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INDIAN STANDARDS INSTITUTION (ISI)

FOURTEENTH ANNUAL REPORT

APRIL 1960—MARCH 1961



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INDIAN STANDARDS INSTITUTION (ISI)

R. P. Mohapatra / 5/

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FOURTEENTH ANNUAL REPORT

APRIL 1960—MARCH 1961



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

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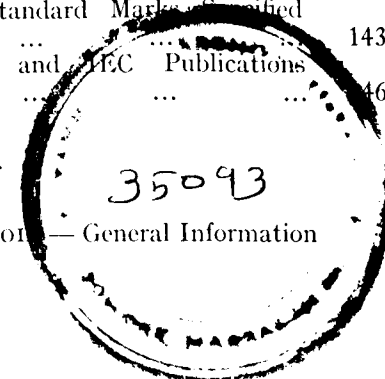


IEC IN NEW DELHI — TWENTYFIFTH GENERAL MEETING INAUGURATED BY VICE-PRESIDENT OF INDIA

CONTENTS

	PAGE
PART I GENERAL REVIEW	5
PART II DIVISIONAL REPORTS	13
1. Introduction	13
2. Agricultural and Food Products Division	13
3. Building Division	19
4. Chemical Division	29
5. Electrotechnical Division	40
6. Engineering Division	46
7. Structural and Metals Division	52
8. Textile Division	61
9. Sectional Committees Under the Executive Committee	67
10. Metric Cell	68
11. Certification Marks Division	68
12. Implementation Division	72
13. Statistical Section	77
14. Research and Investigations	78
PART III INTERNATIONAL ACTIVITIES	81
1. International Organization for Standardization, ISO	81
2. International Electrotechnical Commission, IEC	99
3. Second Middle East Standardization Conference 1961 — Cairo	106
PART IV APPENDICES	109
A Indian Standards Published and in Press During 1960-61	111
B Audited Accounts for the Year 1960-61	122
C New Licences Issued Under ISI Certification Marks Scheme During 1960-61	128
D Articles Covered by Standard Marks Certified During 1960-61	143
E ISO Recommendations and IEC Publications Issued During 1960-61	146

INDIAN STANDARDS INSTITUTION — General Information



FOURTEENTH ANNUAL REPORT

OF THE
INDIAN STANDARDS INSTITUTION
(APRIL 1960 — MARCH 1961)

ACKNOWLEDGEMENT

Indian Standards Institution takes the opportunity of expressing its deep appreciation for the specialized technical assistance and financial support received during the year under review from the ever-growing circle of its members, and other individuals and organizations interested in its work, whose valuable contributions have made ISI what it is today.

The pattern of this growing co-operative activity is an index of the all-round realization that through standardization lies the road to industrial progress and trade efficiency, ultimately leading to economic advancement of the country.

Encouraged by the faith reposed in, and conscious of the expectations from it, the Institution looks forward, with confidence, to the future of its working in progressive partnership with interests representing trade, industry, science, technology and Government.

PART I GENERAL REVIEW

THE ANNUAL REPORT of the Indian Standards Institution for the year 1960-61 marks the completion of its Second Five-Year Plan and the end of 14 years of its existence in the service of industry, trade and commerce.

With the gradual but sustained development of national economy through planned efforts, greater utility of standardization has been realized in different sectors of economic activity in the country. Standards consciousness has increased and greater cognizance is being taken of the valuable services rendered by the Institution. This, in turn, has resulted in ever-increasing demand for formulation of Indian Standards on various subjects to cope with the economic and industrial growth of the nation.

The Institution, on its part, has not lagged behind in meeting the demand for Indian Standards within the available resources at its command. Through organized and intensive efforts, both in the Directorate as well as in the committees, ISI was able to maintain, as in the previous year, its record of exceeding the target for production of Indian Standards. During the year under review, 246 new Indian Standards were adopted and sent to press, and 18 standards were revised. The target set for this year in the Second Five-Year Plan was 200 standards.

An important event of the Institution's activities during the year under report was the creation of a separate Implementation Division whose express function would be to bring about widespread implementation of national standards in different sectors of Indian economy.

As in the past, the Institution continued to play a leading role in standardization activities at the international level, and during the year under report, ISI played host to important international meetings in New Delhi. For the first time in its history of about 60 years, the International Electrotechnical Commission held its Annual General Meeting on Asian soil. Also, some important technical committees of the International Organization for Standardization held grouped meetings in New Delhi.

The General Council of the Institution held its annual session on 23 March 1961 under the chairmanship of its President, Shri Lal Bahadur Shastri, Union Minister for Commerce & Industry. The Executive and Finance Committees held five meetings each during the year.

Published Standards — At the end of the year under report, the total number of Indian Standards published and under print reached the figure of 1 673. During the year 246 new standards as against 216 in the last year were sent to the press, and 18 standards were revised and eight standards withdrawn. Lists of new and revised standards, and of standards withdrawn are given in Appendix A (see p. 111 and 121).

The large increase in the number of standards produced by ISI may be ascribed to the enhancement and strengthening of committee system through which the Institution works. The total number of committees, subcommittees and panels increased from 887 to 972 with total membership rising from 9 878 to 11 287.

Membership — The number of subscribing members of the Institution rose from 1 946 to 2 065 during the year 1960-61, showing a net increase of 119. The revenue earned through this source was Rs 6.03 lakhs against Rs 4.31 lakhs in the previous year. The following table gives the growth of ISI membership during the last five years:

Year (1 April to 31 March)	Number of Subscribing Members	Subscription Received (in lakhs of rupees)
1956-57	1 347	
1957-58	1 510	3.36
1958-59	1 770	3.69
1959-60	1 946	3.99
1960-61	2 065	4.31
		6.03

Third Five-Year Plan of ISI — The Third Five-Year Plan of the Institution, prepared and submitted to the Government of India during the year 1959-60, for scrutiny by the Planning Commission, was finalized during the year under report.

According to the Plan, activities of the Institution are expected to be increased to two-fold its present level. The rate of formulation of Indian Standards would be gradually increased reaching the figure of 500 in the last year of the Plan; and the total number of standards in force by the end of the Third Five-Year Plan is expected to reach the mark of 3 500.

The Plan includes the creation of two additional divisions, namely Consumers Products Division and Laboratory Division; and the establishment of three additional Branch Offices.

The Plan, which has received the approval of the Planning Commission, has a total outlay (including capital expenditure of Rs 32.5 lakhs) of Rs 275.9 lakhs out of which Rs 159.0 lakhs will be contributed by the Government of India and the balance of Rs 116.9 lakhs would be collected from different sources of direct income, such as sale of ISI publications, membership subscription, certification marking fee, etc. A proposal has also been submitted to the Planning Commission through the Ministry of Commerce &

Industry for a special loan of Rs 150 lakhs for building housing accommodation for staff members of the Institution.

ISI Certification Marks Scheme — During the period under report — the sixth year of operation of ISI Certification Marks Scheme — the ISI Mark was increasingly recognized, both by producers and consumers, as an effective instrument for safeguarding their respective interests. The scheme has also been of assistance in promoting exports and in gaining confidence of foreign buyers. The number of licences rose from 184 to 289 and the number of applications received from 417 to 609.

By the end of the year, products of an annual value of 40 crores of rupees covered by 93 Indian Standards had been brought under the Scheme as compared to 59 Indian Standards at the end of the previous year.

Besides the increase in the number of applications and licences, greater recognition to ISI Mark by purchase organizations, particularly, in the State Government sector was observed. The Governments of West Bengal, Punjab, Maharashtra and Himachal Pradesh issued instructions to their respective departments to give preference in their purchases to the goods bearing the Standard Mark. The Governments of Uttar Pradesh, Madras, Orissa and Andaman & Nicobar had already issued such instructions in the previous year.

The Ministry of Commerce & Industry circulated to all Union Ministries, State Governments, etc, for favourable consideration the following recommendation, made by the General Council of ISI at its meeting on 26 March 1960:

'Government of India having decided to make purchases on the basis of Indian Standards, wherever such standards are available, it will be of advantage if all State Governments, Semi-Government bodies and industrial and commercial undertakings in the private and public sectors adopt a similar policy. It is, therefore, recommended that Government of India may be moved to secure to the maximum extent possible that, whenever goods bearing ISI Certification Mark are available, all purchasing and consuming organizations and departments in the public and private sectors preferably accept such goods without duplicate inspection of their own, considering that the certification mark is allowed to be applied only after proper inspection and ensuring continuous check of quality during the process of production.'

An important landmark in the history of certification marking in India was the decision to introduce ISI Certification Marks Scheme for the entire quantity of steel produced to Indian Standards by the six major plants, namely Tata Iron & Steel Co. Ltd., Indian Iron & Steel Co. Ltd., three plants of Hindustan Steel Ltd., at Rourkela, Bhilai and Durgapur; and Mysore Iron & Steel Works at Bhadravati. The ISI Certification Marks Scheme for steel will replace the practice hitherto followed in designating steel as tested or untested; it will be operated through the agency of the Directorate of Inspection, Metallurgy (of the Directorate General of Supplies and Disposals) under the overall supervision of ISI.

Implementation of Indian Standards — With the object of getting greater recognition for Indian Standards in the country's trade and industry, by way of their adoption by organized purchasers and consumers as well as by the industry, both in the public and private sectors, a separate Implementation Division was set up in September 1960.

As on 31 March 1961, the total number of Indian Standards adopted amounted to 1 389 as against 1 173 at the end of the previous year, registering an increase of 216 in the year under review.

The measures taken during the year included two conferences on implementation of Indian Standards held at the State level in Himachal Pradesh and Bihar, respectively, which made strong recommendations for adoption of Indian Standards by various departments of the State Governments and local bodies.

An important event worthy of mention was the action taken to popularize Indian Standards in foreign countries with a view to giving fillip to our export trade (see p. 75).

Library and Information Services — The libraries of the Institution at the Headquarters and in Branch Offices at Bombay, Calcutta and Madras continued to render useful service to ISI members and others, disseminating knowledge about standards and other relevant activities both in India and abroad. The ISI Library at Headquarters has now one of the largest collection of standards from over 40 countries, the total number of publications being of the order of 95 000.

During the year under review, over 10 000 standards and other technical publications were accessioned, and 300 technical-cum-trade journals were received.

The facilities of ISI libraries are regularly utilized by various committees and members of the Institution as well as by different Government departments, private organizations, etc. About 30 000 standards and other publications were either consulted or loaned out of the library at the Headquarters and 76 bibliographies were prepared for use of committee members and technical personnel. Information pertaining to standards and other relevant literature on various subjects, both in India and abroad, was collected and supplied in reply to numerous enquiries which averaged about 20 per day.

The ISI Bulletin, a bi-monthly magazine of the Institution dealing with standards activities in India and abroad, continued to perform useful function of disseminating information on standards movement and registered a continuous growth in volume and coverage.

Another information medium of ISI is the monthly Standards News which lists new and revised standards, both Indian and foreign, published during the course of the month and for which ISI holds sales agencies. Standards News continued to render useful service, and with the growth in standardization activities, greater utility was derived by the readers.

Branch Offices — The three Branch Offices of the Institution located in the important industrial centres of Bombay, Calcutta and Madras continued to perform useful functions of serving the industry, trade and commerce in their respective zones. With the development of economic activities, the scope and coverage of the Branch Offices have increased considerably.

The Branch Office at Calcutta was provided with new and extended accommodation which, apart from allowing more space for the staff, has the provision of a committee room for holding meetings of technical committees. Such committee rooms have already been provided in Bombay and Madras Branch Offices.

Publicity — The Publicity section of the Institution explored new horizons during the year. Aiming at widespread standards consciousness among the public and popularization of the ISI Certification Mark, a much larger number of press notes on standards, draft standards and certification marks was released. A number of articles and write-ups concerning standardization in general and activities of ISI in particular were published in various newspapers and technical journals.

With the co-operation of ISI members, some of whom donated space and money for ISI advertisements, a series of press advertisements was released to important newspapers, journals, year-books, and telephone and trade directories. With a view to enlightening the common man about the activities of ISI and making him standards conscious, ISI advertisements were, for the first time, released to newspapers and journals in Indian languages. Besides a number of pamphlets and brochures, including one in Tamil language, relating to the activities of ISI, were distributed on various occasions.

Another noteworthy feature of the publicity campaign was the display of ISI panels and posters at important railway stations.

During the course of the international meetings, both of the International Electrotechnical Commission (IEC) and International Organization for Standardization (ISO), held in New Delhi in the months of October-November 1960 and February 1961 respectively, an intensified publicity campaign was carried out through press releases as well as radio broadcasts by eminent Indian and foreign experts to acquaint the public with the aims and importance of these meetings in particular and of ISI and standardization in general.

Through the courtesy of the Southern India Chamber of Commerce and Industry, ISI participated in the All-India Industrial and Commercial Exhibition held at Madras in which the objects and achievements of the Institution and general advantages of standardization were high-lighted through posters, cartoons, drawings, paintings and exhibits of certified and uncertified goods.

Finances — A certified statement of accounts for the year under review appears in Appendix B (see p. 122) of this report. Total income of ISI from various sources, such as contribution of the Government of India, membership subscription, sale of standards and certification marks fee

PART II DIVISIONAL REPORTS

1. INTRODUCTION

1.0 Part II of the report gives, in brief, the record of the technical work done by different Divisions/Sections of the Institution during the year 1960-61.

1.1 During the year under review, 242 proposals for formulation of Indian Standards were received, out of which 209 proposals (this figure includes a few proposals made during the previous year) were accepted and referred to various committees for further action.

1.2 The progressive growth of the activities of ISI as reflected by the number of committees set up, meetings held, and the increases in committee membership is illustrated in Fig. 1. Similarly, Fig. 2 indicates the progress actually made in terms of Indian Standards published and draft Indian Standards circulated.

1.3 Table I gives cumulative information about the number of committees set up, number of meetings held, new standards published and under print, amendments to standards issued, and draft standards issued during the year under review in respect of each Division/Section.

2. AGRICULTURAL AND FOOD PRODUCTS DIVISION

2.1 During the year under report, the Division continued to serve the growing agricultural and food products industry in the country. In all, 31 new standards were either published or sent for printing (*see* Appendix A).

**TABLE I RECORD OF ISI TECHNICAL DIVISIONS
(FOR THE YEAR 1960-1961)**

(For details of standards published and under print during 1960-61, *see* Appendix A)

DIVISION OR SECTION	NO. OF COMMITTEES	NO. OF MEETINGS	NEW STANDARDS AND REVISED STANDARDS PUBLISHED AND UNDER PRINT	AMENDMENTS TO STANDARDS	DRAFT STANDARDS CIRCULATED
Agricultural & Food Products	94	67	31	22	37
Building	141	85	49	4	46
Chemical	237	143	60	14	81
Electrotechnical	86	90	24	18	25
Engineering	131	67	28	1	29
Structural & Metals	135	39	41	8	62
Textile	128	67	30	17	45
Miscellaneous	20	46	1	1	5
TOTAL	972	604	264	85	330

countries helps towards international understanding and co-operation, the need for emphasis on this aspect of international relationship was appropriately recognized. Apart from local visits, special trips to Agra and Bhakra Nangal were organized during the meeting-fortnight as also a post-meeting All-India tour covering about 5 000 km in which over a hundred of the overseas visitors participated. A special train took delegates to Varanasi, Asansol, Tatanagar, Calcutta, Bhubaneswar, Visakhapatnam, Madras, Mettur Dam, Bangalore Cantt. and Bombay.

The holding of the IEC meetings in New Delhi was a unique occasion. For the IEC, this first meeting on Asian soil in its long history served to emphasize the spreading of the movement and the world-wide importance of its work. For ISI, it was the first occasion to arrange for the holding of an international conference of this magnitude, but it is gratifying to note that with the appreciative response and helpful co-operation of the delegates, the planned efforts of ISI achieved success to which the General Secretary, IEC, Mr. L. Ruppert, gave expression when he remarked, 'It is my feeling, which I know is shared by all those who participated in the meeting, that, thanks to the unparalleled efficiency of your local organization, the New Delhi meeting has in every respect been one of the most successful in the IEC history, this opinion being fully supported by the numerous and valuable technical results which have been achieved'.

A detailed report on these IEC Meetings was published in the Jan-Feb 1961 issue of *ISI Bulletin*.

Group Meeting of ISO Committees — At the invitation of ISI, the International Organization for Standardization held meetings of the following Technical Committees, Subcommittees and Working Groups in Manak Bhavan, ISI, from 15 to 24 February 1961:

ISO/TC 88 Pictorial Marking of Handling Instructions for Goods

ISO/TC 50 Lac

ISO/TC 34/SC 7 Spices and Condiments

ISO/TC 30/SC 1 Measurement of Liquid Flow in Open Channels

ISO/TC 30/SC 1/WG 1

ISO/TC 30/SC 1/WG 4

The Indian Standards Institution being the Secretariat of these committees and working groups, provided the secretarial assistance. In all, 91 delegates, including 17 delegates from 7 foreign countries, participated in these meetings.

To enable the delegates to utilize their spare time profitably, a series of local visits of historical and technical importance were arranged and most of the delegates availed themselves of this opportunity. Besides local visits, excursions to Taj Mahal-Agra, Roorkee-Chandigarh-Bhakra, Poona and Coimbatore were also arranged during and after the meetings for the benefit of the delegates.

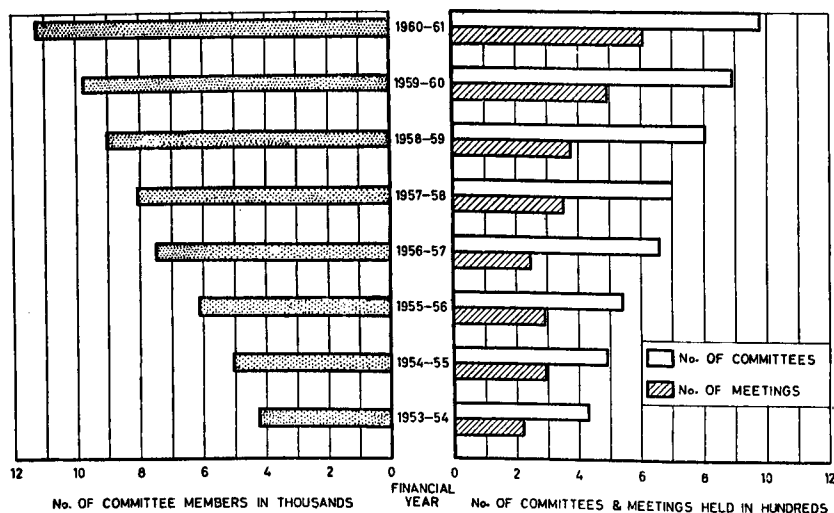


FIG. 1 GROWTH OF ACTIVITIES OF COMMITTEES

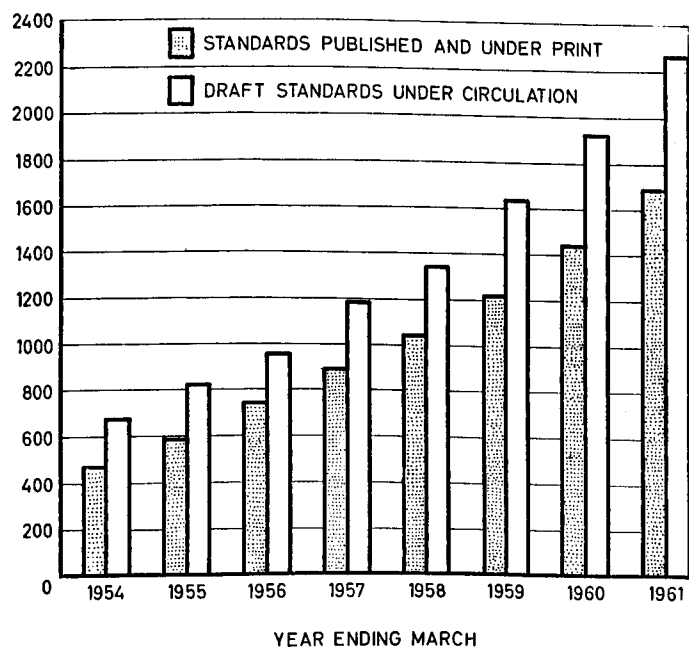


FIG. 2 GROWTH OF STANDARDS

Among the highlights of the work accomplished by the Division was the publication of Indian Standards on food colours, meat and meat products, and infant foods. This work was undertaken at the specific request of the Union Ministry of Health to guard the health of the Nation. Work was also started on the formulation of standards for pest control equipment used largely for the application of pesticides in the fields of agriculture and public health.

An important event worthy of mention during the year under review was the first meeting of the Subcommittee for Spices and Condiments (ISO/TC 34/SC 7) of the International Organization for Standardization which was held in Manak Bhavan, New Delhi, from 20 to 23 February 1961, at the invitation of the Indian Standards Institution, the Secretariat of the Subcommittee. A brief report of the work of the Subcommittee is given at page 87.

2.2 The Division Council held its annual meeting on 20 March 1961 when three new sectional committees to deal with important subjects of carriage of monkeys by air, soft drinks, and cereals and pulses were set up, and 67 new subjects were included in its programme of work.

2.3 A brief account of the work of the Division is given below:

Food Grain Storage Structures and Regulated Market Yards —

Two draft layouts for regulated market yards for (a) cattle, and (b) fruits and vegetables were finalized, while another draft standard for aluminium food grain storage bins was sent out in wide circulation.

Standards Published

- IS: 603-1960 Code of Practice for Construction of Underground Rural Food Grain Storage Structures
- IS: 605-1960 Code of Practice for Construction of Food Grain Storage Structures Suitable for Trade and Government Purposes for the Central Region

Work in Hand

- | | |
|---|---|
| Hexagonal Concrete Bins for Bulk Storage | Flat Storage |
| Layout for Regulated Market Yards for Tobacco Silos | Fork Lifts for Stacking Food Grain Bags |
| | Prefabricated Aluminium Seed Grain Storage Bins |

Sugar

Standard Published

- IS: 1679-1960 Sugar Used in Food Preservation Industry

Work in Hand

- Code of Practice for Construction of Sugar Godowns

Edible Starches, Confectionery and Cereal Products

Standards Published/Under Print

- IS: 1667-1960 Toffees
- IS: 1668-1960 Lozenges

Work in Hand

Desiccated Coconut

Chicory Powder

Apiary — One proposed draft for comb foundation sheet was approved for wide circulation.

Standards Published

IS: 1735-1960 Hive Stand

IS: 1736-1960 Honey Extractor, Tangential Type

Work in Hand

Travelling Bee Box

Honey Filters

Primary Pasteurization Units

Honey Extractor (Radial Type)

Postal Bee Packages

Honey

Comb Foundation Mill

Dairy — Three draft standards, covering (a) aluminium milk cans, (b) aluminium milking pails, and (c) methods of test for dairy industry — Part II: chemical examination of milk, were finalized; two drafts for malted milk powder and methods of test for dairy industry — Part III: bacteriological examination of milk, were put into wide circulation; and one proposed draft for methods of test for dairy industry — Part IV: freezing point of milk, was approved for wide circulation.

