equipment		
128.	IS: 868-1956 Sealing Wax	DGSD, CSO, DTD
129.	IS: 1064-1957 Paper Sizes	DGSD, CSO
Glass and Glassware		
130.	IS: 878-1956 Graduated Measuring Cylinders	DGSD, DTD
Plastics		
131.	IS: 840-1956 Cashewnut Shell Liquid (CNSL)	DGSD
132.	IS: 867-1956 Methods of Sampling and Test for Phenolic Moulding Materials (<i>Tentative</i>) (Part I)	DGSD
AGRICULTURAL AND FOOD PRODUCTS		
Sugars		
133.	IS: 873-1956 Liquid Glucose	DGSD
Pest Control Products		
134.	IS: 632-1956 BHC Emulsifiable Concentrates	DGSD
135.	IS: 633-1956 DDT Emulsifiable Concentrates	DGSD
136.	IS: 885-1956 Common Names for Pesticides	DGSD, DTD
STRUCTURAL AND METALS		
Chemical Analysis		
137.	IS: 964-1956 Methods for Chemical Analysis of Silver Solder	DGSD, DTD
Pig Iron, Cast Iron and Malleable Cast Iron		
138.	IS: 227-1954 Malleable Iron Castings	DGSD
Steel and Steel Products		
139.	IS: 808-1957 Rolled Steel Section, Beams	DGSD
140.	IS: 1029-1956 Hot Rolled Steel Strips (Baling)	DGSD, DTD
141.	IS: 1030-1956 Steel Castings for General Engineering Purposes	DTD

APPENDIX 4.9 — Indian Standards Adopted by Various Government Departments — *Contd*

Sl No. (1)	NO. AND TITLE OF INDIAN STANDARD (2)	ADOPTING AUTHORITY/IES (3)
Aluminium and Aluminium Alloys		
142.	IS: 733-1956 Wrought Aluminium and Aluminium Alloys, Bars, Rods and Sections	DGSD, CSO, DTD
143.	IS: 734-1956 Wrought Aluminium and Aluminium Alloys, Forgings	DGSD, DTD
144.	IS: 735-1956 Wrought Aluminium and Aluminium Alloys, Forging Stock	DTD
145.	IS: 736-1956 Wrought Aluminium and Aluminium Alloys, Plates	DTD
146.	IS: 737-1955 Wrought Aluminium and Aluminium Alloys, Sheet and Strip	DGSD, CSO
147.	IS: 738-1956 Wrought Aluminium and Aluminium Alloys, Tube	DGSD, DTD
148.	IS: 739-1956 Wrought Aluminium and Aluminium Alloys, Wire	DTD
149.	IS: 740-1956 Wrought Aluminium and Aluminium Alloys, Rivet Stock	DGSD, DTD
Copper and Copper Alloys		
150.	IS: 1028-1956 Silicon Bronze Ingots and Castings	DGSD, DTD
Lead, Zinc, Antimony and Their Alloys		
151.	IS: 27-1956 Pig Lead (<i>Revised</i>)	CSO
Solders		
152.	IS: 24-1956 Brazing Solder (<i>Revised</i>)	DGSD
153.	IS: 192-1956 Silver Solder (<i>Revised</i>)	DGSD
154.	IS: 193-1956 Soft Solder (<i>Revised</i>)	DGSD
Welding		
155.	IS: 815-1956 Classification and Coding of Covered Electrodes for Metal Arc Welding of Mild Steel and Low Alloy High-Tensile Steels	DTD
Miscellaneous		
156.	IS: 728-1956 Methods for Determination of Weight, Thickness and Uniformity of Coating on Galvanized Articles Other Than Wires and Sheets	DTD, CSO