Standards Published

IS: 1613-1960 Milk Bottle Crates

IS: 1656-1960 Processed Cereal Infant Foods

IS: 1657-1960 Special Infant Foods

IS: 1705-1960 Aluminium Foil for Milk Bottle Caps

IS: 1733-1960 Aluminium Milk Strainers

Work in Hand

Manually-Operated Can Washer

Can Washing Trough

Batch Pasteurizer (Aluminium)

Aluminium Milk Vats

Malted Milk Beverage Containing Cocoa

Milk Receiving Tank

Milk Storage Tank/Vats (Insulated)

Surface Cooler (Tubular)

Bottle Fillers, Hand

Bottle Washers, Hand

Ghee Boilers (Steam Jacketed)

Cheese Vats

Ice Cylinders (Chambers) for Milk Cans

Bottle Capper, Hand

Batch Pasteurizer

Pipettes Used for Dairy Bacteriological work

Methods of Test for Dairy Industry —

Part V: Dairy Plant Control

Casein Precipitation Tank

Casein Press

Casein Drier

Casein Grinder

Casein Grader

Cheese Hoops

Dispensing Cans

One Piece Milk Cans

Butter Churn (Wooden), Hand

Butter Trolley

Butter Moulding Machine, Hand

Butter Scoops

Butter Moulds, Hand

Ice Cream Cans

Cheese Knives

Curd Mills

Casein Mincer

Ice Cream Freezer

Aluminium Foil for Packaging of

Dairy Products

Aluminium Foil Caps

Stainless Steel Milking Pails

Stainless Steel Milk Strainers

Butter Worker

Butter Scotch, Hand

Cheese Press

Laboratory Furniture for Dairy Bacteriological Work

Layout Plan for a Dairy Laboratory

for Routine Testing of Milk

Rohrig Tube

Tobacco Products — Draft standard for *bidis* was issued into wide circulation.

Standards Published/Under Print

IS: 1577-1960 Cigarettes (from Indian Tobacco)

IS: 1578-1960 Smoking Mixtures

IS: 1769-1961 Cigars and Cheroots

IS: 1770-1961 Chuttas (Country Cheroots)

Work in Hand

Snuff Tobacco

Bidi-Cigarettes

Hooka Tobacco

Chewing Tobacco

Flue-Curing Tobacco Barn Construction and Equipment

Animal Feeds

Standards Published

IS: 1664-1960 Mineral Mixture for Supplementing Cattle Feeds

IS: 1712-1960 Cotton Seed Oilcake as Livestock Feed

IS: 1713-1960 Decorticated Groundnut Oilcake as Livestock Feed

IS: 1714-1960 Methods of Sampling and Test for Oilcakes as Livestock Feed

Work in Hand

Bone Meal

Mustard and Rape Oilcake as Livestock Feed

Rice Bran

Wheat Bran

Fish Meal

Meat Meal

Green Feeds

Copra Oilcake as Livestock Feed

Linseed Oilcake as Livestock Feed

Sesamum (*Til*) Oilcake as Livestock Feed

Safflower Oilcake as Livestock Feed

Oyster Shell Meal

Shark Liver Oil for Feeding Animals

Guwar Meal

Maize Bran

Tur Chuni

Rice Polish

Balanced Feed Mixtures

Gram Chuni

Gram Husk

Meat and Meat Products

Standards Published/Under Print

IS: 1723-1960 Pork

IS: 1743-1960 Meat of Sheep and Goats Canned in Brine

Work in Hand

Methods for *Ante-Mortem* and *Post-Mortem* Examination of Meat

Animals

Animal Casings for Sausages

Canned Mackerel in Oil

Pomfret Canned in Oil

Ham

Bacon

Sausages

Canned Sausages

Canned Pork Products
Mutton and Goat Meat Frozen
Mutton and Goat Meat Fresh
Mutton and Goat Meat in Curry
Mutton and Goat Meat Canned
Beef and Buffalo Flesh, Fresh
Beef and Buffalo Flesh, Frozen

Beef and Buffalo Flesh, Canned
Dehydrated Meat
Poultry Products
Slaughter Houses
Dried, Salted Mackerel
Canned, Dried and Frozen Prawns
Canned Sardines in Oil

Food Colours

Standards Published

IS: 1694-1960 Tartrazine
IS: 1695-1960 Sunset Yellow FCF
IS: 1696-1960 Amaranth
IS: 1697-1960 Erythrosine
IS: 1698-1960 Indigo Carmine
IS: 1699-1960 Methods of Sampling and Test for Coal Tar Food Colours

Work in Hand

Annatto	Curcumin
Ponceau 4R	Red 6B
Carmoisine	Red FB
Cochineal or Carmine	Acid Magenta II
Carotin and Carotenoids	Fast Red E
Chlorophyll	Blue VRS
Lactoflavin	Brilliant Black BN
Caramel	Methods of Sampling and Test for
Ratanjot	Coal Tar Food Colours — Part II
Saffron	Henna (Powder and Leaves)

Farm Implements and Machinery — Two proposed drafts for (a) paddy weeders, rotary type; and (b) sugarcane crushers, bullock driven type were approved for wide circulation.

Work in Hand

Transplanting Spades and Seprangs	Plough Complete (Including Blades)
Mould Board Plough	Interculturing Implements
Chaff Cutters	Bund Former
Persian Wheel (Peg and Gear Drive)	Seed Drills
Harrow and Parts	Pruning Saws and Secateurs
Thresher	Cleaning Out Knife
Winnowing Fans	Skiffing Knife
Disc Plough	Clasp Pruning Knife
Ridge Plough	Rubber Draining and Tapping Knife
Cultivator	Matchet
Wheels and Axles for Animals Drawn	Bill Hook, Single and Double
Carts	Dhows of all Types (Jungle Cutting
Hedge Shears	and Transplanting)
Rakes	Sickles

Spices and Condiments — Six draft proposals for (a) cardamom, (b) black pepper, (c) ginger, (d) curry powder, (e) methods of sampling and test for spices and condiments, and (f) terminology for spices and condiments were issued into wide circulation.

Work in Hand

Chillies
Celery Seed
Fennel Seed
Coriander

Cumin Seed
Cloves
Turmeric
Mustard Powder

Propagation Materials

Work in Hand

Seeds of Important Crops like Wheat, Maize, Rice, etc
Seeds of Temperate Type Vegetables like Cabbage, Cauliflower, etc
Seed Potatoes
Sugar Cane Setts

Grafts of Fruit (Apple, Mango, Citrus, etc) and Runners of Banana
Budded Grafts and Seedlings of Ornamental Flowers like Rose, Chrysanthemum, etc

Fruits and Vegetables

Work in Hand

Fresh Fruits
Fresh Vegetables
Processed Fruits and Vegetables

Arecanuts
Packaging, Storage and Transport of Fruits and Vegetables

Pest Control Products and Equipment — Three drafts, namely, (a) liquid amine salts of 2, 4-D; (b) diazinon, technical; and (c) malathion, technical; were issued in wide circulation.

Standards Published

IS: 1665-1960 Cuprous Oxide Water Dispersible Powder Concentrates
IS: 1669-1960 Cuprous Oxide Dusting Powders
IS: 1682-1960 Cuprous Oxide, Technical (Fungicidal Grade)

Work in Hand

Household Insecticidal Spray
Compression Sprayer — Hand
Single Barrel Stirrup Pump
Endrin Dusting Powders
Endrin Water Dispersible Powder Concentrates
Toxaphene
Parathion, Technical
Power Sprayer

Chest Type Dusting Machines
Dusting Machines — Shoulder Type
Bucket Sprayer
Compression Sprayer
Rotary Duster — Hand
Bellows or Plunger Duster
Foot and Rocking Sprayer
Knapsack Sprayer
Anti Malarial Sprayer

3. BUILDING DIVISION

3.1 The Building Division continued to meet the heavy demands made on it for formulation of Indian Standards. A number of important projects was brought to a successful conclusion while many others were taken up for formulation of Indian Standards. In all, 49 Indian Standards were either published or sent to press during the year under report (see Appendix A).

3.2 Among the important subjects covered by Indian Standards during the year under report, particular mention may be made of prestressed concrete; prestressed concrete poles; various aspects of fire safety of buildings; building drainage; coniferous sawn timber intended for further conversion; plywood for general purposes; laying damp-proof coursing using bitumen felts; cement and cement lime plaster finishes on walls and ceilings; rules for grading cut sizes of timber; room air-conditioners; fire fighting equipment and appliances; mild steel and medium tensile steel and hard drawn steel wire for concrete reinforcement; and various items of builders' hardware. Formulation of recommendations for standard methods of test for small clear specimens of timber, plywood and dry sieving are also some of the achievements of significance.

3.3 The new items included in the programme of work during the year included RCC manhole covers; automatic flushing cisterns; bath tube; surface boxes for valves; acid resisting ceramic floor tiles; perforated clay bricks; sandstone slab for use as flooring and lining; timber for lorry bodies and cooling towers; marine timber for further conversion; grading rules for teak logs and sawn timber; timber for use in aircraft propeller construction; dead-lock and special security locks; packaged air-conditioners; cooling towers; different items of construction plant and machinery, etc; and codes of practice for reinforced concrete and prestressed concrete structures for the storage of liquids, selection, installation and erection of concrete poles; selection, installation and maintenance of sluice valves; fixing of timber doors and windows; etc.

3.4 In view of the developments taking place in the field of clay products, the Building Division set up Clay Products Sectional Committee to deal with items, such as bricks, tiles, stoneware pipes, etc.

3.5 A short account of the work done in different fields is given below:

Cement and Concrete — The publication of the code on prestressed concrete met the long-felt need of the designers and contractors in the country. The draft specification for steel pipes, coated and lined with cement mortar, was put into wide circulation. Work on the revision of IS: 383-1952 Specification for Coarse and Fine Aggregates from Natural Sources for Concrete and IS: 456-1957 Code of Practice for Plain and Reinforced Concrete for General Building Construction registered good progress.

Standards Published

IS: 1343-1960 Code of Practice for Prestressed Concrete
IS: 1592-1960 Specification for Asbestos Cement Pressure Pipes
IS: 1626-1960 Asbestos Cement Building Pipes, Gutters and Fittings (Spigot and Socket Type)
IS: 1678-1960 Specification for Prestressed Concrete Poles for Overhead Power Traction and Telecommunication Lines

Work in Hand

Revision of:
IS: 383-1952 Coarse and Fine Aggregates from Natural Sources for Concrete

Revision of:
IS: 455-1953 Portland Cement Specification for Blastfurnace Slag

Revision of:
IS: 456-1957 Code of Practice for Plain and Reinforced Concrete for General Building Construction
IS: 458-1956 Specification for Concrete Pipes With and Without Reinforcement
IS: 459-1955 Unreinforced Corrugated Asbestos Cement Sheets
Portland Pozzolana Cement

Steel Pipes Lined and Out-Coated With Cement Concrete or Mortar
Hollow Load Bearing Concrete Blocks
Reinforced Concrete Dust Bins
Code of Practice for Reinforced Concrete and Prestressed Concrete Structures for the Storage of Liquids
Prestressed Concrete Street Lighting Columns

Concrete Reinforcement — Two draft specifications for cold drawn wire and alloy steel bars for prestressed concrete were finalized.

Standards Published

IS: 432-1960 Specification for Mild Steel and Medium Tensile Steel Bars and Hard-Drawn Steel Wire for Concrete Reinforcement (*Revised*)
IS: 1566-1960 Specification for Hard-Drawn Steel Wire Fabric for Concrete Reinforcement

Work in Hand

Cold Twisted Steel Bars for Concrete Reinforcement
High Tensile Steel Bars Used for Prestressed Concrete

Building Lime — One draft standard dealing with the use of lime in masonry mortar was put into wide circulation and another dealing with the use of lime in concrete will be put into wide circulation shortly.

Standards Published

IS: 1624-1960 Code of Practice for Field Testing of Building Lime and Lime Mortar
IS: 1635-1960 Code of Practice for Field Slaking of Lime and Preparation of Putty

Work in Hand

Code of Practice for Manufacture of Lime in Mixed-Feed Vertical Kilns
Code of Practice for Design and Installation of Lime Kilns

Pozzolana — The publication of the Indian Standard Methods of Test for Pozzolanic Materials which provides a uniform basis for assessing the characteristics of various pozzolanic materials available in the country was hailed by the building industry.

Standard Published

IS: 1727-1960 Methods of Test for Pozzolanic Materials

Work in Hand

Fly Ash for Use in Cement Concrete

Building Stones — A draft standard glossary of terms relating to occurrence, quarrying and dressing of stone was finalized.

Standard Published

IS: 1706-1960 Method for Determination of Resistance to Wear by Abrasion of Natural Building Stones

Work in Hand

Method of Test for Surface Softening of Natural Building Stones by Exposure to Acidic Atmospheres

Classification and Distribution of Natural Building Stones
Sandstone Slab for Use in Flooring and Lining

Building Bricks — Progress was made in the formulation of an Indian Standard dealing with manufacture of hand-made common burnt building bricks. It is hoped that this standard when published, would provide the much-needed guidance in the selection of raw materials and manufacture of bricks.

Work in Hand

Perforated Bricks
Code of Practice for Manufacture of Hand-Made Common Burnt-Clay Building Bricks

High-Grade Building Bricks
Design and Installation of Brick Kilns

Timber — A separate subcommittee to deal with timber stores was set up.

Standards Published

IS: 190-1960 Coniferous Sawn Timber Intended for Further Conversion (*Second Revision*)
IS: 287-1960 Recommendations for Maximum Permissible Moisture Content of Timber Used for Different Purposes in Different Climatic Zones (*Revised*)
IS: 1629-1960 Rules for Grading Cut Sizes of Timber
IS: 1708-1960 Methods of Testing Small Clear Specimens of Timber

Work in Hand

Revision of:

IS: 399-1952 Classification of Commercial Timbers and Their Zonal Distribution
IS: 401-1954 Code of Practice for Preservation of Timber
IS: 620-1954 General Requirements for Tool Handles
IS: 876-1957 Wood Poles for Overhead Power and Telecommunication Lines (*This would include a section on Jointed Wood Poles*)

Methods of Testing Efficacy of Preservatives
Methods of Testing Wood Poles
Sampling and Presentation of Data for Testing of Timber

Timber for Use in Aircraft Construction
Timber for Use in Aircraft Propeller Construction
Timber for Ladders (Portable)
Marine Timber for Further Conversion
Timber for Lorry Bodies
Grading Rules for Teak Logs
Grading Rules for Sawn Timber
Wooden Sleepers
Wooden Tent Pins
Code of Practice for:
Preservation of Bamboos and Canes for Non-Structural Uses
Sawing of Timber

Wood Products — It was felt that it would be advantageous to codify all the methods of test for various requirements of plywood in a

comprehensive manner leaving only test requirements of each type of plywood to be covered in individual standards already published. With this end in view, IS: 1734-1960 Methods of Test for Plywood was published.

Standards Published

IS: 303-1960 Plywood for General Purposes (*Revised*)
IS: 1658-1960 Fibre Hard Boards
IS: 1659-1960 Block Boards
IS: 1706-1960 Wood Wool for General Packaging Purposes
IS: 1734-1960 Methods of Test for Plywood

Work in Hand

Pencil Slats

Chip Boards

Tar and Bitumen — Samples of materials covered by the following published Indian Standard Specifications (except IS: 218-1951) were tested at various laboratories to evaluate the properties of different grades of tar and bitumen and the results incorporated in their draft revisions which were issued into wide circulation for comments:

IS: 73-1950 Asphaltic Bitumen and Fluxed Native Asphalt for Road Making Purposes
IS: 212-1950 Crude Coal Tar for General Use
IS: 215-1951 Road Tar
IS: 216-1951 Coal Tar Pitch
IS: 217-1951 Cutback Bitumen
IS: 218-1951 Creosote and Anthracene Oil for Use as Wood Preservatives
IS: 454-1953 Digboi Type Cutback Bitumen
IS: 702-1955 Blown Type Bitumen

Work in Hand

Uses of Bitumen Road Emulsions

Fuel Oil Suitable as Diluents with Creosote

Floor and Roof Coverings

Standards Published

IS: 1580-1960 Bitumen (Plastic) for Waterproofing Purposes
IS: 1609-1960 Code of Practice for Laying Damp-Proof Coursing Using Bitumen Felts

Work in Hand

Preformed Expansion Joints for Concrete (Non-Extruding and Resilient Type — Bitumen Impregnated Fibre)
Hot Applied Sealing Compounds for Concrete Joints

Revision of IS: 653-1955 Sheet Linoleum
Revision of IS: 654-1957 Clay Roofing Tiles, Mangalore Pattern
Mastic Asphalt for Waterproofing

Building Finishes — Two Indian Standards covering cement and cement lime plaster finishes and mason's tools for plaster work were

published. The former is the most common finishing material in buildings and the latter would help the production of quality tools to achieve satisfactory workmanship.

Standards Published

- IS: 1630-1960 Masons' Tools for Plaster Work and Pointing Work
- IS: 1650-1960 Indian Standard Colours for Building and Decorative Finishes
- IS: 1661-1960 Code of Practice for Cement and Cement Lime Plaster Finishes on Walls and Ceilings

Work in Hand

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| <ul style="list-style-type: none"> Code of Practice for: Finishing of Wood and Wood Based Materials in Buildings Finishing of Iron and Steel in Buildings (Part II): Schedule and Equipment Painting of Non-Ferrous Metals In-Situ Terrazzo Finish | <ul style="list-style-type: none"> Code of practice for: External Rendered Finishes on Concrete Lime Plaster Finish Mud Plaster Finish Gypsum Plaster Finish Wall Papering |
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Building Construction Practices

Standard Published

- IS: 1634-1960 Code of Practice for Design and Construction of Wood Stairs

Work in Hand

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| <ul style="list-style-type: none"> Code of Practice for: Design and Construction of Simple Spread Foundations Design and Construction of Pile Foundations Heavy Foundations (Other than Pile Foundations) Construction of Brick Masonry Construction of Stone Masonry Construction of Concrete Block Masonry Construction of Gypsum Block Partitions Dense Concrete Construction Light-Weight Concrete Construction In-Situ Construction of Walls in Buildings with Soil-Cement Use of Fixing Devices in Solid Walls and Ceilings Use of Fixing Devices in Cavity Construction Fixing Wall Coverings Construction of Timber Walls and Partitions Construction of Jack-Arch Type of Built-Up Floor | <ul style="list-style-type: none"> Code of practice for: Construction of Madras-Terrace Type of Built-Up Floor Construction of Timber Floors Construction of Stone Slab and Beam Floor Construction of Reinforced Concrete Shell Roofs Fixing Timber Roof Coverings Fixing Tiled Roof Coverings Fixing Sheet Roof Coverings Fixing Ceiling Coverings Fixing Roof Lights Flat Roof Finish: Mud <i>Phuska</i> Flat Roof Finishing: Lime Concrete Finish Construction of Fire Places, Hearths, Flues and Chimneys for Domestic Appliances Nail Jointed Timber Construction Use of Structural Timber in Buildings (Construction and Erection) Revision of IS: 883-1957 Use of Structural Timber in Building (Material, Grading and Design) |
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Builder's Hardware — With the changeover to the metric system, revision of standards on the various items of builder's hardware was undertaken during the year under report and the work registered good progress.

Standards Published

- IS: 1568-1960 Wire Gauze for General Purposes
- IS: 1728-1960 Sheet Metal Rainwater Pipes Up to 100 mm Nominal Size, Gutters, Fittings and Accessories

Work in Hand

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| <ul style="list-style-type: none"> Floor Door Stopper Fanlight Pivots Mortice Locks Revision of: IS: 204-1950 Mild Steel and Brass Door Bolts, Tower and Barrel Types IS: 205-1950 Butt Hinges IS: 206-1950 Tee and Strap Hinges IS: 208-1950 Door Handles IS: 275-1957 Padlocks (<i>Revised</i>) IS: 281-1951 Sliding Door Bolts for Use with Padlocks IS: 362-1951 Parliament Hinges | <ul style="list-style-type: none"> Revision of: IS: 363-1951 Hasps and Staples, Safety and Wire Types IS: 364-1956 Fanlight Catch IS: 451-1953 Wood Screws IS: 723-1956 Mild Steel Wire Nails IS: 725-1956 Copper Wire Nails IS: 726-1956 Mild Steel Buckets for General Use and for Fire Fighting Purposes IS: 729-1956 Brass Drawer Locks, Cupboard Locks and Box Locks IS: 1018-1957 M-Type Brass Padlocks IS: 1019-1957 Rim Latches |
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Doors, Windows and Building Furniture

Work in Hand

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| <ul style="list-style-type: none"> Timber Flush Door Shutters Venetian Blinds for Windows Aluminium Doors, Windows and Ventilators Aluminium Industrial Windows | <ul style="list-style-type: none"> Steel Shelving Racks Wooden Tables and Desks for General Office Purposes Materials for Furniture Constructed Mainly of Wood |
|---|---|

Terminology, Notations and Drawings — Four sections of the draft code of building terminology were prepared. A draft schedule of unit weights of building materials in the metric system was put into wide circulation for comments.

Functional Requirements of Buildings — Considerable work was done on the formulation of a series of Codes of Practice relating to fire safety of buildings. Six Indian Standards were published, while others were at different stages of preparation, two of them, namely, Codes of Practice for Fire Safety of Buildings (General): (a) Electrical Installations and (b) Fire Fighting Equipment and Its Maintenance Including Construction and Installation of Fire Proof Doors (IS: 1646-1961 and IS: 1648-1961 respectively) were sent to press. A new subcommittee to deal with functional criteria for design of structures was set up.

Standards Published

- IS: 1641-1960 Code of Practice for Fire Safety of Buildings (General): General Principles and Fire Grading
- IS: 1642-1960 Code of Practice for Fire Safety of Buildings (General): Materials and Details of Construction
- IS: 1643-1960 Code of Practice for Fire Safety of Buildings (General): Exposure Hazard
- IS: 1644-1960 Code of Practice for Fire Safety of Buildings (General): Personal Hazard

IS: 1645-1960 Code of Practice for Fire Safety of Buildings (General): Chimneys, Flues, Flue Pipes and Hearths
 IS: 1647-1960 Code of Practice for Fire Safety of Buildings (General): Non-Electric Lighting Equipment, Oil and Gas Heaters and Burners of Small Capacity

Work in Hand

Revision of IS: 875-1957 Code of Practice for Structural Safety of Buildings: Loading Standards
 Structural Safety of Buildings — Foundations
 Structural Safety of Buildings — Masonry Walls
 Code of Practice for:
 Fire Safety of Non-Industrial Buildings
 Fire Safety of Industrial Buildings
 Daylighting of Non-Industrial Buildings
 Sound Insulation of Buildings (Houses, Flats and Schools)
 Heat Insulation of Dwellings,

Code of practice for:
 Schools, Hospitals and Office Buildings
 Orientation of Buildings
 Ventilation of Dwellings
 Aseismic (Earthquake Resistant) Design of Structures
 Functional Criteria for Design of:
 Shell Structures and Folded Plates
 Single-Storey Buildings
 Multi-Storey Buildings
 a) Industrial Buildings
 b) Non-Industrial Buildings
 Prestressed Concrete Sections
 Storage Structures
 Arches

Library Buildings, Fittings and Furniture

Work in Hand

Code of Practice for Library Fittings and Furniture

Water Supply and Sanitation — The draft code for building drainage in which considerable interest was shown by municipalities, sanitary engineers, and health authorities was finalized for publication. Work was also initiated on a code of practice for construction, operation and maintenance of septic tanks, which attempts to unify different practices of design, construction and maintenance of septic tanks, followed in the country.

Standards Published

IS: 774-1960 Flushing Cisterns for Water Closets and Urinals (Valveless Siphonic Type) (Revised)
 IS: 1700-1960 Drinking Fountains
 IS: 1701-1960 Mixing Valves for Ablutionary and Domestic Purposes
 IS: 1711-1960 Self-Closing Taps
 IS: 1726-1960 Cast Iron Manhole Covers and Frames Intended for Use in Drainage Works
 IS: 1742-1960 Code of Practice for Building Drainage

Work in Hand

Pillar Taps
 Ball Valves (Horizontal — Plunger Type) Including Floats for Water Supply Purposes
 Water Meter Boxes
 Water Meters with Flanged End Connections
 Sluice Valves (350 mm to 1 200 mm Size) for Water Works Purposes

Polythene Tubes for General Supply Purposes
 Code of Practice for:
 Water Supply and Plumbing
 Selection and Installation of Sanitary Appliances
 Design and Construction of Septic Tanks for Domestic Purposes

Code of Practice for:
 Selection, Installation and Maintenance of Water Meters
 Revision of:
 IS: 651-1955 Salt Glazed Stone-ware Pipes and Fittings

Revision of:
 IS: 779-1956 Water Meters with Threaded End Connections (Domestic Type)
 IS: 780-1956 Sluice Valves for Water Works Purposes

Electrical Installation and Illumination — The draft code for installation, operation and maintenance of electric passenger and goods lifts was brought to the stage of finalization. The draft code of practice for design of street lighting installations was also finalized for publication.

Work in Hand

Code of Practice for Interior Illumination

Refrigeration and Air-Conditioning — The specification for room air-conditioners was published during the year. The publication of this standard was eagerly awaited by the air-conditioning industry in the country which has been registering rapid development during the last few years. This standard will help to establish minimum standards of performance of room air-conditioners and to provide means for establishing reliable ratings. Further progress was also made in the collection of climatic data for air-conditioning purposes in different regions in the country. This data, when compiled and published, will be of considerable assistance to the air-conditioning industry and also to the other allied industries.

Standard Published

IS: 1391-1960 Room Air-Conditioners

Work in Hand

Design Conditions for Air-Conditioning in Various Parts of India
 Ice Cans
 Ice Tanks
 Ice-Cream and Ice Candy Machines

Bottle Coolers
 Packaged Air-Conditioners
 Code of Practice for the Use of Different Types of Insulating Materials in Cold Storages

Soil Engineering

Standard Published

IS: 1725-1960 Soil Cement Blocks Used in General Building Construction

Work in Hand

Method of Load Test on Soils
 Methods for Laboratory Testing of Soils

Methods for Field Testing of Soils
 Glossary of Terms Applicable to Soil Engineering

Fluid Flow Measurement — Enquiries were made with regard to the present practices of flow measurement in pipes and other closed conduits followed in the country, and work on a specification for standard formulae and coefficients was taken up.

Work in Hand

Current Meters (Cup Type) for Liquid Flow Measurement

Bridges — The Code of Practice for Steel Bridges was finalized.

Work in Hand

Glossary of Terms Relating to Bridges Concrete and Masonry Bridges.

Sieves — The relevant sectional committee took up the revision of IS: 460-1953 with a view to specifying metric dimensions of coarse test sieves so that all concerned industries may grade their materials in metric system.

Standard Published

IS: 1607-1960 Methods for Dry Sieving

Work in Hand

Industrial Screens of Woven Wire Cloth

Fire Fighting Equipment and Appliances — As a further extension of the work already accomplished, draft standards covering small fire engine, foam crash tender, towing tender for trailer pump for fire brigade use, etc, were finalized.

Standards Published

IS: 932-1960 30-34 m (or 100-110 ft) Mechanically Operated Turn Table Ladder for Fire Brigade Use
IS: 934-1960 Portable Chemical Fire Extinguishers, Soda-Acid Type
IS: 938-1960 1 800 l/m (or 400 gal/min) Small Fire Engine
IS: 939-1960 Snatch Block for Use With Fibre Rope for Fire Brigade Use
IS: 947-1960 Towing Tender for Trailer Pump for Fire Brigade Use
IS: 951-1960 Combined Foam and CO₂ Crash Tender
IS: 953-1960 Small Foam Crash Tender

Work in Hand

Fire Extinguisher, Water Type (Gas Pressure)	Oxy-Acetylene Cutting Set Used in Fire Services
Fireman's Helmets	Fire Extinguishers, Dry Powder
Self-Contained Breathing Apparatus for Fire Brigade Use	Hose Laying Tender for Fire Brigade Use
CO ₂ Crash Tender	Rescue Tender for General Purposes
Rescue Tender for Air Field Purposes	Crow's Foot Coupling
Fire Extinguishers, CBM-Type	Quick-Closing Clack Valve
Stirrup Pump for Fire Fighting Purposes	Hose Repairing Machine.
Electric Motor Siren	3-Ton Lifting Tackle
5-Ton, Screw Jacks	Chain Tackle
Fire Extinguishers, (Bucket Pump Type)	First Aid Box
Control Post Van for Fire Brigade Use	Breachings with Control
	Small Fire Engine (1-Ton Truck Chassis)

Construction Plant and Machinery — A draft specification for batch type concrete mixers was finalized, and a number of draft specifications

covering concrete vibrators, scaffolding, etc, was at different stages of preparation.

Work in Hand

Heaters for Tar and Bitumen
Concrete Vibrators
Scaffolding
Concrete Placers
Road Rollers
Asphalt Pavers and Spreaders
Hot Binder Distributors for Road Surface Dressing

Bituminous Pressure Distributors
Stone Crushers
Weighbatchers
Roller Pan Mixers
Asphalt Mixers

4. CHEMICAL DIVISION

4.1 The work of the Chemical Division during the year was highlighted by the successful conclusion of a number of important projects, among which may be mentioned the revision of the specification for calcium carbide and formulation of new standards for shoe polish; sizes and fittings of footwear; East India tanned kips and skins; transparent sheet glass; stearic and oleic acids; mutton tallow; oil of vetiver roots (cultivated); aviation and motor fuels, and fuel oils; methods for gauging of petroleum and liquid petroleum products and methods for sampling of mineral gypsum. In response to a request from the Standing Metric Committee, Government of India, the specification for glass liquor bottles was published within a period of only four months.

4.2 Briefly, 60 standards were either published or were under print (see Appendix A), during the year under review.

As regards the subjects under study, metal containers and their closures (not covered so far); methods of calibration of tanks, computation of capacity tables and calculation of bulk quantities of petroleum and liquid petroleum products; and miners' and gents shoes, being important subjects, were given due priority.

4.3 The Standing Working Committee and Chemical Division Council held their meetings on 11 October 1960 and 23 March 1961 respectively and raised the status of two subcommittees on petroleum measurements and laboratory glassware to that of sectional committees in view of specialized nature of the work dealt with by them. Twenty new subjects were included in the programme of work.

4.4 A brief account of the Division's work is as follows:

Alcohol and Allied Products — A set of Alcoholic Richness Tables was compiled for temperature range of 36.5° to 40°C by interpolation from the existing French Tables with temperature intervals of 0.5°C and with tenth of a degree.

Work in Hand

Alcoholometric Tables

Isopropyl Alcohol
Diacetone Alcohol

Acids and Fertilizers — The draft revision of IS: 266-1950 Specification for Sulphuric Acid was finalized.

Work in Hand

Amendment No. 1 to:	Revision of:
IS: 798-1955 Orthophosphoric Acid, Technical	IS: 263-1950 Boric Acid
IS: 1022-1956 Kotka Phosphate	IS: 265-1950 Hydrochloric Acid
IS: 1089-1957 Oleum (20 percent) Technical	IS: 294-1951 Superphosphate
IS: 1304-1958 Glossary of Terms Used in Fertilizer Trade and Industry	Urea, Technical and Pure
	Ammonium Sulphate Nitrate
	Calcium Ammonium Nitrate

Alkalis and Chlorine — A draft revision amalgamating and revising the two specifications for Common Salt for Hide Curing and Common Salt for Fish Curing (IS: 593-1954 and IS: 594-1954) respectively, was prepared. The specifications for Sodium Bicarbonate Pure and Analytical Reagent Grade (IS: 491-1954) and Sodium Bicarbonate Refined (IS: 492-1954) were also under revision; and a draft revision amalgamating the two modified specifications was approved for wide circulation.

Standard Published

IS: 1744-1960 Stannic Chloride, Anhydrous, Technical

Work in Hand

Amendment No. 1 to IS: 1514-1959 Methods of Sampling and Test for Quick Lime and Hydrated Lime	Hydrated Lime for Grease Manufacture
Revision of IS: 252-1950 Caustic Soda, Technical	Dairy Salt
Revision of IS: 254-1950 Magnesium Chloride, Technical	Free Flowing Table Salt
	Bromine, Technical

Fine Chemicals — Specification for Sodium Bisulphite (Sodium Metabisulphite) (IS: 248-1950) was issued as a firm standard removing its tentative character.

Standards Published

IS: 1767-1961 Dicalcium Phosphate for Dentifrice
IS: 1768-1961 Tricalcium Phosphate for Dentifrice
IS: 1780-1961 Vegetable Tallow

Work in Hand

Amendment No. 2 to IS: 557-1954 Sodium Acetate, Technical and Photographic	Stabilized Hydrogen Peroxide
	Benzene, Reagent Grade
	Toluene, Reagent Grade
	Nickel Salts for Electroplating

Miscellaneous Chemicals — The committee took up work on Chemicals of Vegetable Origin, such as *kattha*, thermal insulation materials and industrial desiccants.

Standards Published

IS: 1290-1960 Mineral Gypsum for Ammonium Sulphate and Cement Industries
IS: 1612-1960 Iron Powder (Reduction Grade)
IS: 1747-1960 Nitrogen, Technical
IS: 1040-1960 Calcium Carbide, Technical (*Revised*)
IS: 1289-1960 Methods for Sampling of Mineral Gypsum

Work in Hand

Amendment No. 1 to IS: 1092-1957 China Clay for Textile and Paper Industries	Mineral Gypsum, Surgical Plaster Grade
Revision of:	Plaster of Paris
IS: 299-1951 Alumino-Ferric	Methods of Test for Crude and Refined Sulphur
IS: 301-1951 Potassium Nitrate for Explosives and Pyrotechnic Compositions	Tetra Sodium Pyrophosphate, Anhydrous
IS: 308-1953 Dissolved Acetylene (Gas)	Magnesium Carbonate for Cosmetic Industry
IS: 574-1954 Glassy Sodium Metaphosphate, Technical	Magnesium Oxide for Cosmetic Industry
Liquid Sulphur Dioxide	Magnesium Stearate for Cosmetic Industry
Red Phosphorus	Calcium Stearate for Cosmetic Industry
Sodium Hydrosulphite, Technical	Activated Carbon for Respirators
Aluminium Powder for Explosives and Pyrotechnic Compositions	Barytes for Chemical and Allied Industries
Magnesium Powder for Explosives and Pyrotechnic Compositions	

Rubber Products — Draft standard for hot water rubber bottles was issued into wide circulation to elicit comments.

Standards Published

IS: 1677-1960 Braided Spray Hose, High Pressure for Agricultural Purposes
IS: 1683-1960 Barytes for Rubber Industry
IS: 1684-1960 Natural Red Oxide of Iron for Rubber Industry
IS: 1685-1960 Whiting for Rubber Industry
IS: 1741-1960 Latex Foam Rubber Products

Work in Hand

Gloves for Surgical Use	Light Duty Water Suction Hose
Gloves for Electrical Purposes	Braided Petrol Hose
Penicillin Bottle Caps (Rubber)	Trailer Fire Pump Hose
Semi-Embedded Water Suction Hose (Heavy Duty) Corrugated Outside	Zinc Oxide for Rubber Industry
Radiator Hose	Titanium Dioxide, Anatase Type
	Yellow Iron Oxide
	Hard Rubber Ebonite

Paints — Draft revisions of fifty paint standards, studied by the Panel for Revision of Indian Standards on Paints and Allied Materials, were approved for wide circulation. For the benefit of people associated with paint industry, a classified technical list of printed Indian Standards on paints and allied materials was finalized.

Standard Published

IS: 1704-1960 Specification for Black Japan for Hot Surfaces

Work in Hand

Amendment No. 1 to:

- IS: 870-1956 Ready Mixed Paint, Brushing, Finishing, Egg Shell Gloss, for Interior Use, to various Indian Standard Colours
- IS: 1232-1957 Ready Mixed Paint, Brushing, Yellow Ochre, Oil Gloss, for General Purposes
- IS: 1303-1958 Glossary of Terms Relating to Paints
- IS: 1404-1959 Anti-Corrosive Paint, Brushing, for Ships Bottoms and Hulls, Red, Chocolate or Black, as Required

Revision of:

- IS: 33-1950 Methods of Test for Dry Pigments and Extenders for Paints
- IS: 50-1950 Lead Chrome and Lead Molybdate for Paints
- IS: 51-1950 Zinc Chrome for Paints
- IS: 57-1950 Red Lead for Paints and Jointing Purposes
- IS: 63-1950 Whiting for Paints
- IS: 101-1950 Methods of Test for Ready Mixed Paints and Enamels
- IS: 102-1950 Ready Mixed Paint, Brushing, Red Lead, Non-Setting Priming
- IS: 103-1950 Ready Mixed Paint, Brushing, White Lead, for Priming and General Purposes
- IS: 104-1950 Ready Mixed Paint, Brushing, Zinc Chrome, Priming, for Use on Aluminium and Light Alloys
- IS: 105-1950 Ready Mixed Paint, Brushing, Priming, for Enamels, for Use on Metals (*Tentative*)
- IS: 106-1950 Ready Mixed Paint, Brushing, Priming, for Enamels, for Use on Wood
- IS: 107-1950 Ready Mixed Paint, Brushing, Red Oxide-Zinc Chrome, Priming
- IS: 108-1950 Ready Mixed Paint, Spraying, Red Oxide-Zinc Chrome, Priming
- IS: 117-1950 Ready Mixed Paint, Brushing, Finishing, Exterior, Oil Gloss, for General Purposes, to Indian Standard Colours
- IS: 118-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, to Indian Standard Colours
- IS: 119-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, to Indian Standard Colours
- IS: 120-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, to Indian Standard Colours
- IS: 121-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, to Indian Standard Colour No. 414, Golden Brown
- IS: 122-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, to Indian Standard Colours
- IS: 123-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, to Indian Standard Colours
- IS: 124-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, to Indian Standard Colour No. 105, Oxford Blue
- IS: 125-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, to Indian Standard Colour No. 106, Royal Blue
- IS: 126-1950 Ready Mixed Paint, Brushing, Finishing, Exterior, Oil Gloss, for General Purposes, to Indian Standard Colour No. 671, Middle Graphite and Dark Graphite
- IS: 127-1950 Ready Mixed Paint, Brushing, Finishing, Exterior, Oil Gloss, for General Purposes, White
- IS: 128-1950 Ready Mixed Paint, Brushing, Finishing, Oil Gloss, for General Purposes, Black
- IS: 129-1950 Ready Mixed Paint, Brushing, Finishing, Interior, Oil Gloss, for General Purposes, to Indian Standard Colours
- IS: 130-1950 Ready Mixed Paint, Spraying, Finishing, for Railway Wagon Stock, to Indian Standard Colour No. 446, Red Oxide and Red Oxide (Colour Unspecified)
- IS: 131-1950 Ready Mixed Paint, Spraying, Finishing, for Railway Under-Frames, Black

- IS: 132-1950 Ready Mixed Paint, Spraying, Exterior, Oil Gloss, for General Purposes, to Indian Standard Colours
- IS: 133-1950 Enamel, Brushing, Interior (1) Undercoating, (2) Finishing, Colour as Required
- IS: 135-1950 Ready Mixed Paint, Spraying, Stoving, Red Oxide-Zinc Chrome, Priming
- IS: 136-1950 Ready Mixed Paint, Brushing, Stoving, Red Oxide-Zinc Chrome, Priming
- IS: 137-1950 Ready Mixed Paint, Brushing, Matt Finish, Interior, to Indian Standard Colours
- IS: 158-1950 Ready Mixed Paint, Brushing, Bituminous, Black, Lead-Free, Acid, Alkali, Water and Heat Resisting, for General Purposes
- IS: 165-1950 Aluminium Paint, Brushing, for General Purposes, in Dual Container
- IS: 166-1950 Aluminium Paint, Spraying, for General Purposes, in Dual Container
- IS: 168-1950 Ready Mixed Paint, Brushing, Quick-Drying, Matt, Lead-Free, for General Purposes, to Indian Standard Colours
- IS: 169-1950 Ready Mixed Paint, Spraying, Quick-Drying, Matt, Lead-Free, for General Purposes, to Indian Standard Colours
- IS: 289-1952 Aluminium Paste for Paints
- IS: 290-1953 Coal Tar Black Paint
- IS: 385-1953 Liquid Driers for Paints
- IS: 386-1953 Liquid Driers, Concentrated, for Paints
- IS: 424-1953 Plastic Asphalt
- IS: 426-1953 Paste Filler, for Colour Coats
- IS: 427-1953 Distemper, Dry, Colour as Required
- IS: 520-1954 Enamel, Brushing, Exterior, Type 1 (Synthetic) (1) Undercoating, (2) Finishing, Colour as Required (*Tentative*)
- IS: 642-1955 Varnish Medium for Aluminium Paint
- Thinner for Synthetic Paints and Varnishes
- Thinner for Cellulose Nitrate Based Paints, Dopes and Lacquers
- RMP, Zinc Chrome, Priming (Synthetic), for Light Alloys
- Letterpress Ink, Black, General Purposes

Glassware — In order to assist the introduction of metric system in the alcohol industry, a standard on glass liquor bottles specifying bottles in metric sizes for packing spirits, beer and other liquors was finalized and printed. Investigations for evolving the thermal shock test for laboratory glassware were initiated.

Standards Published

- IS: 1574-1960 Glass Weighing Bottles
- IS: 1575-1960 Separating Funnels
- IS: 1590-1960 Glass Filter Flasks
- IS: 1662-1960 Glass Liquor Bottles
- IS: 1672-1960 Floating Dairy Thermometers
- IS: 1761-1960 Transparent Sheet Glass for Glazing and Framing Purposes

Work in Hand

Amendment No. 1 to:

- IS: 1107-1957 Aerated Water Glass Bottles
- IS: 1112-1957 Glass Shells for General Lighting Service Lamps
- Revision of IS: 489-1954 Glass Ampoules

- Revision of IS: 1108-1957 Tincture Glass Bottles
- Glass Beakers
- Distilling Flasks
- Petri Dishes
- Test Tubes
- Penicillin Vials

Glass Stopcocks
Burettes
Colours for Signal Glasses for Use in Railways
Liquid Bright Gold
Glossary of Terms Relating to Glass Industry
Glass Tableware
General Purpose Laboratory Thermometers

Ceramicware

Work in Hand

Glossary of Terms Relating to Ceramic
Whiteware

Dinnerware
Laboratory and Hospital Porcelain
Enamelware

Method of Test for Quality of Glass
Bottles for Transfusion Fluids
Safety Glass
Tables for Use in the Calibration of Volumetric Glassware
Marble Stoppered Aerated Water Glass Bottles

Essential Oils — During the year under report, the committee concerned organized a scheme for collecting data in terms of Tintometric Values of the Oil of Sandalwood with a view to incorporating appropriate tintometric values, in respect of present subjective requirement of colour in IS : 329-1952 Specification for Sandalwood Oil. For this purpose, about 120 samples of the oil, collected by the Directorate of Marketing and Inspection, were examined by the Regional Research Laboratory, Hyderabad. Another scheme of investigation taken in hand related to the determination of citral content both by the bisulphite method (using separately saturated and 30 percent solutions) and the free hydroxylamine method expressing the content of carbonyl compounds as proposed by the ISO/TC 54 Essential Oils.

Standards Published

IS: 1614-1960 Oil of Vetiver Roots (Cultivated)
IS: 1615-1960 Oil of Himalayan Cedarwood
IS: 1616-1960 Oil of Spike Lavender
IS: 1617-1960 Oil of Lavandin
IS: 1618-1960 Oil of Lavender-French

Work in Hand

Amendment No. 1 to IS: 326-1952
Methods of Test for Essential Oils

Revision of:

IS: 327-1952 Lemongrass Oil (East Indian Lemongrass Oil)
IS: 329-1952 Sandalwood Oil
IS: 512-1954 Citronella Oil

Citral
Geraniol

Citronellol
Ionones
Oil of Patchouli
Oil of Celeryseed
Oil of Indian Dill
Oil of Pine
Oil of Bergamot
Oil of Rosemary
Oil of Clove

Ink and Allied Products — Work on school chalks was initiated, and the standards already published were reviewed for bringing them up-to-date.

Standard Published

IS: 1581-1960 Ferro-Gallo Tannate Fountain Pen Ink (0.2 Percent Iron Content)

Work in Hand

Amendment No. 1 to:

- IS: 788-1955 Ink, Drawing, Water-proof, Coloured, Transparent and Opaque
- IS: 789-1955 Ink, Drawing, Water-proof, Black
- IS: 1221-1957 Dye Based Fountain Pen Inks (Blue, Green, Violet, Black and Red)
- IS: 1222-1957 Ink Duplicating, All Weather, Black for Rotary Type Machines
- IS: 1333-1958 Ink, Duplicating, All Weather, Black for Drum Type Machines
- IS: 1379-1958 Ink, Stencil, Oil Base, for Marking Non-Porous Surfaces

Revision of:

IS: 219-1950 Ink Powders and Tablets
IS: 221-1950 Ink, Fluid, for Permanent Records
IS: 222-1950 Ink Fluid, Blue Black, for General Purposes
IS: 394-1952 Cloth Marking Inks
Glass Bottles for Fluid Inks
Dye, Ink Blue, for Ink Industry
Dye, Methylene Blue, for Ink Industry
Pencil Carbon Papers
Ribbons for Typewriters
Tannic Acid for Ink Industry
Gallic Acid for Ink Industry
School Chalks, Moulded, White

Solid Mineral Fuels — Consequent upon the publication of the standards on methods of test for coal and coke, IS : 1350-1959 to IS : 1355-1959, amendments to the standards on coal and coke published earlier were finalized.