ELECTROTECHNICAL

Electrical Equipment and Accessories

157.	IS: 693-1955 Varnished Cambric Insulated Cables for Electricity Supply (<i>Tentative</i>)	CSO
158.	IS: 694-1955 PVC Cables and Cords for Electric Power and Lighting for Working Voltages Up to and Including 650 Volts to Earth (<i>Tentative</i>)	CSO
159.	IS: 731-1956 General Requirements and Methods of Test for Porcelain Insulators for Overhead Lines with a Nominal Voltage of 1 000 Volts and Above (<i>Tentative</i>)	DGSD, CSO
160.	IS: 1025-1957 Glossary of Terms for Primary Cells and Batteries	DGSD

Radio Equipment and Components

161.	IS: 616-1957 Code of Safety Requirements for Mains Operated Radio Receivers	DGSD
162.	IS: 824-1956 Series of Preferred Values for Capacitors and Resistors	DGSD
163.	IS: 825-1956 Colour Code for Fixed Resistors	DGSD
164.	IS: 1031-1957 Methods of Measurements on Loudspeakers and Loudspeaker Systems	DGSD, DTD
165.	IS: 1032-1957 General Requirements and Tests for Pressure Unit Operated Horn Loudspeaker Systems	DTD
166.	IS: 1033-1957 General Requirements and Tests for Direct Radiator Moving Coil Loudspeakers	DGSD, DTD
167.	IS: 1036-1957 6-Volt Accumulator-Operated Community Radio Receivers	DGSD

MISCELLANEOUS

Unclassified

168.	IS: 196-1950 Atmospheric Conditions for Testing	DTD
169.	IS: 787-1956 Guide for Inter-Conversion of Values from One System of Units to Another	DGSD, DTD, CSO
170.	IS: 1020-1957 Conversion Tables for Ordinary Use	DTD
171.	IS: 1056-1957 Commercial Metric Weights	DGSD, CSO

APPENDIX 4.10

(Item 3.2)

LIST OF INDIAN DELEGATES AND ISO MEETINGS ATTENDED BY THEM

Sl No.	NAME OF DELEGATE	MEETING	VENUE	DATE
1.	Shri V. K. Ahuja	ISO/TC 65 — Manganese Ores	Moscow	20-22 Nov 1957
2.	Mr. A. L. Blackwood	ISO/TC 45 — Rubber	Zürich	30 September to 5 October 1957
3.	Prof. C. A. Geneve	ISO/TC 80/SC 2 — Safety Symbols	The Hague	21-22 Nov 1957
4.	Shri R. Ghosh	ISO/TC 44/SC 3 — Filler Materials and Electrodes	Paris	23-25 May 1957
5.	Shri R. Goburdhun	ISO/TC 59 — Building Construc- tion and ISO/TC 59/SC 1 — Modular Co-ordination	Paris	3-7 June 1957
6.	Mr. W. C. Hancock	ISO/TC 75 — Stretchers and Stretcher Carriers	London	8-9 October 1957
7.	Mr. D. A. James	ISO/TC 74 — Hydraulic Binders	Brussels	30 September to 2 October 1957
8.	Shri T. V. Joseph	ISO/TC 1 — Screw Threads ISO/TC 77 — Asbestos Cement Products	Lisbon Paris	2-4 May 1957 9-12 April 1957
9.	Major P. B. Kapur	ISO/TC 81 — Common Names for the Pest Control Chemicals ISO/TC 75 — Stretchers and Stretcher Carriers	London London	18-20 Sep 1957 8-9 October 1957
10.	Shri M. W. Lalchandani	ISO/TC 2 — Bolts, Nuts and Accessories	Vienna	15-17 Oct 1957
11.	Dr. A. S. Mannadi Nayer	ISO/TC 81 — Common Names for the Pest Control Chemicals ISO/TC 75 — Stretchers and Stretcher Carriers	London London	18-20 Sept 1957 8-9 October 1957
12.	Mr. E. P. Nicolaides	ISO/TC 74 — Hydraulic Binders	Brussels	30 September to 2 October 1957
13.	Mr. P. J. O'Leary	ISO/TC 2 — Bolts, Nuts and Accessories	Vienna	15-17 Oct 1957
14.	Shri P. Rajagopalachari	ISO/TC 61 — Plastics	Burgenstock	8-13 July 1957
15.	Shri W. L. Roberts	ISO/TC 81 — Common Names for Pest Control Chemicals	London	18-20 Sep 1957
16.	Shri R. K. Rokade	ISO/TC 45 — Rubber	Zürich	30 September to 5 October 1957
17.	Mr. W. H. Rooksby	ISO/TC 77 — Asbestos Cement Product	Paris	9-12 April 1957
18.	Shri Y. Sankaranarayanan	ISO/TC 61 — Plastics	Burgenstock	8-13 July 1957
19.	Shri D. M. Sen	ISO/TC 10/SC 1 — Drawings (General Principles)	Milan	22-25 May 1957
20.	Mr. T. R. Shields	ISO/TC 44 — Welding	Paris	2-7 Dec 1957
21.	Mr. Swami	ISO/TC 24 — Sieves	Frankfurt	11-16 Nov 1957
22.	Shri P. Vaidyanathan	ISO/TC 55 — Resinous Lumber	Moscow	20-22 Nov 1957
23.	Dr. Lal C. Verman	ISO/TC 19 — Preferred Numbers ISO Standing Committee for the Study of Scientific Principles of Standardization (STACO) ISO Planning Committee (PLACO) ISO Council and Working Group on Agricultural Products ISO/TC 85 — Nuclear Energy (Attended as Observer)	Paris Lisbon Geneva Geneva Geneva	13-15 June 1957 24-27 June 1957 20-24 July 1957 22-26 July 1957 29 July-1 August 1957
24.	Shri P. S. Vishwanathan	ISO/TC 44/SC 3 — Filler Mate- rials and Electrodes	Paris	23-25 May 1957
25.	Mr. Wilfred	ISO/TC 24 — Sieves	Frankfurt	11-16 Nov 1957