Work in Hand

Amendment No. 1 to:

- IS: 437-1956 Size Grading of Coal and Coke for Marketing
- IS: 439-1953 Hard Coke (*Tentative*)
- Revision of IS: 436-1953 Methods for Sampling of Coal and Coke, Part I

Domestic Coke
Coke for Cupola
Coke for Blast Furnace
Coke for Gas Producers

Paper — Four draft specifications on printing and writing paper, base paper for sensitized paper, folding box board, and paper for permanent records were finalized for printing. Collection of data in respect of the characteristics for different types of boards in order to evolve standards on these materials was in progress.

Standards Published

IS: 1060(Part II)-1960 Methods of Sampling and Test for Paper and Allied Products, Part II
IS: 1396-1960 Blotting Paper
IS: 1397-1960 Kraft Paper
IS: 1398-1960 Packing Paper, Water Proof, Bitumen Laminated

Work in Hand

Untrimmed (Raw Stock) Paper Sizes
Substances of Paper and Pulp
Ticket Board

Gray Board
Mill Board
Straw Board

Leather and Leather Goods — The principal foreign exchange earner of leather industry is the East India tanned kips and skins the export of

which fetches annually about Rs 25 crores. An Indian Standard on this item was published during the year under review.

Standards Published

IS: 1636-1960 Chrome Waxed Sole Leather
IS: 1637-1960 Cycle Saddle Leather
IS: 1638-1960 Sizes and Fittings of Footwear
IS: 1639-1960 East India Tanned Kips and Skins
IS: 1640-1960 Glossary of Terms Relating to Hides, Skins and Leather
IS: 1746-1960 Shoe Polish

Work in Hand

Revision of:	Bookbinding Leather
IS: 581-1954 Vegetable Tanned Hydraulic Leather	Clothing and Lining Leather Including Suede Leather
IS: 582-1954 Methods of Sampling and Test for Vegetable and Chrome Tanned Leather	Holdall Straps
Gents' Shoes	Special Type of Leather Required for Oil Seals, Washers and Other Moulded Articles
Miners' Boots and Shoes	Pure Tannin Extract of Myrabolan
Vegetable and Aluminium Tanned Snakeskins	Glossary of Footwear Terms
	Sampling of Footwear

Plastics — During the Second Five-Year Plan, a number of units had been established for the production of raw materials, such as phenol formaldehyde and urea formaldehyde moulding powders, polyethylene and polystyrene. The Plastics Sectional Committee accorded priority to work on these subjects.

Standard Published

IS: 1627-1960 Cellulose Nitrate for Use in Coated Fabrics

Work in Hand

Methods of Test for Thermosetting Synthetic Resin Bonded Laminated Sheets	Methods of Test for:
Paper Base Thermosetting Synthetic Resin Bonded Laminated Sheets	Polyethylene Moulding Material
Fabric Base Thermosetting Synthetic Resin Bonded Laminated Sheets	Finished Plastic Mouldings, Part I
Decorative Thermosetting Synthetic Resin Bonded Laminated Sheets	Urea Formaldehyde Moulding Powder
Methods of Sampling of Thermosetting Moulding Materials	Polystyrene Moulding Material
	Unsupported Flexible Vinyl Film and Sheet
	Phenolic Moulding Materials of Improved Varieties

Petroleum — A draft standard for special boiling point spirit was issued into wide circulation to elicit comments.

Standards Published

IS: 1558-1960 Vaporizing Oil
IS: 1571-1960 Aviation Turbine Fuels, Kerosine Type
IS: 1585-1960 Motor Gasoline, 79 Octane
IS: 1587-1960 Aviation Turbine Fuels, High Flash Point Type
IS: 1588-1960 Aviation Turbine Fuels, Wide Cut Gasoline Type

IS: 1593-1960 Fuel Oils
IS: 1604-1960 Aviation Gasoline

Work in Hand

Liquefied Petroleum Gases

Lubricants — The draft standard for jute batching oil was sent for printing. Finalization of draft standard for cutting oil, sulphurized, was deferred while draft standard for gear lubricant, premium, was approved for wide circulation.

Standards Published

IS: 1589-1960 Oil Cylinder (Revision of IS: 311-1951 to IS: 316-1951)
IS: 1628-1960 Oil Lubricating, Axle, Regular and Premium
IS: 1674-1960 Temporary Corrosion Preventive Fluid, Soft Film, Solvent Deposited

Work in Hand

Amendment No. 1 to:	Rust Removing Solution, Types A and B
IS: 719-1955 Grease S/L No. 1	Ethylene Glycol Antifreeze, Types A, B, C
IS: 720-1955 Grease, S. Hard Loco	Inhibited Pickling Acids
IS: 1002-1956 Multipurpose Grease	Code of Practice for Temporary Prevention of Corrosion on Metal Surfaces (During Transportation and Storage)
IS: 1276-1958 Grease, S. No. 2	Oil Hydraulic, Mineral Oil Type
Amendment No. 2 to IS: 496-1955 Internal Combustion Engine Lubricating Oils	Heavy Duty Hydraulic Brake Fluid
Quenching Oil	
Grease Graphited, for Leaf Springs	
Open Gear and Wire Rope Lubricants	

Methods of Test for Petroleum, Petroleum Products and Lubricants — Indian Standard Methods of Test for Petroleum and Its Products [IS: 1448 (Part I)-1960] comprising 42 test methods was in press. Part II of this standard, containing seven methods of test, was issued into wide circulation.

Work in Hand

IS: 1447- Methods of Sampling of Petroleum and Its Products — Acceptability of Test Results, Interpretation and Recommended Usage of Indian Standard Precision Data

Petroleum Measurements — Formulation of standards on the methods of calibration and computation of capacity tables of tanks for petroleum and its products, measurement of temperature of oil in bulk storage, etc, was hitherto entrusted to a subcommittee under the Petroleum Products Sectional Committee, CDC 22, although it did not strictly fall under its purview. The work in this field has expanded considerably. In order to do full justice to this subject and deal with it speedily and effectively, a separate and fully competent Sectional Committee, CDC 32, was set up.

Standard Published

IS: 1518-1960 Method for Gauging of Petroleum and Liquid Petroleum Products

Work in Hand

Methods for:

Temperature Measurement of Petroleum and Its Products
Calibration of Vertical Tanks for Bulk Storage of Petroleum and Liquid Petroleum Products
Computation of Capacity Tables for Vertical Tanks for Bulk Storage of Petroleum and Liquid Petroleum Products
Computation of Capacity Tables for Horizontal and Tilted Tanks

Methods for:

for Bulk Storage of Petroleum and Liquid Petroleum Products
Calibration of Horizontal and Tilted Tanks for Bulk Storage of Petroleum and Liquid Petroleum Products
Calculation of Bulk Quantities of Petroleum and Liquid Petroleum Products

Water — In order to provide a control on the pollution of rivers by sewage and industrial wastes, the committee concerned approved for wide circulation draft standard for river water for various purposes.

Standards Published

IS: 1070-1960 Water, Distilled Quality (*Revised*)
IS: 1631-1960 Methods of Test (Physical) for Industrial Water
IS: 1680-1960 Code of Practice for Treatment of Water for Land Boilers

Work in Hand

Code of Practice for Treatment of Water for Marine Boilers
Methods of Test (Chemical) for Industrial Water
Methods of Sampling Industrial Water for Physical and Chemical Tests

Methods of Test for Microbiological Examination of Industrial Water
Code of Practice for Treatment of Water for Locomotive Boilers

Metal Containers — Work was initiated in respect of containers for packing dangerous insecticides. Five draft standards and two draft amendments were finalized for publication; the most important of them were the draft for drums, large, fixed ends which covered the flat and dish ended drums of 200-litre nominal capacity, and the draft for screwed closures. The draft for round tins for general purposes, which was among those finalized, may not be processed for publication as the amalgamation of all the standards on round tins is under consideration.

Work in Hand

Amendment No. 1 to:
IS: 1407-1959 Round Paint Tins
IS: 1413-1959 Round Vanaspathi Tins
Screwed Closures for Drums
Closures for Drums and Kegs
Crown Corks
Drums, Large, Fixed Ends

Pre-Screwed Caps
Round Tins for General Purposes
Square Tins for General Purposes
Collapsible Tubes
Butter Tins
Aluminium Seamless Containers and Printing Ink Containers

Adhesives — The Sectional Committee on Adhesives, which was set up last year, gathered momentum and it was expected that some standards would be ready early next year.

Work in Hand

Rubber Based Adhesive for Tyres and Tubes (Patching and Repairs) —
• Type 1 Non-Curing
Rubber Based Adhesive for Tyres and Tubes (Patching and Repairs) —
Type 2 Curing

Rubber Based Adhesives for Automobile Industry (Multipurpose)
Paper Adhesives (Liquid Gums and Office Pastes)
Adhesives for Leather Belting

Brushware

Work in Hand

Revision of IS: 384-1954 Brushes, Paints and Varnishes Flat Bristles
Tooth Brush

Shaving Brush
Nylon Monofilaments (Synthetic Bristles for Brushes), and Bristles

Treated Fabrics

Work in Hand

Amendment No. 1 to IS: 1259-1958 Vinyl Coated Fabrics

Tracing Cloth
Tarpaulins

Oils, Fats and Soaps — The assistance of the Indian Central Oilseeds Committee, Ministry of Food & Agriculture, was obtained to finance the project of investigations instituted to collect test data on the properties of raw and washed cottonseed oils. The revision of Indian Standards on soaps and vegetable oils and their methods of test was undertaken.

Standards Published

IS: 887-1960 Mutton Tallow
IS: 1675-1960 Stearic Acid

IS: 1676-1960 Oleic Acid

Work in Hand

Revision of:
IS: 285-1951 Laundry Soap
IS: 286-1951 Methods of Sampling and Test for Soaps
IS: 542-1954 Coconut Oil
IS: 543-1954 Cottonseed Oil
IS: 544-1954 Groundnut Oil
IS: 545-1954 Mahua (Mowrah) Oil

Revision of:
IS: 546-1954 Mustard Oil
IS: 547-1954 Sesame Oil
IS: 548-1954 Methods of Sampling and Test for Vegetable Oils and Fats
Crude Glycerine and Refined Glycerine
Bleaching Earths of Indian Origin

Uniformity of Test Methods, Terminology, Reagents, etc., in Chemical Standards — The Chemical Standards Sectional Committee co-ordinates the work of all other sectional committees in preparing chemical standards, and tries to maintain uniformity and avoid unnecessary variations in the test methods, reagents, definitions, etc. During the year under review, the Committee had under preparation a draft standard on indicators for volumetric analysis.

Work in Hand

Method of Test for Arsenic
EDTA Method for Determination of Calcium and Magnesium

5. ELECTROTECHNICAL DIVISION

5.1 Introduction of metric system of units in the standards already published, formulation of Indian Standards on important subjects in the field of electrotechnology and organizing the XXV General Meeting of the International Electrotechnical Commission in New Delhi (see p. 99) were some of the most important achievements of the Electrotechnical Division of the Institution during the year under review.

5.2 In all, 24 Indian Standards, including revisions, were published or sent to press (see Appendix A), and 20 new subjects were taken up for formulation of Indian Standards.

5.3 The Indian Standards published during the period covered many important subjects including PVC insulated heavy duty cables; metric sizes of copper wires and conductors; porcelain insulators for overhead lines; ballasts for fluorescent lamps; metal clad switches; and steel conduits.

5.4 Further progress was made in the formulation of Indian Standards for heavy electrical equipment; high voltage equipment; oil circuit breakers; motor controlgear; high voltage testing equipment; etc. Work also proceeded on the general aspects of electrical engineering, such as tropic proofing of electrical and electronic equipment, safety, insulating materials, etc.

5.5 With a view to accelerating the rate of production and participating more actively at the international level in the work of International Electrotechnical Commission, the committee structure of the Electrotechnical Division in the field of electronics and telecommunications was re-organized. The Radio Equipment Sectional Committee was replaced by four separate Sectional Committees to deal, respectively, with (a) electronic equipment, (b) electronic components, (c) environmental testing procedures, and (d) acoustics.

5.6 A short account of the work done in different fields is given below:

General Electrical Standards — Parts I and II of Electrotechnical Vocabulary covering 'Fundamental Definitions' and 'Machines and Transformers' were finalized.

Work in Hand

Classification of Charts and Diagrams
Graphical and Letter Symbols Used in Electrotechnology

Revision of IS: 585-1954 Recommended Voltages and Frequency for AC Transmission and Distribution Systems

Electrical Conductors and Accessories

Standards Published

IS: 1554-1961 PVC Insulated (Heavy Duty) Cables — Part I for Working Voltages Up to and Including 1 100 Volts
IS: 1591-1960 Glossary of Terms for Electrical Cables and Conductors
IS: 1594-1960 Metric Sizes of Copper Wires and Conductors for Electrical Purposes

IS: 1595-1960 Enamelled High Conductivity Annealed Round Copper Wire (Synthetic Enamel)

Work in Hand

Revision of:

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

IS: 396-1953 Bare Annealed High Conductivity Copper Wire (*Tentative*)

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

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

IS: 449-1953 Enamelled High Conductivity Annealed Round Copper Wire (Oleo-Resinous Enamel)

IS: 450-1953 Cotton Covered High Conductivity Annealed Round Copper Wire

IS: 482-1953 Reels for Covered, Solid, Round Electrical Winding Wire

Revision of:

IS: 692-1957 Paper-Insulated Lead-Sheathed Cables for Electricity Supply

IS: 694-1960 PVC Cables and Cords for Electric Power and Lighting for Working Voltages Up to and Including 650 Volts to Earth

PVC Sleeveings

Reels and Drums for Bare Wire

Flexible Cables in Quarries and Metalliferous Mines

Polythene Insulated and PVC Sheathed Cables for 250 Volts

Aluminium Conductors in Insulated Cables

Paper-Covered Rectangular Copper Conductors

Aluminium Conductor Fittings

Braided Cables with Copper Conductors

Hard-Drawn Cadmium Copper Solid and Stranded Circular Conductors

Trolley and Contact Wires

PVC Automobile Cables

Cotton Covered Rectangular Strips

Enamelled Strips and Enamelled Strips with Paper Covering

Enamelled Round Conductors with Cotton Covering

Insulators and Accessories — Work was started on high voltage bushings required for transformers and switchgear with a view to unifying their requirements.

Standards Published

IS: 1441-1960 Insulator Stalks for Telegraph and Telephone Lines

IS: 1445-1960 Porcelain Insulators for Overhead Lines with a Nominal Voltage Below 1 000 Volts

Work in Hand

High Voltage Bushings
Insulator Hardware

Dimensions of 11 kV Pin, Disc and Post Type Insulators

Electric Fans

Standards Published

IS: 374-1960 Electric Ceiling Fans (*Revised*)

IS: 555-1960 Table-Type Electric Fans (*Revised*)

IS: 1709-1960 Fixed Capacitors for Fans

Work in Hand

Air Circulator Type Fans
Blowers

Propeller Type Ventilating Fans

Electrical Instruments and Meters — Three draft standards dealing with AC electricity meters with maximum demand indicators, time switches, and DC potentiometers were finalized.

Standard Published

IS: 1565-1960 Electrical Apparatus Comprising Resistors

Work in Hand

Time Switches	Thermocouple Type Pyrometers with Indicators
DC Potentiometers for Laboratory and Industrial Uses	Galvanometers
AC Electricity Meters (IS: 722-Part IV) Three Phase Whole-Current and Transformer-Operated Kilo-watt Hour with Maximum Demand Indicators	Instrument Transformers
	Dimensions of Indicating Instruments
	Fuel Gauges
	Polycrystalline Semi-Conductor Rectifiers
	Multi Test Meters

Electrical Appliances and Wiring Accessories

Standards Published

IS: 302-1960 General Requirements for Light Electrical Appliances (*Revised*)
 IS: 1534-1960 Ballasts for Fluorescent Lamps, Part I : For Switch Start Circuits
 IS: 1567-1960 Metal Clad Switches (Current Rating not Exceeding 100 Amperes)
 IS: 1606-1960 Schedule for Automobile Lamps
 IS: 1653-1960 Steel Conduits for Electrical Wiring

Work in Hand

Revision of:	Fuse Wire
IS: 365-1952 Electric Hot Plates	Neon Sign Transformers
IS: 366-1952 Electric Irons	Prevention of Glare Menace from Automobile Head Lamps
IS: 367-1955 Electric Kettles for Domestic Use	Electric Table Lamps
IS: 368-1952 Electric Portable Immersion Heaters for Domestic Use	Telephone Switchboard Lamps
IS: 369-1952 Electric Radiators for Domestic Use	Radio Dial Lamps
IS: 371-1954 Two- and Three-Terminal Ceiling Roses	Special Types of Lamps Used by the Indian Navy
Visual Indicator Lamps	Electric Discharge Lamps and Their Capacitors
Electric Water Heaters and Geysers	Schedule of Mercury Vapour Lamps
Electric Call Bells and Buzzers	Starters for Fluorescent Lamps
Bed Switches	Ballasts Intended for Instant Start Lamps
Bell Pushes	Safety Requirements for Ballasts
Cut-Outs (Fuses)	Bi-Pin Lampholders and Sockets for Starters
Fittings and Accessories for Wiring	

Radio Equipment — Two codes of practice covering (a) outdoor installation of public address systems and (b) installation of indoor amplifying and sound distribution systems, and a standard for ceramic dielectric capacitors type I were finalized. Revision of the standard on climatic tests for electronic components was completed and new work on electronic measuring instruments was started.

Work in Hand

Revision of:

- IS: 589-1954 Procedures for Basic Climatic Tests for Electronic Components
- IS: 590-1954 Fixed Paper Dielectric Capacitors
- IS: 614-1954 Methods of Measurements on Receivers for Amplitude Modulation Broadcast Transmissions
- IS: 615-1955 Recommendations for Minimum Electrical Performance Requirements of Domestic Radio Receivers
- IS: 705-1955 Dry Battery-Operated Community Radio Receivers
- IS: 706-1955 AC Mains-Operated Community Radio Receivers
- IS: 1031-1957 Methods of Measurements on Loudspeakers and Loudspeaker Systems
- IS: 1036-1957 6-Volt Accumulator-Operated Community Radio Receivers

Fixed Silvered Mica Capacitors
 General Requirements for Audio Amplifiers
 Measurements on F.M. Receivers
 Acoustical Terminology
 Fixed Carbon Resistors
 Amplitude Modulated Signal Generators

Mica

Work in Hand

Grading and Classification of Muscovite Mica Splittings
 Further Processing of the ISO Subjects:
 Visual Classification of Muscovite Mica
 Grading of Phlogopite Mica and Muscovite Mica Splittings

Primary Cells and Batteries

Work in Hand

Flash Light Torches
 Carbon Rods for Primary Cells

Electronic Voltmeters
 Audio Frequency Generators
 Cathode Ray Oscilloscope
 Wave Band Switches
 Wire Wound Resistors
 Potentiometers
 Aerial, Hook-Up and Shielded Wires
 Electrolytic Condensers
 Mechanical Parts of Receivers
 Receiver Plugs for Battery Connection
 Main Plugs, Rubber Moulded Type
 'Standard' Community Radio Receivers
 T.V. Receivers
 Communication Receivers
 Code of Practice for Installation of Receivers
 Interference Suppression Devices
 Microphone Transformers
 Interstage Transformers
 Transformers for AC-Cum Vibrator Operation
 Microphones
 Tape Recorders
 Transistorized Amplifiers
 Ranges, Accuracies, etc., of Electronic Instruments
 Output Power Meters
 Climatic Tests for Complete Electronic Equipment

Further Processing of the ISO Subjects:
 Thermal Classification of Phlogopite Mica Splittings
 Master Standard Samples
 Effect of Metric System on Size Grading of Mica

Batteries for Hearing Aids
 Batteries for Transistor Receivers

Secondary Cells and Batteries — Draft specifications covering stationary accumulators, lead-acid type, planté positive plate and tubular positive plate were approved for publication. These two standards, when published, would replace IS: 541-1954 Stationary Accumulators,

Lead-Acid Type (*Tentative*). In addition, draft specification for batteries for aircraft was finalized.

Standard Published

IS: 1146-1960 Hard Rubber Containers for Motor Vehicle Batteries

Work in Hand

Amendment No. 2 to IS: 395-1959 Lead-Acid Storage Batteries (Light Duty) for Motor Vehicles (*Revised*)

Revision of:

IS: 985-1958 Lead-Acid Storage Batteries (Heavy Duty) for Motor Vehicles

IS: 1045-1957 Lead-Acid Storage Batteries for Motor Cycles

Stationary Accumulators, Lead-Acid Type (Platté Positive Plate)

Stationary Accumulators, Lead-Acid Type (Tubular Positive Plate)

Lead-Acid Storage Batteries for Aircraft

Electroplating — Three draft standards for copper plating, brass plating and industrial silver plating were finalized.

Standards Published

IS: 1572-1960 Zinc Plating

IS: 1573-1960 Cadmium Plating

Work in Hand

Revision of:

IS: 1067-1958 Commercial Silver Plating

IS: 1068-1958 Copper, Nickel and Chromium Electroplated Coatings

Gold Plating

Brass, Nickel, Lead, Silver, Zinc and Tin Anodes for Electroplating

Code of Practice for:

Hard Chromium Plating on Steel

Code of Practice for:

Pre-treatment of Steel, Copper and Copper Base Alloys Zinc and Zinc-Base Alloys for Electroplating

Plating on Aluminium and Aluminium Alloys

Polishing of Basis Metals for Electroplating

Electroplating — Recommended Equipment

Illumination Engineering Equipment — Draft specification for industrial lighting fittings with metal reflectors was approved for publication.

Work in Hand

General Requirements for Electrical Lighting Fittings

Flood Lighting

Aerodrome Lighting

Street Lighting

Decorative Lighting

Commercial Lighting

Automobile Electrical Equipment

Work in Hand

Electric Horns Part I: DC Vibrating Type

Cut-Outs

Coils

Distributors

Generators

Starters

Magnetos

Screen Wipers
Dipper Switches
Flashers
Ignition Switches
Voltage Regulators
Taper Terminal Cable Connectors for Automobile Batteries

Armatures
Dynamamos for Cars and Commercial Vehicles
Horn Relays
Revision of IS: 1063-1957 Sparking Plugs

Rotating Machinery — While taking up the revision of IS: 325-1959 Three-Phase Induction Motors for Industrial Use, it was decided to enlarge the scope of the standard so as to include Class E insulation. Work on the preparation of dimensional standards on flange motors and hollow shaft motors was started. Some amount of agreement was also achieved regarding dimensions of loom motors.

Work in Hand

Loom Motors
Carbon Brushes
Dimensions of Flange, Hollow Shaft, Motors with Class E Insulation

Motors for Domestic Appliances
Revision of IS: 325-1959 Three-Phase Induction Motors (*Revised*)

Transformers — The draft standard on power transformers was issued in wide circulation.

Switchgear and Controlgear — Two draft standard specifications for outdoor air break isolators and earthing switches, and motor starters were finalized.

Work in Hand

H.R.C. Cartridge Fuse-Links
High Voltage and Low Voltage Alternating Current Circuit Breakers
Contactors
Low Voltage Fusegear (Heavy Duty)

Classification of Protective Enclosures for Low Voltage Switchgear
Revision of IS: 375-1951 Marking and Arrangements for Switchgear Bus Bars, Main Connections and Auxiliary Wiring

Insulating Materials

Work in Hand

Conditioning and Testing of Electrical Insulating Materials
Determination of Electric Strength of Insulating Materials at Power Frequencies

Determination of Insulation Resistance of Solid Insulating Materials
Built-Up Mica

High Voltage Techniques — Preparation of Recommendations for Insulation Co-ordination applicable to various categories of electrical equipment was given priority in view of the divergent insulation levels being followed at present.

Work in Hand

Insulation Co-ordination
High Voltage Test Techniques
Impulse Voltage Testing

Voltage Measurement by Means of Sphere Gap (One Sphere Earthed)

Power Installation and Maintenance—Codes of Practice for Installation and Maintenance of Power Transformers, and Insulating Oil were finalized.

Work in Hand

Code of Practice for:
Electrical Installations in Industrial Locations
Protection of Buildings Against Lightning

Code of Practice for:
Installations and Maintenance of
(a) Switchgear and (b) Motor Controlgear
Earth Leakage Protection in Mines and Similar Other Locations

Electrical Welding Equipment

Work in Hand

Arc Welding Transformers Part I:
Single Operator Type
Welding Cable
Clamps

Plugs and Sockets
Multi-Operator Transformers
Welding Generators
Resistance Type Welding Equipment

Flame-Proof Electrical Equipment

Work in Hand

Flame-Proof Enclosures for Electrical Equipment

Intrinsically Safe Electrical Apparatus and Circuits

6. ENGINEERING DIVISION

6.1 An important event during the year under report was the inaugural meeting of Technical Committee 88 Pictorial Marking of Handling Instructions for Goods, of the International Organization for Standardization, held in New Delhi at the invitation of ISI which holds the Secretariat for this international committee for which the Cargo Marking Sectional Committee of Engineering Division is the corresponding national committee. For this meeting, four documents were prepared by the Secretariat including two proposed draft recommendations.

6.2 To assist in the early introduction of metric system in the country the Division attached great importance to the work on formulation of basic and other engineering standards required in connection with the change-over to metric system in ordinary commercial transactions and published Indian Standards for beam scales, platform weighing machines, weighing bridges, spring balances, metric scales for general purposes and metric scales for use with drafting machines. Emphasis was laid on the preparation of standards relating to bolts, screws and nuts, metric scales, weighing instruments and code of practice for general engineering drawings. Particular mention may be made of IS : 1363-1960 Specification for Black Hexagonal Bolts (6 to 39 mm) with Nuts and Black Hexagonal Screws (6 to 24 mm); IS : 1364-1960 Specification for Precision, and Turned Hexagonal Bolts (6 to 39 mm) with Nuts and Hexagonal Screws (6 to 39 mm); IS : 1330-1958 General Plan for Metric Screw Threads with ISO Profile (Diameter Range 0.25 to 300 mm); and IS : 1362-1959 Dimensions for Screw Threads

for General Purposes (Diameter Range 0.25 to 39 mm), which have already been published. An Indian Standard on technical supply conditions for threaded fasteners which includes information required for the inspection of bolts, screws and nuts, and threaded fasteners generally was finalized.

The foregoing standards provide practically all the information required for the manufacture of bolts, screws, nuts and similar items in the metric series. Indian Standard Specifications for metric sized drills, reamers, milling cutters and screwing dies were also finalized. IS : 696-1955 Code of Practice for General Engineering Drawings, had to be revised to take into account the decision to change over to the metric system. Another important standard published during the year related to vertical turbine pumps for clear, cold, fresh water. It is hoped that this standard along with the other relating to horizontal centrifugal pumps published last year will be of great assistance in meeting the requirements of the Third Five-Year Plan for irrigation pumps which are expected to be installed in very large numbers all over the country. Indian Standard Specification for Wrought Aluminium Utensils (IS : 1660-1960) was published. It is hoped that this standard together with IS : 20-1959 Specification for Cast Aluminium and Aluminium Alloy for Utensils (*Second Revision*) and IS : 21-1959 Specification for Wrought Aluminium and Aluminium Alloy for Utensils (*Second Revision*) will provide a complete answer to those who wish to buy in India and overseas durable aluminium utensils of high quality.

6.3 The Exploratory Committee on Mining Industry, which was set up last year, met on 9 December 1960. The Committee recommended the setting up of six new sectional committees under the Division to formulate standards for mining and similar engineering equipment.

6.4 For the convenience of the people concerned with the handling of goods, Hindi version of IS : 1260-1960 Code of Symbols for Labelling of Dangerous Goods was published.

6.5 During the year under review, 28 Indian Standards were either published or sent to press for publication (*see* Appendix A).

6.6 A brief Review of the Division's activities is given below:

Engineering Standards—The draft standard on equivalent metric units for quantities in mechanical engineering was finalized for publication.

Standard Published

IS : 2-1960 Rules for Rounding Off Numerical Values (*Revised*)

Work in Hand

Revision of IS : 196-1950 Atmospheric Conditions for Testing
Revision of IS : 1105-1957 Method for

Precise Conversion of Inch and Metric Dimensions to Ensure Interchangeability

Oil Burning Domestic Appliances (Non-Pressure Type)

Work in Hand

Revision of IS : 1238-1958 Hurricane Lanterns

Machine Tools — Draft standard for accuracy requirements for lathes was finalized for publication. Two draft standards, one for coolant pumps for machine tools, and the other for test charts for radial drilling machines, were approved for wide circulation.

Work in Hand

Lathe Chucks
Drill Chucks
Safety Code for Machine Tools
T-Slots (Metric)
T-Nuts (Metric)
T-Bolts (Metric)
Machine Tool Test Code

Lathe Tool Posts
 $\frac{1}{4}$ Tapers for Tool Shanks
Lathe Centres
Direction of Operation of Controls
Symbolization of Indications Appearing on Machine Plates
Spindle Noses for Lathes

Hand Tools — Revisions of IS : 273-1951 Picks and Beaters, and IS : 274-1951 Shovels, and the Specification for *Powrahs* were sent to press. The draft standards for engineers' files; swage blocks and stands; and wood working chisels and gouges were finalized for publication. Besides, the draft standard for screw drivers was awaiting finalization.

Work in Hand

Revision of:
IS: 402-1952 Chisels
IS: 510-1953 Blacksmith's Anvils (Cast Steel)
Machinists Vices (with and without Quick Release Device)
Pipe Vices (Open Side and Hinged Jaw Type)

Swivel Base Machine Tool Vices
Blacksmith's Vices
Carpenters' Vices
Spanners
Braces Smith

Abrasives — Draft revision of IS : 715-1957 Coated Abrasives, Glue Bond, was awaiting finalization while the draft safety code for grinding wheels was circulated to elicit comments.

Work in Hand

Preferred Shapes and Sizes of Grinding Wheels

Selection and Use of Coated Abrasives
Emery Fillets

Internal Combustion Engines

Standards Published

IS: 1600-1960 Code for Type Testing of Constant Speed IC Engines for General Purposes
IS: 1601-1960 Performance of Constant Speed IC Engines for General Purposes
IS: 1602-1960 Code for Type Testing of Variable Speed IC Engines for Automotive Purposes
IS: 1603-1960 Performance of Variable Speed IC Engines for Automotive Purposes

Work in Hand

Piston Rings
Code of Practice for Installation of Land Engines
Cast Iron Pistons

Aluminium Alloy Pistons
Performance and Testing of Diesel Engines for Rail Traction Purposes
Methods of Tests for Fuel Filters

Drawings — Revision of IS : 696-1955 Code of Practice for General Engineering Drawings was sent for publication.

Bicycles — Draft revisions of IS : 624-1955 Bicycle Rims, and IS : 630-1955 Bicycle Spokes (Plain) and Nipples for Spokes as also draft standards for bicycle tyres and tubes were awaiting finalization.

Work in Hand

Bicycle Steering Head Assembly
Glossary of Terms
Revision of:
IS: 532-1954 Bicycle Tube Valves
IS: 623-1955 Bicycle Frames
IS: 625-1955 Bicycle Handle Bars

Revision of:
IS: 626-1955 Bicycle Seat Pillars
IS: 628-1955 Bicycle Pedal Assembly
IS: 629-1955 Bicycle Hub Assemblies

Screw Threads — Draft Indian Standard for end of bolts and screws was finalized whereas five draft standards on the following subjects were awaiting finalization:

Technical Supply Conditions for Threaded Fasteners
Clearance Holes for Metric Bolts
Revision of IS : 549-1954 Split Cotter Pins
Rivets for General Purposes (Below 12 mm Diameter)
Precision Grade Studs

Standards Published

IS: 1363-1960 Black Hexagonal Bolts (6 to 39 mm) with Nuts and Black Hexagonal Screws (6 to 24 mm)
IS: 1364-1960 Precision, and Turned Hexagonal Bolts (6 to 39 mm) with Nuts and Hexagonal Screws (6 to 39 mm)

Sports Goods — The draft standard specifications for tennis balls, and football bladders were awaiting finalization.

Wire Ropes and Wire Products — Four draft standards, namely 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 were finalized for publication. Besides, the draft revision of IS : 278-1951 Galvanized Steel Barbed Wire for Fencing, and four draft standards for the following items were awaiting finalization:

Galvanized Stay Strand for Telegraph and Telephone Purposes, Signal Posts and Suspension Strand
Galvanized Steel Wire Strand for Signalling Purposes
Stranded Galvanized Steel Wire for Fencing
Galvanized Steel Wire, Chain Link Fences

Pencils — The draft standard specification for Graphite for Pencil Slips completed general circulation and was awaiting finalization.

Sewing Machines

Standard Published

IS: 1610-1960 General Requirements for Sewing Machines (Household Model)

Work in Hand

Sewing Machine Needles

Pumps — The specification for Vertical Turbine Pumps for Clear, Cold, Fresh Water (IS : 1710-1960) was sent for printing.

Optical and Mathematical Instruments — Three Indian Standard Specifications for (a) Metric Steel Scales for Engineers, (b) Trough Compass, and (c) 4-Metre Levelling Staff, Folding Type were sent to press. Two draft standards for prismatic compasses (dry and liquid) were finalized, and the draft standard relating to metric diagonal scales was approved for circulation.

Standards Published

IS: 1400-1960 Optical Glass
IS: 1480-1960 Metric Scales for General Purposes
IS: 1482-1960 Metric Scales for Use with Drafting Machines
IS: 1632-1960 Bubbles

Work in Hand

Surveying Chain Pins	Protractors for Use of Drawing
Set Squares for Use of Drawing Offices	Offices
	Drafting Machines

Cargo Marking

Standards Published

IS: 1260-1958 Code of Symbols for Labelling of Dangerous Goods (*Hindi Version*)
Amendment No. 1 to IS: 1260-1958 Code of Symbols for Labelling of Dangerous Goods

Automotive Vehicles

Work in Hand

Brake Lining	Helical Springs for Automobile Suspension
Vehicle Performance Code	

Ball and Roller Bearings

Work in Hand

Ball and Roller Bearings for General Engineering Purposes	Materials for Bearing Components and Tests for the Same
Identification Code for Ball and Roller Bearings	Dimensions of Bearings (Including Tolerances)
Glossary of Terms Relating to Ball and Roller Bearings	Methods of Tests for Complete Bearings

Weights and Measures — Three draft standards, namely person weighing machines; large metric capacity proving measures; and self-indicating and semi-self-indicating machines, were circulated for eliciting comments.

Standards Published

IS: 1433-1960 Beam Scales
IS: 1435-1960 Platform Weighing Machines
IS: 1436-1960 Weigh-Bridges
IS: 1702-1960 Spring Balances

Work in Hand

Revision of IS: 1058-1957 Commercial Metric Capacity Measures	Methods of Testing the Accuracy of Commercial Measuring Instruments Used in Petroleum Trade
Metric Tapes for Use in Measurement of Oil Quantities	Automatic Weighing Machines

Pulleys and Belts — Draft standards for rubber and canvas conveyor and elevator belting, round leather belting for small machines, and vegetable tanned leather belting for power transmission, and also draft code of practice for installation and maintenance of drives for power transmission were awaiting finalization.

Standard Published

IS: 1691-1960 Cast Iron and Mild Steel Flat Pulleys

Work in Hand

V-Belts

Engineering Metrology

Work in Hand

Steel Straightedges	Dial Gauges
Guide to the Selection of Fits	Engineers' Squares
Limits and Fits for Sizes Above 500 mm Up to 3 150 mm	Master Squares
	Surface Plates

Transmission Devices

Work in Hand

Parallel Keys and Keyways	Helical and Spur Gears
Shaft Heights	Chains and Sprockets
Rigid Couplings	Oil Seals
Flexible Couplings	Dimensions for Shaft Height for Driving and Driven Machines
Machine Cut Gears	

Small Tools — Indian Standard Specification for Twist Drills (Revision of IS : 599-1954) was sent to press. Six draft standards on the following items were finalized for publication:

General Requirements for Milling Cutters

Dimensions of Milling Cutters

Reamers

Screwing Taps

Thread Cutting Dies

Dimensions for Driving Squares

Besides, the draft standard for dimensions for self-holding tapers was circulated for comment, and three draft standards, namely single point cutting tools; milling arbors; and collars and spacers for milling arbors were approved for circulation.

Work in Hand

Hacksaw Blades

Plug and Ring Gauges for Self Holding Tapers

Oil Burning Domestic Appliances (Pressure Type) — A draft standard specification for blow lamps was finalized, and the draft standard for gas mantles was approved for circulation.

Work in Hand

Revision of IS: 1342-1959 Oil Pressure Stoves

Hanging Type Oil Pressure Lamps

Utensils

Standard Published

IS: 1660-1960 Wrought Aluminium Utensils

Work in Hand

Stainless Steel Utensils

7. STRUCTURAL AND METALS DIVISION

7.1 During the period under review, the Structural & Metals Division formulated 41 new Indian Standards and revised 2 existing Indian Standards (see Appendix A).

7.2 Considerable progress was made in the preparation of standards for ferrous, non-ferrous and other allied subjects; and important standards sent for publication included schedules for wrought steels for general engineering purposes, glass house, bottom pouring and ladle refractories; metric sizes for firebricks; specification for cast iron pressure pipes and fittings for water, gas and sewage; and methods of chemical analysis of manganese ores. In addition, two handbooks relating to design of steel beams and plate girders, and steel columns and struts were also sent for publication.

7.3 Of the draft standards finalized for publication, mention may be made of the code for designation of steels, methods of chemical analysis of ferroalloys, procedure for metal arc welding of mild steel, code of practice for

training and testing of oxy-acetylene welders and handbook for manual metal arc welding for welders.

7.4 The draft standards issued for wide circulation included the specifications for boiler materials and pressure vessels, dimensional standards for hot rolled products in metric units, high silica sands and sodium-base bentonite for use in foundry and refractories for steel plants.

7.5 A number of new subjects were taken up for standardization including methods of chemical analysis of chromite; physical tests for steel, steel products, copper and copper alloys; specifications for cast iron pipe flanges and flanged fittings for the petroleum industry; and code of practice for training and testing of metal arc and gas welders for specialized jobs.

7.6 The specific work done by the different sectional committees under the Structural & Metals Division Council is briefly summarized below:

Metal Standards — Draft Indian Standard Code for Designation of Steel was finalized for publication; draft Standard for Coding and Classification for Non-Ferrous Scrap Metals and Residues was issued into wide circulation, and draft Standard Code for Designation of Pig Iron and Ferro-Alloys was approved for wide circulation.

Work in Hand

Glossary of Terms Relating to Iron and Steel

Glossary of Terms Relating to Copper and Copper Alloys

Glossary of Terms Relating to Foundry Technology

Colour Code for Identification of Metallic Materials

Code for Designation of Non-Ferrous Metals and Alloys

Round Bars for the Production of Metric Threaded Components

Hexagonal Bars for the Production of Metric Threaded Components

Methods of Protection Against Corrosion for Light Gauge Steel Used in Buildings

Performance Tests for Protective Schemes Used in Corrosion Protection of Light Gauge Steel

Corrosion Protection of Steel Transmission Towers and Steel Works in Foundation

Phosphate Treatment of Iron and Steel

Methods of Chemical Analysis — Six draft methods of chemical analysis of ferromolybdenum, ferrophosphorus, ferrotitanium, silicomanganese, ferrovanadium, and ferrotungsten were finalized. It was, however, decided that these six draft methods along with the three draft methods of chemical analysis of ferrosilicon, ferrochromium, and ferromanganese and speigeleisen finalized last year should now be unified into one publication to be published as Indian Standard Methods of Chemical Analysis of Ferro-Alloys.

Draft standards on chemical analysis of bauxite and tin ingot were issued for wide circulation for eliciting comments.

In order to prepare comprehensive standards, it was decided to enlarge the scope of IS: 406-1953 Methods of Chemical Analysis of Slab Zinc and Zinc Base Alloys to include the methods of chemical analysis for high purity zinc and zinc alloys for die castings; IS: 1047-1956 Methods of Chemical

Analysis of Antimony to include the methods of chemical analysis of antimonial lead for storage batteries and IS: 1546-1960 Method for Determination of Arsenic in Iron and Steel to cover the determination of arsenic in copper and copper alloys.

Similarly, preliminary drafts on some of the other items were combined and comprehensive draft standards for methods of chemical analysis of fluorite (flourspar), limestone, dolomite and allied minerals and quartzite and high silica sands were approved for wide circulation.

Preliminary draft regarding the revision of IS: 504-1954 Methods of Chemical Analysis of Aluminium and Its Alloys was prepared.

Standards Published

- IS: 1345-1960 Methods of Chemical Analysis of Printing Metals
- IS: 1473-1960 Methods of Chemical Analysis of Manganese Ores
- IS: 1527-1960 Methods of Chemical Analysis of Fireclay and Silica Refractory Materials

Work in Hand

Revision of:

- | | |
|---|---|
| <ul style="list-style-type: none"> IS: 403-1952 Methods of Chemical Analysis of Lead IS: 429-1954 Methods for Testing Weight and Uniformity of Coating on Galvanized Iron and Steel Wires and Steel Sheets IS: 440-1955 Methods for Chemical Analysis of Copper IS: 441-1955 Methods for Chemical Analysis of Brasses and Bronzes IS: 728-1956 Methods for Determination of Weight, Thickness and Uniformity of Coating on Galvanized Articles Other Than Wires and Sheets | <ul style="list-style-type: none"> Chemical Analysis of Chromite Chemical Analysis of Nickel Anodes, Including Refined Nickel and Foundry Nickel Chemical Analysis of Metallic Manganese, Metallic Silicon, Calcium Silicon, Metallic Chromium, and Silico Chromium Methods of Chemical Analysis of Groups of Metals Methods for Polarographic and Spectrographic Analysis of High Purity Zinc and Zinc Alloys for Die Casting |
|---|---|

Methods of Physical Tests — Five draft standards relating to load calibration of testing machines for tensile testing of steel, brinell hardness test for grey cast iron, tensile test for light metals and their alloys, brinell hardness test for light metals and their alloys, and diamond pyramid hardness test for light metals and their alloys were finalized for publication.

Seven draft standards relating to calibration of brinell hardness testing machines, flanging test on steel tubes, drift expanding test on steel tubes, bend test on steel tubes, flattening test on steel tubes, method of test for expansion of copper and copper alloy tubes, and method of mercurous nitrate test for copper and copper alloys were issued in wide circulation.

Two preliminary draft standards were prepared on glossary of terms relating to industrial radiography and fluoroscopy and ultrasonic testing.

Standards Published

- IS: 1521-1960 Tensile Testing of Steel Wire
- IS: 1586-1960 Rockwell Hardness Test (B & C) Scales for Steel
- IS: 1598-1960 Izod Impact Test for Steel

- IS: 1599-1960 Bend Test for Steel Products Other Than Sheet, Strip, Wire and Tube
- IS: 1608-1960 Tensile Testing of Steel Products Other Than Sheet, Strip, Wire and Tube
- IS: 1663-1960 Tensile Testing of Steel Sheet and Strip of Thickness 0.5 mm to 3 mm
- IS: 1692-1960 Simple Bend Testing Steel Sheet and Strip Less Than 3 mm Thick
- IS: 1716-1960 Reverse Bend Test of Steel Wire
- IS: 1717-1960 Simple Torsion Testing of Steel Wire
- IS: 1754-1961 Calibration of Vickers Hardness Testing Machines
- IS: 1755-1961 Wrapping Test of Wire
- IS: 1756-1961 Modified Erichsen Cupping Test for Steel Sheet and Strip
- IS: 1757-1961 Beam Impact Test (V Notch) on Steel

Work in Hand

- | | |
|---|---|
| <ul style="list-style-type: none"> Recommended Practice for Radiographic Testing Reference Blocks for Routine Checking of Ultrasonic Testing Equipment Tensile Testing of Grey Cast Iron | <ul style="list-style-type: none"> Simple Bend Testing of Aluminium and Aluminium Alloys, Sheet and Strip Simple Bend Testing of Aluminium and Aluminium Alloys, Tube |
|---|---|

Steel — Draft revisions of five Indian Standards, namely IS: 279-1951 Galvanized Iron and Steel Wire for Telegraph and Telephone Purposes; IS: 412-1954 Expanded Metal (Steel) for General Purposes, IS: 597-1955 Black Plate for Tinning and Tin-Plate; IS: 648-1955 Electrical Steel Sheets, and IS: 1030-1956 Steel Castings for General Engineering Purposes; and eight draft standards on steel bars for production of machined parts and for general engineering purposes; steel bars for stays; carbon steel forgings for general purposes; carbon molybdenum steel forgings; steel plates for pressure vessels; cold reduced tinplate and cold reduced blackplate; line pipes; and high test line pipes were issued in wide circulation.

Two preliminary draft standards were prepared on mild steel wire (Revision of IS: 280-1951) and steel wire rods for manufacture of machine screws.