(Continued from cover page 2)

STAFF

(As on 31 March 1958)

Director: LAL C. VERMAN

Joint Director: A. N. GHOSH

Extra Assistant Director: T. PURNANANDAM

ENGINEERING DIVISION

Deputy Director J. P. MEHROTRA
Assistant Director M. V. PATANKAR
Extra Assistant A. K. CHATTOPADHYAY
Director
Section Officer K. SRI RAM

TEXTILE DIVISION

Deputy Director MAHARAJ KISHEN
Extra Assistant R. S. PRAYAG
Director
Extra Assistant T. BALAKRISHNAN
Director
Section Officer S. P. BHALLA

AGRICULTURAL AND FOOD PRODUCTS DIVISION

Assistant Director C. N. MODAWAL
Extra Assistant P. H. RAMANATHAN
Director

ELECTROTECHNICAL DIVISION

Assistant Director Y. S. VENKATESWARAN
Extra Assistant S. SRINIVASAN
Director
Section Officer CHANDER SAIN

CERTIFICATION MARKS SECTION

Deputy Director D. V. KARMARKAR
Extra Assistant A. S. CHEEMA
Director
Extra Assistant A. P. BANERJI
Director
Section Officer P. CHATTERJEE

BUILDING DIVISION

Deputy Director C. S. CHANDRASEKHARA
Assistant Director D. AJITHA SIMHA
Extra Assistant S. P. RAMAN
Director
Extra Assistant C. R. RAMA RAO
Director

CHEMICAL DIVISION

Deputy Director SADGOPAL
Assistant Director D. DAS GUPTA
Section Officer K. P. KHANNA

STRUCTURAL AND METALS DIVISION

Assistant Director B. S. KRISHNAMACHAR
Extra Assistant H. N. KRISHNAMURTHY
Director
Extra Assistant H. C. SHARMA
Director
Extra Assistant A. P. SIVARAMAKRISHNAN
Director

STATISTICAL SECTION

Assistant Director A. K. GUPTA
Extra Assistant B. N. SINGH
Director
Extra Assistant S. R. KUPPANNA
Director