Standard Published

- IS: 1673-1960 Mild Steel Wire Suitable for the Manufacture of Machine Screws (By Cold Heading Process)

Work in Hand

- | | |
|--|--|
| <ul style="list-style-type: none"> Revision of: IS: 277-1951 Galvanized Steel Sheets (Plain and Corrugated) IS: 513-1954 Special Qualities of Steel Sheets Mild Steel Wire for Manufacture of Wood Screws Carbon Steel Boiler and Superheater Tubes Carbon Steel Bars, Billets, Blooms and Slabs for Forgings Steel Rivets and Stay Bars for Boilers Steel Plate for Boilers Steel Billets, Bars and Sections for Boilers | <ul style="list-style-type: none"> Steel Tubes for Automobile Purposes Steel Tubes for General Engineering Purposes Steel Pipes for Hydraulic Purposes Steel Tubes for Cycle and Motor Cycle Purposes Stainless Steel for Use in the Manufacture of Utensils Steel Spigot and Socket Pipes and Specials for Water, Gas and Sewage Boiler and Superheater Tubes for Marine and Naval Purposes Steel Tubes for Water Well Casing (Shaft Enclosing Tubes and Column Pipes) |
|--|--|

Structurals — Draft specification for rolling and cutting tolerances for hot rolled steel products, and cold formed light gauge structural steel sections were finalized for publication.

Four draft specifications for mild steel plate sheet and strip for general engineering purposes, rolled steel bulb plates, mild steel flats for general engineering purposes, and mild steel bars, round and square for general engineering purposes, were issued in wide circulation.

Work in Hand

Rolled Steel Piling Sections
Special Channel Sections
Structural Sections in Aluminium and Aluminium Alloys
Tubular Steel Poles for Overhead Power Lines
Tubular Steel Poles for Traction and Telecommunication Purposes

Handbook (giving standard connections from beam to beam and beam to column, etc, along with other details such as permissible stresses in group rivet and bolt groups, strength of materials and other general information)

Structural Engineering — A draft code of practice relating to design of vertical mild steel cylindrical welded oil storage tanks was finalized for publication.

Draft Revision of IS: 800-1956 Code of Practice for Use of Structural Steel in General Building Construction was issued in wide circulation.

Handbooks Published

ISI Handbook for Structural Engineers No. 2 Steel Beams and Plate Girders
ISI Handbook for Structural Engineers No. 3 Steel Columns and Struts

Work in Hand

Code of Practice for:
Design of Cranes and Hoists
Use of Steel in Gas Storage Tanks
Use of Steel in Gravity Water Tanks
Use of Steel in Overhead Transmission Line Towers
Use of Steel in Radio Masts
Use of High Strength Bolts in Structures
Use of Steel in Temporary Constructions
Use of Aluminium Sections in Structures
Handbooks for Structural Engineers:
Functions of Good Design in Steel Economy
Economy of Steel Through Choice of Fabrication Methods
Roof Trusses in Steel
Single Storey Industrial and Mill Type Buildings in Steel

Handbooks for Structural Engineers:
Multi-Storey Steel Framed Structures for Offices and Residences
Steel Transmission Towers
Steel Work in Cranes and Hoists
Large Span Shed Type Buildings in Steel
Structural Use of Tubular Sections
Structural Use of Light Gauge Steel Sections
High Strength Bolting in Steel Structures
Light Weight Open Web Steel Joist Construction
Design of Rigid Frame Structures in Steel
Application of Plastic Theory in Design of Steel Structures
Guide for Application of Plastic Theory in Design of Steel Structures

Pig Iron and Ferro Alloys — Five draft standards relating to metallic manganese, metallic silicon; metallic chromium, silico chromium, and

calcium silicon were issued in wide circulation. A draft Amendment No. 1 to IS: 1170-1957 Ferro Chromium was approved for wide circulation.

Standards Published

IS: 1466-1960 Ferro Vanadium
IS: 1467-1960 Ferro Tungsten
IS: 1468-1960 Ferro Titanium
IS: 1469-1960 Ferro Molybdenum
IS: 1470-1960 Silico Manganese
IS: 1471-1960 Ferro Phosphorus

Work in Hand

Ferro Nickel

Foundry Nickel

Refined Nickel

Cast Iron and Malleable Cast Iron — A draft standard relating to iron castings with spheroidal or nodular graphite was finalized for publication.

Draft standard for cast iron spigot and socket soil, waste and ventilating pipe fittings and accessories was issued in wide circulation.

Standards Published

IS: 1536-1960 Centrifugally Cast (Spun) Iron Pressure Pipes for Water, Gas and Sewage
IS: 1537-1960 Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage
IS: 1538-1960 Cast Iron Fittings for Pressure Pipes for Water, Gas and Sewage

Work in Hand

Revision of:
IS: 210-1950 Grey Iron Castings
IS: 227-1954 Malleable Iron Castings
Malleable Cast Iron Pipes Fittings
Ingot Moulds

Chilled Iron Rolls
Cast Iron Pipe Flanges and Flanged Fittings for the Petroleum Industry
Cast Iron Traps
Code of Practice for Laying of Cast Iron Pipes

Light Metals and Their Alloys — Three draft standards relating to anodized aluminium, rolled aluminium rods (electrical conductor grade) for electrical purposes, and 99.7 percent primary aluminium notched bars and ingots for remelting for aircraft purposes were finalized for printing.

Two draft specifications relating to inspection and testing procedure for aluminium ingots, aluminium alloy ingots and castings, magnesium ingots, magnesium alloy ingots and castings for aircraft; and aluminium alloy hardeners for remelting were issued for comments. A draft standard on wrought aluminium for electrical purposes — wire (other than that used for overhead conductors) was approved for wide circulation.

A preliminary draft Indian Standard relating to shapes and sizes of aluminium notched bars and ingots was prepared.

Work in Hand

Recommendations for the Selection of Structural Aluminium Alloys
Code of Practice for Die Casting Aluminium Alloys

Inspection and Testing Procedure for Aluminium and Aluminium Alloys for Aircraft

Copper and Copper Alloys — Three draft standards relating to naval brass rods and sections (suitable for machining and forging) (Revision of IS: 291-1951), brass tubes for general purposes (Revision of IS: 407-1953), and copper plate, sheet and strip for industrial purposes, and three draft amendments relating to IS: 191-1958 Copper (*Revised*); IS: 410-1959 Rolled Brass Plate, Sheet, Strip and Foil; and IS: 422-1959 Brass Sheet and Strip for the Manufacture of Utensils were finalized for publication. One draft Indian Standard relating to copper strip for electrical purposes was issued in wide circulation.

Five draft standards on nickel silver sheet and strip for general purposes; phosphor copper ingot; brass strip for the manufacture of pen nibs; free-cutting brass rods and bars (for use in screw machines) (Revision of IS: 319-1951); and high strength brass rods, bars and sections (Revision of IS: 320-1951) were approved for wide circulation.

Standards Published

IS: 304-1961 High Tensile Brass Ingots and Castings (*Revised*)
IS: 306-1960 Tin Bronze Ingots and Castings (*Revised*)

Work in Hand

Revision of:

IS: 292-1951 Brass Ingots and Castings (*Tentative*)

IS: 305-1952 Aluminium Bronze Ingots and Castings

IS: 318-1952 Leaded Tin Bronze Ingots and Castings (*Tentative*)

Copper Alloy Tubes for Condensers in Sea-Going Vessels

Copper Sheet for Electrical Purposes

Copper Tubes for General Purposes

Code of Practice for Tinning of Brassware

Copper and Brass Foils for Radiator Cores

Cadmium Copper for Electrical Purposes

Copper Plates for Photo-Engraving

Guiding Metal

Cast Nickel Silver Alloys

Cast Copper and Copper Alloy Pipe Fittings for Steam, Water, Gas and Oil

Aluminium Bronze Ingots and Castings for Overhead Fittings in Electric Traction

Brass Wire for Cold Heading and Free-Cutting Purposes

Standardization and Rationalization of Copper and Copper Base Alloys

Lead, Zinc, Tin, Antimony and Their Alloys — A draft standard relating to antifriction bearing alloys (Revision of IS: 25-1950) was finalized for publication.

Three draft standards relating to rosin cored solder wire; lead pipes (Revision of IS: 404-1952); and zinc plate, sheet and strip; and two draft amendments relating to IS: 742-1955 Zinc Base Alloy Die Castings and IS: 27-1956 Pig Lead were issued in wide circulation.

Standards Published

IS: 405-1960 Lead Sheet (*Revised*)

IS: 1654-1960 Antimonial Lead for Storage Batteries

IS: 1655-1960 Code of Practice for Manufacture of Zinc Alloy Pressure Die Castings

Work in Hand

Revision of IS: 211-1958 Antimony

Code of Practice for Hot Dip Galvanizing of Iron and Steel

Code of Practice for Zinc Impregnation (Sherardizing) of Iron and Steel

Precious Metals — Preliminary draft standards relating to solders for use with goldwares, and method of assaying silver and silver alloys were approved for wide circulation.

Work in Hand

Fine Gold in the Form of Bar, Sheet, Wire, Grain and Mohar

Fine Silver in the Form of Bar, Sheet, Wire, Grain and Mohar

Grades of Silver and Silver Alloys

Methods of Assaying Gold and Gold Alloys

Platinum in the Form of Plate, Sheet, Wire and Tube

Gold and Silver Thread (*Jari*)

Welding General — Two draft codes, one for metal arc welding of mild steel, and the other for training and testing of oxy-acetylene welders; and a draft amendment relating to IS: 814-1957 Covered Electrodes for Metal Arc Welding of Mild Steel were finalized for publication.

Two draft standards relating to hose fittings for welding and cutting appliances, and filler rods and wires for inert gas arc welding were issued in wide circulation.

It was decided to take up work on drafting a code of practice for training and testing of metal arc and gas welders for specialized jobs and handbook for hardfacing rods. Work on revision of Indian Standard Specification for Silver Solder (IS: 192-1956) was transferred from Precious Metals Sectional Committee to the Welding General Sectional Committee.

Amendment Published

Amendment No. 1 to IS: 813-1957 Scheme of Symbols for Welding

Work in Hand

Code of Practice for Inspection of Welds

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

Spot Welding Electrodes

Handbook for Welding Supervisors

Structural Welding — Draft ISI handbook for manual metal arc welding for welders was finalized for publication. A preliminary draft code of practice for welding of structures subject to dynamic loading was approved for wide circulation.

It was decided to take up revision of IS: 816-1956 Code of Practice for Use of Metal Arc Welding for General Construction in Mild Steel, to bring it in line with the draft revision of IS: 800-1956 Code of Practice for Use of Structural Steel in General Building Construction. It was also decided to take up preparation of a code of practice for welding of mild steel bars used in reinforced concrete work.

Work in Hand

Qualifying Tests for Welders Engaged in Welding of Boilers

Code of Practice for Use of Welding in Tubular Construction

Code of Practice for Use of Welding in Pipelines

Qualifying Tests for Welders Engaged in Welding of Steampipes

Handbook for:
Designing and Detailing Welded
Joints and Connections
Gas Welders
Essential Characteristics of Design
for Structural Welding

Handbook for:
Estimating Costs for Welded Structures and Choosing Most Economical Design for Structural Welding
Weldments to Replace Castings

Ores and Raw Materials — Preliminary investigations were made regarding the usefulness of formulating material specifications for manganese ore-battery grade, manganese ore-metallurgical grade, and iron ores for consideration of the sectional committee.

Investigations were also completed regarding the proposals received for formulating standard specifications for dolomite, fluorspar and limestone for use in steel plants.

Foundry — Two draft standards relating to sodium-base bentonite, and high silica sand for use in foundries were issued in wide circulation.

A programme of investigations and location of deposits of silica sands for use in foundry was initiated with the assistance of Geological Survey of India.

Standard Published

IS: 1752-1961 Coal Dust for Use in Cast Iron Foundry

Work in Hand

Methods of Testing of Foundry Sands and Binding Materials; Including Clays, Liquid Binders, and Synthetic Binders

Calcium-Base Bentonite for Use in Foundry
Silica Flour for Foundry Purposes

Refractories — Two draft standards relating to blast furnace refractories for steel plants, and methods of sampling and physical tests for refractory materials were finalized for publication.

Three draft standards relating to sillimanite refractories, natural sillimanite blocks for use in glass melting tank furnaces and glossary of terms relating to refractory materials were issued in wide circulation.

Standards Published

Amendment No. 1 to IS: 8-1958 High Heat Duty Fireclay Refractories (Second Revision)

IS: 1523-1960 Bottom Pouring Refractories for Steel Plants

IS: 1525-1960 Ladle Refractories for Steel Plants

IS: 1526-1960 Sizes and Shapes of Firebricks

IS: 1748-1961 Sizes of Graphite Crucibles

IS: 1749-1961 Magnesite Refractories for Steel Plants

IS: 1750-1961 Dead Burned Pea Magnesite

IS: 1751-1961 Fireclay Cupola Refractories

Work in Hand

Revision of:
IS: 194-1950 Recommendations for Refractories for Railways

Revision of:
IS: 195-1955 Fireclay Mortar for Laying Fireclay Refractory Bricks

Revision of:
IS: 483-1953 Fireclay Refractories for Oil-Fired Boiler Furnaces of Naval Ships
Insulating Firebricks

Stoppers and Nozzles for Steel Plants
Siliceous or Semi-Siliceous Bricks
Graphite Crucibles
Preferred Sizes for Firebricks for 12 in. and Higher Series

Alloy Steels and Special Steels — Draft schedules for wrought steels for general engineering purposes were finalized for publication.

Work in Hand

Comparison of Indian and Overseas Standards for Wrought Steels

Commentary on Indian Standard Schedules for Wrought Steels

8. TEXTILE DIVISION

8.1 During the period under review, thirty Indian Standards (*see Appendix A*) for various sectors of the textile industry were either published or were under print.

8.2 Amongst the published standards, special mention may be made of IS: 1671-1960 Method for Determination of Skein Breaking Load (Strength), Tenacity and Yarn Strength Index of Cotton Yarn (By Constant-Rate-of-Traverse Machine) (Metric System). This standard is important from the point of view of metricization in the cotton textile industry inasmuch as yarn strength index, a quantity obtained by dividing the skein breaking load (strength) of yarn in grams by its universal count in tex, would be a measure of strength of yarn in metric system; this would correspond to the count-strength product in fps system. It has also been established that for a given yarn, the yarn strength index and count-strength product are numerically the same for all practical purposes. A mention may also be made of IS: 1721-1960 Specification for Hair Belting Yarn, the work on which had been taken up at the instance of the Tariff Commission on a high priority basis. The sub-standard quality of domestic hair belting was attributed to the inferior quality of indigenous hair yarn. This standard would go a long way in meeting the requirements of the belting manufacturers to produce hair beltings of standard quality.

8.3 A brief account of the work accomplished in various fields of the textile industry is given below:

Physical Methods of Tests — The draft guide for marking textile materials made of wool, was finalized for publication.

Standards Published

IS: 1611-1960 Method for Cotton Fibre Immaturity Count: Polarized-Light Method

IS: 1670-1960 Method for Determination of Breaking Load (Strength), Elongation at Break and Tenacity of Single Strand of Cotton Yarn (By Constant-Rate-of-Traverse Machine)

IS: 1671-1960 Method for Determination of Skein Breaking Load (Strength), Tenacity and Yarn Strength Index of Cotton Yarn (By Constant-Rate-of-Traverse Machine) (Metric System)

Work in Hand

Determination of:

Fineness of Cotton Fibres by Air-flow Method
Universal Count of Yarn Removed from Cotton Fabrics
Strength of Cotton Fibres: Flat Bundle Method
Regularity and Evenness of Yarn (Photographic Appearance Standards)
Neppiness in Raw Cotton
Crimp of Yarn in Cloth
Whiteness of Cotton Materials
Lustre in Cotton Materials
Upper Half Mean Length of Cotton Fibres, by Fibrograph and by Uster Stapling Apparatus
Specific Area and Immaturity Ratio of Cotton Fibres: Arealometer Method
Crimp in Wool in Fleece
Universal Count of Woollen and Worsted Yarn
Breaking Load (Strength) and Elongation at Break of Woven Wool Fabrics (By Constant-Rate-of-Traverse Machine)
Length and Width of Wool Fabrics
Twist in Woollen and Worsted Yarn
Length and Width of Jute Fabrics
Porter and Shots of Jute Fabrics

Determination of:

Weight per Linear Metre and Weight per Square Metre of Jute Fabrics
Ends and Picks in Woven Silk Fabrics
Silk Fabric Dimensions
Weight per Square Metre and Weight per Linear Metre of Silk Fabrics
Breaking Load (Strength) and Elongation of Woven Silk Fabrics (By Constant-Rate-of-Traverse Machine)
Twist in Silk Yarn
Universal Count of Silk Yarn
Glossary of Terms for Describing Fibre Content of Fabrics Containing Silk
Definitions of Terms Relating to Types of Fabrics Produced in Cotton, Silk, Wool, and Jute Industries
Designation of Yarn Structure
Universal Count of Yarn Removed from Fabric Free from Added Matter
Weight of Warp and Weft Free from Added Matter per Unit Area of Cloth

Chemical Methods of Tests — The draft methods for (a) determination of pH value of aqueous extracts of textile materials, (b) determination of colour fastness of textile materials to formaldehyde, and (c) detection and estimation of damage in cotton yarn and cordages due to micro-organisms were finalized for publication.

Standards Published

IS: 1383-1960 Method for Determination of Scouring Loss in Grey and Finished Cotton Textile Materials
IS: 1623-1960 Method for Testing Jute Fabrics for Resistance to Attack by Micro-Organisms
IS: 1633-1960 Methods for Testing Jute Cordages for Resistance to Attack by Micro-Organisms
IS: 1688-1960 Procedure for Determination of Fastness of Dyestuffs
IS: 1689-1960 Method for Determination of Barium Activity Number of Cotton Textile Materials
IS: 1690-1960 Method for Determination of Colour Fastness of Textile Materials to Nitrogen Oxides

Work in Hand

Determination of:

Colour Fastness of Textile Materials to Chlorinated Water
Colour Fastness of Textile Materials to Metals in the Dyebath: Chromium Salts

Determination of:

Colour Fastness of Textile Materials to Metals in Dyebath: Iron and Copper
Colour Fastness of Textile Materials to Washing in the presence of Hypochlorite

Determination of:

Colour Fastness of Textile Materials to Washing in Presence of Sodium Hypochlorite
Strength of Anthraquinone Vat Blue RSN, Anthraquinone Vat Blue BC, Anthraquinone Vat Green B and Caledon Jade Green 2G
Absorbancy of Cotton Textile Materials
Scouring Loss in Silk Fabric
Residual Nitrogenous Matter
Shrinkage of Woven Fabrics on Washing
Detergency of Wetting Agents
Emulsifying Power of Wetting Agents
Dispersing Power of Wetting Agents

Method for:

Estimation of Residual Starch in Cotton Fabrics After Desizing
Resistance of Fabrics and Yarns to Insect Pests
Quantitative Estimation of Fibres and Their Mixtures
Determining Shrinkage on Washing of Cotton Hosiery Goods

Method for:

Identification of Cellulose Derivatives and Synthetic Resin Finishes on Cotton and Regenerated Cellulosic Fibres
Estimation and Carboxylic Acid Groups in Cotton Materials
Detection and Estimation of Damage in Cotton Due to Micro-Organisms
Detection and Estimation of Cotton Antiseptics
Estimation of Residual Chlorine
Detection and Estimation of Damage in Jute Fabrics Due to Micro-Organisms
Detection and Estimation of Damage in Jute Yarn and Cordages Due to Micro-Organisms
Detection and Estimation of Damage in Manila Cordages

Amendment No. 1 to:

IS: 970-1956 Method for Determination of Colour Fastness of Textile Materials to Degumming
IS: 987-1958 Method for Determination of Colour Fastness of Textile Materials to Bleaching with Sodium Chlorite

Cotton Yarn and Fabrics — The draft specifications for (a) cotton tape newar, grey or dyed, (b) cotton embroidery thread, bleached or dyed, (c) cotton lining cloth (warp faced satin) dyed; and draft Amendment No. 1 to (a) IS: 177-1951 Cotton Drills, and (b) IS: 1143-1957 Cotton Mosquito Netting, Square Mesh, Dyed were finalized for publication.

Standard Published

IS: 1720-1960 Cotton Sewing Thread, Bleached or Dyed

Work in Hand

Cotton Umbrella Cloth
Cotton Fabric, Dyed, Water Resistant
Cotton Tape for Electrical Purposes

Textile Materials for Aeronautical Purposes

Work in Hand

Amendment No. 1 to:

IS: 514-1954 Mercerized Cotton Fabric, Grade 1, for Aircraft
IS: 596-1954 Mercerized Cotton Fabric, for Gliders
IS: 598-1955 Mercerized Cotton Fabric, Grade 2, for Aircraft
IS: 714-1955 Cotton Reinforcing Tape for Aircraft
IS: 1045-1957 Cotton Fabric for Covering Plywood in Aircraft

Flax Webbing for Aeronautical Purposes
Cotton Webbing for Aircraft Safety Belts
Linen Sewing Thread for Aeronautical Purposes
Braided Linen Cord for Aeronautical Purposes

Woollen and Worsted Fabrics

Standards Published

IS: 1681-1960 Blanket, Woollen, Dyed
IS: 1719-1961 Felts, Woollen, Proofed and Unproofed
IS: 1721-1960 Hair Belting Yarn

Work in Hand

Worsted *Lohis*
Supper Shawls
Woollen Rugs
Worsted Suitings (Top Dyed)
Summer Suitings
Woollen Coating
Tweed
Union Suitings
Woollen Blankets
Worsted Suitings (Piece-Dyed)
Worsted Suitings (Special)
Hand-Made Woollen Carpets (South India), for Export
Hand-Made Woollen Carpets and Woollen Rugs (Floor Coverings), Such as are Made in Rajasthan, Agra, Gwalior, etc, for Export
Code for Packing Raw Wool for Export
Woollen Flannel for Trousering

Worsted Shirting
Blazer Cloth
Code for Inland Packaging of Wool Textiles
Amendment No. 1 to:
IS: 668-1955 Serge, Ordinary
IS: 669-1955 Serge, Drab Mixture
IS: 670-1955 Serge, Worsted Dyed (Superior)
IS: 671-1955 Serge, Service Dress (Drab Mixture)
IS: 673-1955 Cloth, Woollen, Twill, Dyed
IS: 674-1955 Flannel, Silver Grey, Hospital
IS: 675-1955 Cloth, Bunting, Worsted
IS: 676-1955 Bunting, Worsted
Amendment No. 2 to IS: 672-1955 Serge, White, Lining

Coir and Coir Products

Standard Published

IS: 1693-1960 Door Mats-Rod

Work in Hand

Door Mats, Creel, Bit and Fibre

Anjengo Type Yarn

Man-Made Fibre and Fabrics

Work in Hand

Methods for Determination of Such Characteristics as Sulphur Content, Appearance, Milkiness, etc, in Rayon Yarn and Acetate Yarn

Grading of Continuous Filament Rayon Yarn and Acetate Yarn

Textile Sizing and Finishing Materials

Standard Published

IS: 1605-1960 Tapioca Starch for Use in the Cotton Textile Industry

Work in Hand

Tapioca Flour

Handloom Fabrics (Cotton, Silk and Wool) — The draft Indian Standard Specification for Handloom Cotton Mootus, Striped or Checked was finalized for publication.

Standards Published

IS: 1556-1960 Handloom Cotton Poplin, Bleached or Dyed
IS: 1557-1960 Handloom Cotton Bed Durries
IS: 1579-1960 Handloom Cotton Twills, Bleached or Dyed
IS: 1583-1960 Handloom Silk Dhoties, Loomstate
IS: 1584-1960 Handloom Silk Shirting, Loomstate
IS: 1686-1960 Handloom Silk Bush Shirt Cloth, Loomstate
IS: 1687-1960 Handloom Silk *Kora* (Loomstate) Cloth

Work in Hand

Handloom Silk Sari Cloth, Undyed, Dyed or Printed	Handloom Rayon Fabrics
Handloom Cotton India Madras	Handloom Staple Fabrics
Handloom Cotton Handkerchiefs, Bleached, Striped or Checked	Handloom Furnishing Fabrics
	Handloom Tapestry Cloth

Ropes and Cordages — Amendment No. 1 to IS: 1084-1957 Hawser-Laid Manila Rope, to IS: 1085-1957 Shroud-Laid Manila Rope, and to IS: 1086-1957 Cable-Laid Manila Rope were finalized.

Work in Hand

Amendment No. 2 to:
IS: 1084-1957 Hawser-Laid Manila Rope
IS: 1085-1957 Shroud-Laid Manila Rope
IS: 1086-1957 Cable-Laid Manila Rope
Amendment No. 1 to:
IS: 1321-1958 Hawser-Laid Sisal Rope
IS: 1371-1958 Shroud-Laid Sisal Rope
IS: 1372-1958 Cable-Laid Sisal Rope
IS: 1410-1959 Hawser-Laid Coir Rope

Amendment No. 1 to:
IS: 1411-1959 Shroud-Laid Coir Rope
IS: 1412-1959 Cable-Laid Coir Rope
Country Jute Twine Three-Ply
Spun Yarn Jute 18-Ply
Tarred Hemp Marline Two-Ply
White Indian Hemp Line
Whip Cord
Cotton Twine Three-Ply
Pilot Lead Line
Hemp Ropes and Cordages
Jute Ropes and Cordages
Cotton Ropes and Cordages (Except Power Transmission Ropes)

Hosiery Yarn and Knitted Garments — The work of collecting samples of cotton vests and testing them with a view to developing a suitable device for measuring their sizes, started last year, was continued by the Convener of the Subcommittee concerned. Some tests were also carried out in the ISI Directorate with the assistance of a local member of the Committee concerned. The Convener of the Subcommittee was engaged in the work of formulation of specifications for a few types of cotton vests. Some samples of woollen worsted socks were also collected from various manufacturers and tests carried out on them.

Work in Hand

Cotton Hosiery:
Plain Knit Underwear
Interlock Underwear

Cotton Hosiery:
Interlock Outerwear

Woollen Hosiery:
 Jerseys Pullovers
 Gloves, Knitted
 Vests, Woollen
 Drawers
 Comforters
 Stockings
 Hose Tops

Woollen Hosiery:
 Cardings
 Mufflers
 Slip-Overs
 Pullovers
 Gents and Ladies Garments
 Scarves
 Jersey, Natural Grey

Textile Mill Stores — The draft specification for shuttles for plain calico looms, suction-threading type was finalized.

Standards Published

IS: 1555-1960 Pitch Bound Wire Reed for Use in Cotton Looms
 IS: 1619-1960 Buffer Bands for Cop-Changing Automatic Looms
 IS: 1718-1960 Cotton Spindle Tapes (for Cotton Textile Mills)
 IS: 1724-1960 Methods of Specifying and Testing Varnished and Enamelled Ring Rabbeth Bobbins for Cotton Mills
 IS: 1737-1960 Small Size Spring Buffers for Cotton Looms
 IS: 1738-1960 Large Size Spring Buffers for Cotton Looms
 IS: 1739-1960 Cotton Healds for Use in Cotton Looms

Work in Hand

Picking Arms (or Sticks) for Overpick Cotton Looms	Bottom Fluted Rollers
Raw Hide Round Foot Pattern 4B	Sawtooth Rollers
Pickers for Cotton Overpick Looms	Knurled Rollers
Raw Hide Pickers for Jute Looms	Spindles
Cotton Combs for Use in Jute Looms	Spindle Tape Used in Jute Textile Industry
Inset Mail Wire Healds for Use in Cotton and Silk Weaving (Excluding Jacquard and Fancy Weaving)	Spindle Tape Used in Wool Textile Industry
Shuttles for Pirn-Changing Automatic Cotton Looms	Amendment No. 1 to IS: 1225-1958 Specification for Leather Picking Bands for Looms (<i>Tentative</i>)

Textile Machinery — The draft Indian Standard Specification for Flat Driving Chains for Carding Engines was issued in wide circulation.

Work in Hand

Major Dimensions and Important Replacement Parts of Looms	Ring Frame and Its Important Component Parts
Major Dimensions for Plain Calico Cotton Looms	Carding Engine and Its Component Parts
Crank Shaft for Use in Plain Calico Cotton Looms	Hand-Driven Socks Knitting Machines
Tappet Shaft (Bottom Shaft) for Use in Plain Calico Cotton Looms	Power-Driven Socks Knitting Machines
Fly Spindles	Power-Driven Outerwear Knitting Machines
Picking Noses	

Wicks for Oil Burning Domestic Appliances

Standard Published

IS: 1740-1960 Flat Cotton Wicks for Hurricane Lanterns and Lamps

Work in Hand

Circular Wicks	Round Wicks
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Jute and Jute Fabrics — The draft specification for A-twill jute bags for packing sugar was finalized for publication.

Work in Hand

Jute Bags for Packing Cement
 Indian Hessians

Packing Jute Manufactures in Bales, Trusses and Bundles

Textile Building Code

Work in Hand

Code of Practice for:
 Safeguards for Cotton Textile Machinery
 Building Construction
 Spacing of Machinery

Code of Practice for:
 Illumination
 Colour Schemes
 Air Conditioning (Humidification, Ventilation, etc)

9. SECTIONAL COMMITTEES UNDER THE EXECUTIVE COMMITTEE

9.1 Documentation Sectional Committee, EC 2 — During the year under report, two draft Indian Standards, namely Guide for Layout of Periodicals and Specification for Title-Page and Back of Title-Page of a Book, were sent into wide circulation. Preliminary drafts concerning the following items were also prepared:

- Recommendations for Bibliographical References,
- Principles for Designing a Scheme of Library Classification, and
- Specification for Reinforced Library Binding.

An important task accomplished during the year was the preparation of a preliminary draft standard on glossary of classification terms. This is a voluminous document running into some 135 pages, and it is the first time in the history of the world that an organized effort has been made to produce a comprehensive publication for the definition of terms used in the field of library classification covering all the different prevailing classification systems. An Indian Standard on a sister subject, namely the Glossary of Cataloguing Terms (IS : 796-1959) has already been published.

Work in Hand

Layout for the Text of a Book
 Abbreviations for the Titles of Periodicals in Indian Languages
 Code for Classification of Metal Working Machinery
 Layout of Articles in Periodicals
 Revision of:
 IS: 18-1949 Abbreviations for the Titles of Periodicals
 IS: 382-1952 Practice for Alphabetical Arrangement

Revision of:
 IS: 790-1956 Specification for General Structure of Preliminary Pages of a Book (*Tentative*)
 IS: 791-1956 Specification for Half-Title-Leaf of a Book (*Tentative*)
 IS: 794-1956 Practice for Table of Contents (*Tentative*)

9.2 ISI Directorate Standards Sectional Committee, EC 5 — The guide for organization of ISI conventions was made ready for the use of

the organizers of ISI Conventions and Conferences. The guide may also be helpful to organizers of other conferences, etc, in India with suitable modifications.

10. METRIC CELL

10.1 The Metric Cell set up in 1959 continued to make progress in organizing the work of revision of non-metricized Indian Standards in terms of metric units and in assisting industries in the changeover to the metric system. In order to give guidance for resolving technical problems involved in writing new standards or revising existing standards in the metric system, an Indian Standard Guide for Specifying Metric Values in Standards was formulated. This Standard is intended to provide guidance not only to ISI technical committees but also to other agencies and departments involved in similar work.

10.2 With a view to converting all non-metricized standards to metric system by December 1965, a programme of revision of standards has been undertaken. The number of non-metric standards, which was 582 or 44 percent of those published in Jan 1960, was reduced to 538 or 34 percent of published standards on 1 March 1961.

10.3 All draft standards sent out for wide circulation were scrutinized with the object of ensuring that they were based on the metric system and suitable recommendations were made in many cases. The Metric Cell also assisted other Divisions by preparing metricized versions of standards due for revision for further processing by the respective Divisions.

10.4 Many important steps were taken during the year by Government and industries for changing over to the metric system. Metric weights became compulsory in certain notified areas and industries on 1 Oct 1960 and is expected to become compulsory in all areas by 1 April 1962. Commercial departments of the Government of India, such as Railways, Posts and Telegraphs, the Central Excise, Customs, Port and Shipping, switched over to the metric system during the year. Some of the organized sectors of industry also started conducting their transactions in this system. In all these developments, close contacts with Government and other agencies were kept and basic standards required by the industries for the changeover were given prior and detailed attention.

11. CERTIFICATION MARKS DIVISION

11.1 Progress of the Scheme — In the year under report — which was the sixth year of operation of ISI Certification Marks Scheme — greater progress was recorded as will be evidenced by the fact that 105 new licences were issued, bringing the total number of licences to 289. The number of new applications received during the year rose to 192, as compared to 115 applications received in the year 1959-60, indicating an appreciable increase

in the awareness of the industry to the advantages of the ISI Certification Marks Scheme. The total number of applications aggregated to 609.

Among the important commodities covered by the Scheme during the year were common consumer items, like biscuits, corn flakes, infant milk foods, toilet soap, inks, *maida*, etc.

11.2 Recognition by State Governments — Looking at the advantages of certified goods over the uncertified ones, more recognition was given to the ISI Mark. In addition to the decision of the Governments of Uttar Pradesh, Madras, Orissa and Andaman & Nicobar to give preferential treatment to ISI certified goods reported last year, the following State Governments issued instructions during the year to their departments to give preference to goods bearing ISI Certification Mark in their purchases:

- a) West Bengal,
- b) Punjab,
- c) Maharashtra, and
- d) Himachal Pradesh.

11.3 Union Government Circular for Avoiding Duplicate Inspection — For avoiding duplicate inspection, the following recommendation of the General Council of ISI made at its meeting held on 26 March 1960 was circulated by the Ministry of Commerce & Industry to all Union Ministries, State Governments, etc, for favourable consideration:

'Government of India having decided to make purchases on the basis of Indian Standards, wherever such standards are available, it will be of advantage if all State Governments, semi-Government bodies, and industrial and commercial undertakings in the private and public sectors adopt a similar policy. It is, therefore, recommended that the Government of India may be moved to secure to the maximum extent possible that, whenever goods bearing ISI Certification Mark are available, all purchasing and consuming organizations and departments in the public and private sectors preferably accept such goods without duplicate inspection of their own, considering that the certification mark is allowed to be applied only after proper inspection and ensuring continuous check of quality during the process of publication.'

11.4 Competent Authorities — In exercise of the powers conferred by Sub-section (1) of Section 10 of the Indian Standards Institution (Certification Marks) Act, 1952 and also Rule 13 of the Indian Standards Institution (Certification Marks) Rules, 1955, the Directors of Industries, West Bengal and Maharashtra were appointed as competent authorities for the articles mentioned against each and manufactured within their respective States:

- | | |
|----------------------------|------------------------|
| a) Director of Industries, | i) Locks |
| WEST BENGAL | ii) Cutlery |
| | iii) Sports goods |
| | iv) Leather (footwear) |

b) Director of Industries,
MAHARASHTRA

- v) Silk woven fabrics
- vi) Printed textiles
- vii) Inks
- viii) Builder's hardware
 - i) Zinc oxide oil paste for paints
 - ii) Red oxide oil paste for paints
 - iii) Oil bound distemper (all colours)
 - iv) Boiled linseed oil for paints
 - v) Ready mixed paint, brushing, white lead for priming and general purposes
 - vi) Ready mixed paint, brushing, undercoating, exterior
 - vii) Ready mixed paint, brushing, zinc-chrome, priming
 - viii) Ready mixed paint, brushing, red lead, non-setting, priming
 - ix) Ready mixed paint, brushing, finishing, oil gloss
 - x) Ready mixed paint, brushing, finishing, exterior, oil gloss, for general purposes
 - xi) Aluminium paint, brushing for general purposes

11.5 Certification Marks Scheme in Steel Plants — An important step forward in the progress of the Certification Marks Scheme during the year was the decision of the Government of India to introduce the Scheme in all the six major steel producing plants located at Jamshedpur, Burnpur, Durgapur, Rourkela, Bhilai and Bhadravati. Accordingly the Scheme would replace the practice hitherto observed of marking the steel as 'tested' or 'untested', and the steel carrying the ISI Certification Mark would, after the introduction of the Scheme, be deemed equivalent to tested steel.

A meeting of all major interests concerned in the manufacture, distribution and control of steel, both in the public and private sectors, was held in the month of March 1961 when details of the Scheme for steel were finalized.

The ISI Certification Marks Scheme for Steel will be operated through the agency of the Directorate of Inspection, Metallurgy (Directorate General of Supplies & Disposals), who will be appointed as the Competent Authority under the ISI Certification Marks Act for the purpose, under the overall supervision of the Institution.

11.6 Enquiries for Certification Marks — In all, 280 enquiries were received about ISI Certification Marks, many of which resulted in the issue

of licences. The fields of activity of the various firms making enquiries were as follows:

a) Agricultural & Food Products	35
b) Building	38
c) Chemicals	84
d) Electrotechnical	65
e) Engineering	34
f) Structural & Metals	11
g) Textiles	13
Total	280

11.7 Applications for Grant of Licences — One hundred and ninety two new applications were received for grant of licences to use the ISI Mark, thus raising to 609 the total number of applications received since the inception of the Scheme. The final disposal of these applications was as follows:

Licences granted	289
Applications under consideration	189
Action deferred at the request of the applicants	36
Applications withdrawn	95
Total	609

Of the 189 applications under consideration, preliminary inspection of most of them was carried out and further action was initiated. The 36 deferred applications mainly related to the applicants who wished to have more time for bringing up their production techniques and testing facilities in line with ISI requirements. The reasons for withdrawal of the remaining 95 applications included lack of testing facilities, difficulty in procurement of raw materials, non-acceptance of the rates of marking fee, frequency of tests, etc.

11.8 New Licences — One hundred and five new licences for the use of ISI Certification Mark were granted during the year. The names of licences, the products covered by these licences and the rates of marking fee are given in Appendix C (see p. 128). The total value of goods bearing ISI Certification Mark for the year 1960-61 is estimated at Rs 40 crores.

11.9 Standard Mark — Standard Marks in respect of articles covered by 31 additional Indian Standards, listed in Appendix D (see p. 143), were specified and published in the Gazette of India, Part II, Section III, Sub-section (ii). Appendix D also includes Standard Marks in respect of two Indian Standards which were revised during 1960-61, bringing the total number of Indian Standards for which Standard Marks were gazetted during the year to 36.

12. IMPLEMENTATION DIVISION

12.1 General — This Division started functioning from September 1960 with the object of getting greater recognition for Indian Standards in the country's trade and industry by way of their adoption by Government Departments for purchases and industry for manufacture. The number of Indian Standards adopted by the different departments of the Government of India during the period under review is given below:

NAME OF DEPARTMENT	NO. OF INDIAN STANDARDS ADOPTED		
	Up to 31 March 1960	1 April 1960 to 31 March 1961	Total
a) Directorate General of Supplies & Disposals	1 077	216	1 293
b) Research, Designs and Standards Organization, Ministry of Railways	524	24	548
c) Controller General of Defence Production, Ministry of Defence	585	91	676
d) Indian Posts & Telegraphs Department	12	142	154

The total adoption numbered 1 389 as against 1 173 at the end of last year, registering an increase of 216 in the year under report.

12.2 Indian Standards in Building Industry, Adoption of — About 200 Indian Standards concerning building industry have been published by the Institution. The Chief Engineers of Public Works Departments, Secretaries of Housing Boards and Registrars of Co-operative Societies of all the States were requested to adopt these Indian Standards and give preference to ISI certified goods in their purchases. Government of Madras responded favourably and issued instructions to all the concerned subordinate offices accordingly. Other State Governments are expected to take similar action in the near future.

12.2.1 Fire Fighting Equipment — ISI has issued 31 Indian Standards on fire fighting equipment, and standards on certain other items in this series are at various stages of formulation. The Ministry of Home Affairs, Government of India, has recommended to all State Governments to adopt these standards as the basis for their purchases. The State Governments of Andaman and Nicobar, Bihar, Delhi, Himachal Pradesh, Madras, Maharashtra, Manipur, Mysore, Orissa, Tripura and Uttar Pradesh have responded and issued directives to all concerned departments within their States to purchase fire fighting equipment in accordance with Indian Standards. Other State Governments are also considering the question of implementa-

tion of these standards and it is expected that similar action will be taken by them in the near future.

12.2.2 Code of Building Bye-laws — The Central Council of Local Self-Governments at its meeting held at Hyderabad during 1959 recommended that State Governments should adopt IS : 1256-1958 Code of Building Bye-laws with necessary modifications to suit local requirements. The Governments of Andaman and Nicobar, Bihar, Himachal Pradesh, Mysore, Orissa, Rajasthan, Uttar Pradesh and West Bengal have brought this to the notice of municipal committees, municipal boards and other local bodies in their States and recommended to them to adopt the Code for their use.

12.3 Indian Standards in Electrical Industry, Adoption of — The Central Water and Power Commission, Government of India, recommended to all State Electricity Boards and other electrical undertakings in the country to base their purchases of electrical equipment on Indian Standard Specifications, wherever available, in the interest of economy of manufacture as well as reducing the delivery time of equipment manufactured indigenously.

12.3.1 Electrical Wirings and Fittings in Buildings — Rule 29 of the Indian Electricity Rules 1956 refers to construction, installation and maintenance of electric supply systems in the country so as to prevent danger. The Electrical Inspectors to Governments of Uttar Pradesh, West Bengal, Kerala and Mysore have directed all the licenced electrical contractors and electric supply undertakings in their respective provinces to ensure that Indian Standard Code for Electrical Wiring and Fittings in Buildings (IS : 732-1958) is followed so as to comply with the various safety requirements contained in the Rule.

12.3.2 Outdoor Type Three-Phase Distribution Transformers Up to and Including 100 kVA 11 kV — The Tariff Commission's enquiry for continuance of protection to power and distribution transformers industry held on 12 May 1960 at Bombay referred to adoption of IS : 1180-1958 Specification for Outdoor Type Three-Phase Distribution Transformers Up to and Including 100 kVA 11 kV by the State Governments and electrical undertakings to cover their requirements of transformers. The State Electricity Boards/Undertakings of Andhra Pradesh, Delhi, Himachal Pradesh, Madras and Rajasthan have assured the Institution that all their purchases of transformers up to 100 kVA will be covered by IS : 1180-1958. This standard has also been adopted by DGS & D to form the basis of their purchases.

12.4 Pictorial Markings of Handling Instructions for Dangerous and Non-Dangerous Goods — The Ministry of Commerce and Industry has recommended to the Ministries of Railways; Finance; Transport and Communications; Labour and Employment; Defence; Steel, Mines and Fuel; Works, Housing & Supply; and to the industries in the public sector formally to adopt the symbols recommended in IS : 1260-1958 Code of Symbols for Labelling of Dangerous Goods and IS : 1286-1958 Pictorial Markings for Handling Instructions for Non-Dangerous Goods; and also instruct the authorities under their control to follow the handling instructions indicated by these symbols.

12.5 State Conferences — During the period under review, State Conferences on Implementation of Indian Standards were held as indicated below:

- a) Himachal Pradesh (Simla) 10 July 1960
- b) Bihar (Patna) 16 January 1961

The Himachal Pradesh Conference was inaugurated by Raja Bajrang Bahadur, Lt-Governor. In case of Bihar, owing to the illness of late Chief Minister, Dr. Sri Krishna Sinha, Shri Bhola Paswan Shastri, Minister for Excise, Forest & Welfare, inaugurated the Conference. The following recommendations were passed by both the Conferences:

1. Recognizing that sound development of industry and trade and lasting benefits to overall economy of the country could be ensured only through a widespread and co-ordinated implementation of Indian Standards issued by the National Standards Organization of the country, this Conference recommends that:

All Indian Standards including specifications, codes of design and practice, model byelaws, etc, should be formally adopted, as soon as they are published by the Indian Standards Institution, by all departments of the State Governments and Municipal Committees and other local self-government bodies, for the purpose of stores purchases and for guiding design and construction work in the public sector. Such official adoption by the State may be indicated by publication of notification in the official gazette from time to time and by giving direct reference to Indian Standards in legislation and statutory orders wherever it may be necessary to prescribe requirements according to standards.

It is also important that industrial undertakings in the public and private sectors adopt Indian Standards to guide their production programme as well as procurement and sales operations.

2. Recognizing the value and benefits of standard certification marking and with a view to providing adequate encouragement to the endeavours of ISI in propagating widespread use of certification in industry and commerce, the State Government may give a lead by according due recognition to the ISI Standard Mark by preferring to purchase only such goods as carry this mark and wherever such goods are not available by demanding goods that could be similarly certified. The Conference recognizes that certified goods, being as they are, produced under an organized inspection system, do not require the same degree of inspection and testing prior to purchase. Furthermore, the State may direct industrial undertakings under its control and request those in the private sector to cover their products under the ISI Mark.

3. The Conference recognizes the need for extending the scope of standardization in the country and making it more broad-based than what it is. The Indian Standards Institution, therefore, should be supported by every municipal committee and other local self-government

body in the same manner as it is being supported by the States and the private industry, by becoming sustaining members of ISI and by active participation in its deliberations for the establishment of standards, which reflect the results of experience gained during the course of application of materials and use of equipment in practice.'

An important development at the Bihar State Conference was the setting up of a cell in the Industries Department for stimulating standardization movement in Bihar as well as for follow-up action accruing from the recommendations of the Conference.