PUBLICATIONS SECTION

Chief Editor JAINATH KAUL
Extra Assistant S. P. BATTOO
Director
Extra Assistant G. P. SRIVASTAVA
Director
Extra Assistant V. H. RAM
Director

PUBLIC RELATIONS SECTION

Assistant Director B. L. BHATIA
Section Officer (S & D) R. S. SODHI
Section Officer (PR) P. H. GAJWANI

PUBLICITY SECTION

Assistant Director J. S. GULATI

ADMINISTRATION SECTION

Secretary HARBANS LAL
Section Officer V. S. MATHUR
(Admin)
Section Officer G. L. BHATIA
(Accounts)
Section Officer (Estt) LAJPAT RAI

BRANCH OFFICE, BOMBAY

Assistant Director A. B. RAO

BRANCH OFFICE, CALCUTTA

Assistant Director S. K. SEN

BRANCH OFFICE, MADRAS

Assistant Director G. L. GULATI

PUBLICATIONS OF INDIAN STANDARDS INSTITUTION

INDIAN STANDARDS

Over 1000 Indian Standards, broadly classified under the following heads, have been issued so far:

Engineering

Bicycle Components
Cutlery
General Engineering
Machinery
Miscellaneous Items
Sports Goods
Tools

Building

Bitumen, Tar and Tar Products
Builder's Hardware
Building Design
Cement and Concrete
Floor and Roof Coverings
General Civil Engineering
Lime and Gypsum
Miscellaneous Items
Refrigeration and Air-Conditioning
Services Equipment and Accessories
Timber and Wood Products

Textile

Cotton
Jute
Miscellaneous Items
Silk

Textile Mill Stores and Accessories
Textile Test Methods
Wool

Chemical

Coal and Coke
Essential Oils
General Chemicals
Glass and Ceramic Wares
Inks, Paper and Other Allied Products
Leather and Leather Goods
Metal Containers
Oils, Fats and Soaps
Paints, Printing Inks, Lac and Allied Materials
Petroleum Products and Lubricants
Rubber — Plastics and Allied Products

Agricultural & Food

Cereal Products
Confectionery
Dairy Products
Food Grain Storage
Pest Control Products
Starches
Sugars

Structural & Metals

Chemical Analysis
Non-Ferrous Metals
Ores
Physical Tests
Pig Iron, Cast Iron and Malleable Cast Iron
Refractories
Solders
Steel and Steel Products
Welding
Design and Construction

Electrotechnical

Electrical Line Materials
Electrical Rotating Machinery
Electronics and Radio Equipment
Heavy Electrical Equipment
Light Electrical Equipment

Miscellaneous

Conversion Tables and Guide for Conversion to Metric System
Documentation
Metric Weights and Measures
Quality Control and Industrial Statistics

OTHER PUBLICATIONS

	Rs
ISI Bulletin (Published Every Two Months)	
Single Copy	2.00
Annual Subscription	6.00
Annual Reports (from 1948-49 Onwards)	2.00 each
Report of the ISI Special Committee on Weights and Measures	2.00

ISI Handbook 1957 with 1958 Addendum (Rs 3.00 per copy), gives brief reviews and other particulars of Indian Standards

Available from:

INDIAN STANDARDS INSTITUTION

Headquarters

Manak Bhavan, 9 Mathura Road, New Delhi 1

Phones : 45915-9
43063-4

Grams : 'Manaksanstha' New Delhi

Bombay Branch Office

4th Floor, 40/40A Cawasji
Patel Street
Fort, Bombay 1

Phone: 252782

Grams: 'Manaksanstha' Bombay

Calcutta Branch Office

P-II Mission Row Extension
Calcutta 1

Phone: 23-1823

Grams: 'Manaksanstha' Calcutta

Madras Branch Office

2/21 First Line Beach
Madras 1

Phone: 3836

Grams: 'Manaksanstha' Madras