The following orders have been issued by the State Governments for adoption of Indian Standards and giving preference to goods bearing ISI Certification Mark in their purchases, following the recommendations of the State Conferences held during 1959-60:

- a) The Director of Industries, Himachal Pradesh, has instructed all Heads of Departments in the State to stipulate Indian Standard Specifications while making purchases or inviting tenders and give preference to goods bearing ISI Certification Mark over those which do not carry this mark.
- b) The Secretary, Industries Department, West Bengal has advised all Secretarial Departments in the State to adopt Indian Standards and give preference to goods bearing ISI Certification Mark in their purchases.
- c) The Secretary, Industries Department, Punjab has recommended to all Heads of Departments and others concerned with purchases in the State to give preference to goods bearing ISI Certification Mark in their purchases.

12.6 Other Conferences — The Conference of the Representatives of Automobile Industry and Ancillary Industry, sponsored by the Western India Automobile Association, passed the following recommendation for greater use of Indian Standards:

'The industry should adopt the standards and specifications formulated by the Indian Standards Institution'.

12.7 Popularization of Indian Standards in Foreign Countries — The Ministry of Commerce and Industry, Government of India, has requested all Indian diplomatic and trade missions abroad to convey to trade bodies, particularly importing organizations, in their respective countries about the existence of ISI Certification Marks Scheme on which they could place reliance for quality conformance of goods to Indian Standards. Indian missions in Hong Kong, West Germany, Iran, Phillipines, Switzerland, Vietnam, Burma, Iraq, East Pakistan, Japan and New Zealand brought this to the notice of trade organizations, chambers of commerce and others concerned with import of goods in those countries. This has led to some interest being shown by importers abroad about ISI Certification Marks Scheme.

The Directorate of Export Promotion, Ministry of Commerce and Industry has invited views of various Export Promotion Councils for popularizing Indian Standards in foreign countries and encouraging export of goods bearing ISI Certification Mark on the following lines:

- a) Items with which the Council is concerned;
- b) Items out of (a) above for which Indian Standards exist;
- c) Measures, if any, that are being taken by the Council for getting Indian Standards prescribed for other items;
- d) Measures that are being taken or proposed to be taken by the Council for promotion of only those goods which bear ISI Certification Mark; and
- e) Measures that are being taken by the Council to indicate in their advertisement programmes the facilities that are available under the ISI Certification Marks Scheme. Views of the Export Promotion Councils are awaited.

12.8 Review of Tender Enquiries — Tender enquiries published in the Supplement to Indian Trade Journal issued by the Ministry of Commerce & Industry were scrutinized and organizations sponsoring these enquiries were referred to where Indian Standards were not used by them to cover their requirements. The Central Stores Purchase Department, Andhra Pradesh; the Indian Telephone Industries, Bangalore; the Director of Industries, Stores Purchase Section, Uttar Pradesh, Kanpur; Damodar Valley Corporation, Calcutta and Hindustan Aircrafts Ltd., Bangalore, have responded and agreed to making specific mention of Indian Standards in their future tender enquiries.

12.9 Manufacturers Adopting Indian Standards — To enable the Institution to provide information about manufacturers operating according to Indian Standards, 18 enquiries were made up to 31 March 1961 covering the following industries:

- a) Metal containers,
- b) Fertilizers,
- c) Dairy products,
- d) Soaps,
- e) Cutlery,
- f) Ropes,
- g) Solders,
- h) Tools,
- j) Dairy testing apparatus,
- k) Glassware,
- m) Inorganic acids,
- n) Tiles,

- p) Electrodes,
- q) Electrical instruments and meters,
- r) Electric motor,
- s) Organic acids,
- t) Electric fans, and
- u) Leather and leather products.

13. STATISTICAL SECTION

13.1 The Statistical Section was actively engaged in the formulation of a number of Indian Standards on methods for sampling of different types of materials, in addition to evolving sampling plans for incorporating in material specifications and suggesting sampling schemes for routine inspection (during manufacture) of the products covered by the ISI Certification Marks Scheme. It also undertook some investigations (or statistical analysis of the data made available) for evaluating the specification requirements, the efficiency of test methods or for evolving suitable sampling schemes to be included in relevant Indian Standards.

13.2 A brief account of the work done by the Section is given below:

Methods of Sampling — The following four draft standards were finalized for printing:

IS : 1289-1961 Methods for Sampling of Mineral Gypsum

IS : 1405-1960 Methods of Sampling Iron Ore

IS : 1449-1961 Methods of Sampling Manganese Ore

IS : 1811-1961 Methods of Sampling Foundry Sands

Handbook Published

ISI Handbook of Quantities, Conversion Factors, Formulae and tables

Work in Hand

Revision of IS: 436-1953 Sampling of Coal, Part I	Methods of Sampling: Non-Ferrous Metals
Methods of Sampling: Quartzite	Footwear
Bauxite	Of Thermosetting Moulding Materials
Dolomite	
Ferro-Alloys, Part II	Manual on Sampling of Textiles
	Sampling Inspection Tables

Sampling Plans in Material Specifications — During the period under review, the Section scrutinized 164 draft Indian Standards sent out for wide circulation, with the object of introducing statistical quality control concepts in them, wherever possible. In particular, sound sampling plans (useful in determining the conformance of a lot of material to the requirements of the specification) which form an essential part of material specifications were recommended in 89 cases pertaining to chemicals, agricultural & food products, electrical and allied goods, metal products, refractories, etc. These recommendations were accepted by the concerned Sectional

Committees, in most of the cases, for inclusion in the appropriate Indian Standards. In this connection mention may be made of Indian Standards on Smoking Mixtures (IS : 1578-1960), Oleic Acid, Technical (IS : 1676-1960), Glass Liquor Bottles (IS : 1662-1960), Prestressed Concrete Poles for Overhead Power Traction and Telecommunication (IS : 1673-1960), Self Closing Taps (IS : 1711-1960), Rubber Containers for Motor Vehicle Batteries (IS : 1146-1960), Tin Bronze Ingots and Castings (*Revised*) (IS : 306-1960), Methods of Sampling and Physical Tests for Refractory Materials (*Revised*) (IS : 485-1961).

Certification Marking — The Section prepared 35 schemes of routine inspection for the issue of licences under the ISI Certification Marks Scheme. Also, the routine inspection data collected from the licences in accordance with the recommended schemes was statistically analyzed to find out whether the certified goods actually conformed to the relevant Indian Standards or not.

Investigations, Collection and Analysis of Data — A nation-wide investigation was conducted for determining the permissible leakage current for radio components, to be included in the appropriate IEC Recommendation as meeting the requirements of tropical countries. Operational data pertaining to the manufacture and inspection of metal products like castings, bars and sections, forgings, etc., was collected by issuing suitable questionnaires. The conclusion obtained by the statistical analysis of the data so collected would be made use of, in evolving specification requirements or in evolving suitable sampling schemes, for inclusion in corresponding standards. The data on testing of bleach index and bleachability of lac, obtained from India, the United Kingdom and the United States of America by following the Indian method, was statistically analyzed to estimate the repeatability and reproducibility of the test method. The report of this analysis has been considered by ISO/TC 50 Lac at its meeting held in New Delhi in February 1961.

14. RESEARCH AND INVESTIGATIONS

14.1 As in the past, the Institution continued to pay greater attention to the research and investigation of problem relating to formulation of Indian Standards. In this connection, close collaboration and active assistance were received from different national, State and private laboratories, testing organizations and research institutions. The Institution hereby records its deep appreciation for the valuable assistance received from these organizations.

14.2 Problems of the Agricultural & Food Products Division related to the research and testing of sugar, food colours, confectionary, cereal products, yeast, dairy products, dairy equipment, spices and condiments, and insecticides.

14.3 Research problems of the Building Division concerned the testing of wall tiles, investigations on *surkhi*-lime mixture as masonry cement,

testing of building limes available in different regions to ascertain their chemical composition testing of natural building stones, investigations on bricks, testing of jointed wood poles, testing of the efficacy of wolman's salt as wood preservative, testing of hook ladders for fire fighting purposes, investigations on gypsum and gypsum building products, quantity of water to be used in the compressive strength test for concrete water cement ratio and strength of mortar and concrete, variation in bulk density of aggregates measured with different sizes of containers, strength of concrete at different temperatures and ages, survey of noise levels and noise comfort conditions, survey of daylight in certain rooms at National Physical Laboratory, investigation on bacterial growth in spun yarn used for pipeline joint for water supply purposes, investigation on the effect of magnesia content in building lime, and testing and calibration of sieve shaker.

14.4 The more important investigations of the Chemical Division carried out during the year under report included, apart from the projects in respect of various essential oils and of cotton seed oil already covered under the Divisional Reports, collection of test data in connection with the formulation or revision of Indian Standards for papers and boards, various types of leather, tannin extract of myrabolan, plastic buttons, bristles for paint brushes, electroplating salts and light magnesium carbonate for rubber industry. Investigations were also carried out on the perfumery grade alcohol imported from the United Kingdom and France, internal combustion engine oils and loco greases. Comparative studies were made on the fluidity temperatures and pour points of fuel oils, and on the gravimetric and EDTA methods for the determination of calcium and magnesium in common salt. Experiments were conducted to study the working of humidity cabinet used for corrosion tests for evaluating the anticorrosives.

14.5 Work on formulation of standards in Structural & Metals Division called for research and investigation to be conducted on a number of problems. Out of the new items approved for research, particular mention may be made of determination of the lowest ambient temperature below which welding should not be commenced.

In order to tackle the problem of corrosion of metals, the Council of Scientific & Industrial Research has appointed eleven research subcommittees. Representation has been given to ISI on six of the subcommittees of interest to it.

The problems taken up for investigation under the Steel Economy Programme continued to make progress. Significant progress was achieved in respect of the investigations being conducted on the use of light gauge steel sections in structures. On the basis of these investigations, an article entitled 'Cold Formed Light Gauge Steel Sections of Short Column Members for Optimum Structural Efficiency' was published in ISI Bulletin. A number of new problems was taken up for experimental investigations including hypophosphite method for determination of arsenic in copper and copper alloys and rapid volumetric method for determination of silicon in ferro-silicon.

14.6 The research and testing work in the Textile Division included testing of samples of shoddy woollen melton cloth, shoddy woollen blankets, Bleeding Madras, cotton embroidery thread, silk sari cloth, handloom silk shirting, canvas, cotton type for electrical purposes, spindle tapes for jute textile industry and jute bags for packing cement for constructional particulars. Some staining tests for detection and estimation of damage in cotton (fibres) due to micro-organisms were in progress. Tips used in shuttles for plain calico looms were tested for hardness at the conical surface of the tips, and some investigation was also done to make twin wire healds commercially rust-proof.

PART III INTERNATIONAL ACTIVITIES

(For ISO Publications during the year, see Appendix E on page 146).

1. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, ISO

1.1 ISI co-operates both in technical and administrative work of ISO, an association linking the national standards bodies of the following 44 countries:

Albania	Czechoslovakia	Ireland	Rumania
Argentina	Denmark	Israel	South Africa
Australia	Egypt	Italy	Spain
Austria	Finland	Japan	Sweden
Belgium	France	Mexico	Switzerland
Brazil	Germany	Netherlands	Turkey
Bulgaria	Greece	New Zealand	United Kingdom
Burma	Hungary	Norway	USA
Canada	India	Pakistan	USSR
Chile	Indonesia	Poland	Venezuela
Colombia	Iran	Portugal	Yugoslavia

The technical work of ISO is carried out through 100 technical committees (for list of ISO technical committees, see Handbook of ISI Publications, 1959, p. 87) of which ISI participates in the work of 61. ISI is also a member of the ISO Council, the executive body of the organization.

During the year, 63 ISI Recommendations were prepared, as per list given in Appendix E on p. 146. For complete list of ISO Recommendations issued so far, see p. 89 of Handbook of ISI Publications, 1959.

1.2 ISO Council — The ISO Council has now been enlarged from 11 to 14 elected members. The first meeting of the enlarged Council was held at Geneva from 27 June to 1 July 1960 and was attended by representatives of the following countries:

Austria	Israel	Poland	USA
France	Italy	Rumania	USSR
Germany	Netherlands	Switzerland	
India	Norway	UK	

Indian delegation comprised of Dr. Lal C. Verman, Director, ISI; Shri Jehangir J. Ghandy; and Shri K. N. P. Rao.

1.3 ISO Planning Committee (PLACO) — This Committee, of which Director ISI is Chairman, held its 1960 meeting at Geneva on 27 and 29 June 1960. PLACO adopted 11 recommendations which were all accepted by the Council without modification. The resolutions dealt with matters of planning the technical work of ISO and other matters, such as co-ordination in the field of timber and timber products, title and scope of technical committees dealing with agricultural and food products, gymnastics and sports equipment, refrigeration, cork, starch, etc. One of the resolutions

dealt with the important matter of contractual clauses in ISO Recommendations which had been advocated by ISI. Under the latest decision, ISO Recommendations will not contain contractual clauses which hinder the adoption of ISO Recommendations in various countries because of differing laws and practices concerning contracts in each country.

1.4 ISO/METESCO Co-ordinating Committee on the Mechanical Testing of Metals — The Committee met in London on 7 and 8 November 1960 and made recommendations to the appropriate Technical Committees in respect of the following methods of test:

- a) Bend tests on plate, sheet, wire and tubes;
- b) Calibration of (i) standardized blocks and machines for Brinell, Rockwell and Vickers hardness tests; (ii) elastic proving devices, and (iii) pendulum impact testing machines;
- c) Load calibration of tensile testing machines;
- d) Expanding, flanging and flattening tests on tubes;
- e) Fatigue testing;
- f) Brinell, Rockwell and Vickers hardness tests;
- g) High temperature tests;
- h) Tensile tests; and
- j) Torsion and wrapping tests on wire.

The Committee is also giving consideration to the possibility of recommending certain symbols to be used for mechanical values which have not been covered by ISO/TC 12 Quantities, Units, Symbols, Conversion Factors and Conversion Tables.

Tables intended to cover the requirements of all metals are also being prepared for hardness values for Brinell and Vickers hardness scales.

1.5 ISO/ECAFE Liaison — Dr. Lal C. Verman, Director, ISI, continued to act as ISO/ECAFE Liaison Officer during the period under review.

1.6 ISO Committee Meetings — During the year under review, meetings of 19 ISO technical committees, 21 subcommittees and 10 working groups of interest to India were held during 1960-61. A brief report on their work and on other important developments is given below:

ISO/TC 5 Pipes and Fittings (Sectt: Switzerland) — India's approval to the following draft ISO Recommendations was sent to the ISO General Secretariat:

- a) Steel Tubes — Thicknesses
- b) Steel Tubes Butt Welding Bends (90° and 180°)
- c) Plastic Socket Fittings for Plastic Pipes Under Pressure — First Part: Metric Series
- d) Plastic Socket Fittings for Plastic Domestic and Industrial Waste Pipes — First Part: Metric Series

Draft ISO Recommendation for Pipe Threads where Pressure-Tight Joints are Not Made on the Threads was approved subject to certain editorial modifications. Draft ISO Recommendation for Dimensions of Copper Tubes of Circular Section (in Millimetres) was received for comments.

ISO/TC 6 Paper (Sectt: France) — The second meeting of the Working Group under the Subcommittee on Dimensions, held in Paris in July 1960, discussed the untrimmed sizes of paper and the methods of designating them. A meeting of the Subcommittee on Quality Specifications for Paper was held during 15 to 18 November 1960 at Lisbon, Portugal. Draft ISO Recommendations for Method of Expression of Dimensions of Processed Paper and Paper Products, Sizes of Correspondence Envelopes and Pockets, Method of Sampling Paper for Testing and Method for Conditioning of Paper and Board Test Samples have been submitted to ISO Council for acceptance. Draft ISO Recommendation for Method for Moisture Determination of Paper and Board has been submitted to member bodies for approval.

ISO/TC 8 Shipbuilding Details (Sectt: Netherlands) — The fourth meeting of the Technical Committee took place in Dusseldorf on 3, 4 and 6 October 1960.

As a result of the amalgamation of ISO Technical Committees No. 8 and 9, the Committee decided to define its scope of work as follows:

'The scope of ISO/TC 8 encompasses all shipbuilding details utilized in sea and inland navigation excluding the electrical equipment'.

The USSR proposal for the revision of ISO/R 107-1959 Light Metal Rivets for Shipbuilding — Rivet Heads, was accepted. Draft proposals for steel wire ropes, tests; steel wire ropes, dimensions; and light metal sections were approved subject to certain amendments. Other items discussed at the meeting related to tests on the toughened and ordinary glass for side scuttles, dimensional study of side scuttles, ship screw propellers, life boats, anchor chains, and auxiliary deck machinery.

The Committee also decided to set up a working group, namely, Inland Navigation, the Secretariat of which would be held by Germany.

ISO/TC 12 Quantities, Units, Symbols, Conversion Factors and Conversion Tables (Sectt: Denmark) — The fifth plenary meeting of ISO/TC 12 was held at Copenhagen from 28 June to 2 July 1960. The Committee considered the tables of quantities and units for the following items:

- a) Electricity and Magnetism,
- b) Sound,
- c) Chemistry,
- d) Atomic and Nuclear Physics, and
- e) Nuclear Reaction and Ionizing Radiation.

At India's suggestion, the Committee also discussed the proposal for a guide for inter-conversion of values from one system of units to another

based on IS:787-1956, and agreed to circulate an enquiry to all member-bodies for eliciting their views about the subject.

The following draft ISO Recommendations, circulated during the year, were approved by India with suggestions for editorial modifications in certain cases:

- a) Quantities and Units of Mechanics,
- b) Quantities and Units of Heat,
- c) Mathematical Signs and Symbols for Use in the Physical Sciences and Technology,
- d) Some Principles for Printing Symbols and Numbers, and
- e) Fundamental Quantities and Units of the MKSA System and Quantities and Units of Space and Time (Draft Revision of ISO R 31/Part I).

ISO/TC 17 Steel (Sectt: UK) — Six draft ISO proposals received from the Secretariat were circulated to the relevant technical committees of ISI. The following two proposals were made by India for consideration in the April 1961 meeting of this Technical Committee and a working document was submitted by India in respect of first item:

- a) Redesign of Hot Rolled Structural Steel Sections, and
- b) Rationalization of Carbon and Alloy Steels.

ISO/TC 18 Zinc and Zinc Alloys (Sectt: Belgium) — The following two draft ISO Recommendations on the following two items were received for comments:

- a) Zinc Ingots, and
- b) Zinc Alloys Ingots.

The draft proposals given below were received for comments:

- a) Polarographic Determination of Lead and Cadmium, and
- b) Photometric Determination of Iron.

ISO/TC 25 Cast Iron (Sectt: UK) — The first meeting of the Working Group ISO/TC 25/GT 1 Malleable Cast Iron, was held at Dusseldorf (Germany) on 27 and 28 June 1960. The following subjects were discussed at this meeting:

- a) Whiteheart Malleable Iron,
- b) Blackheart Malleable Iron, and
- c) Pearlitic Malleable Iron.

ISO/TC 26 Copper and Copper Alloys (Sectt: Germany) — The Secretariat of this Committee was transferred from the USA member-body to the German member-body. Fourteen draft ISO Proposals prepared by the Technical Committee were received by India for approval and comments, if any. India's approval was sent in respect of all the fourteen draft proposals with the suggestion of certain editorial modifications on eight draft proposals.

A new Subcommittee ISO/TC 26/SC 1 Chemical Analysis of Copper and Copper Alloys was constituted during the period under review. India has offered to participate in its work as a 'P' member.

ISO/TC 27 Solid Mineral Fuels (Sectt: UK) — The meetings of the Subcommittees for Coal Preparation and for Brown Coals and Lignites, and of the Working Group on Sampling and Testing of Coke were held during the period under review. Revised draft ISO Recommendations dealing with moisture in analysis sample by volumetric and gravimetric methods, Liebig method for carbon and hydrogen, determination of sulphur by high-temperature method and Eschka method, Kjeldahl and semi-micro Kjeldahl methods for nitrogen, Audibert-Arnu method for swelling and caking, and determination of chlorine by the high-temperature and Strambi method have been prepared for submission to ISO Council for acceptance.

ISO/TC 30 Measurement of Fluid Flow (Sectt: France) — The fifth plenary meeting of the Technical Committee was held from 9 to 13 May 1960 in Paris. The Committee adopted the draft ISO Recommendation for Measurement of Fluid Flow by means of Orifice Plates and Nozzles.

ISO/TC 30/SC 1 Measurement of Liquid Flow in Open Channels (Sectt: India) — The third meeting of the Subcommittee was held in New Delhi from 22 to 24 February 1961 when the sixth draft proposal for an ISO Recommendation on Measurement of Liquid Flow in Open Channels by Velocity Area Methods and fifth draft proposal for an ISO Recommendation on Measurement of Liquid Flow in Open Channels by Dilution Methods, Part I: Constant Rate Injection Method were finalized for submission to Technical Committee 30 for further processing as ISO Recommendations. Working Groups 1 and 4 also met in New Delhi preceding the Subcommittee meeting.

ISO/TC 33 Refractories (Sectt: UK) — India's approval was sent in respect of draft ISO proposals on :

- a) Glossary of terms Relating to Refractory Industry, and
- b) List of Equivalent terms for the Refractory Industry used in various countries.

ISO/TC 34 Agricultural Food Products (Sectt: Hungary) — The following meetings of ISO/TC 34 and its Subcommittees were held during the year under review:

<i>Committee</i>	<i>Meeting</i>	<i>Date</i>
ISO/TC 34 Agricultural Food Products	Second	29 Oct 1960
ISO/TC 34/SC 2 Oil Seeds (and Vegetable Oils)	First	24-25 Oct 1960
ISO/TC 34/SC 3 Fruits and Vegetables	Second	26-28 Oct 1960
ISO/TC 34/SC 4 Cereals and Pulses	First	26-28 Oct 1960
ISO/TC 34/SC 6 Meat and Meat Products	First	13-17 Mar 1961
ISO/TC 34/SC 7 Spices and Condiments	First	20-23 Feb 1961

The meetings of the Technical Committee and the Subcommittees 2, 3, and 4 were held at Budapest (Hungary). The meeting of SC 6 was held at Kulmbach (West Germany) and that of SC 7 in New Delhi.

Technical Committee 34 discussed the subjects of poultry and eggs which are under the scope of the Committee but are not covered by any of the existing Subcommittees. It was suggested that SC 6 Meat and Meat Products might include these subjects in its scope. The delegation from Germany, which holds the Secretariat for SC 6, agreed to take up the subject of poultry only. The Committee accepted the proposal till the question of forming a new subcommittee for poultry and eggs together was raised again. The Committee also considered the subject of stimulants as a primary urgency and suggested that SC 7 might include this subject in its scope and change the title, if necessary.

Besides approving the resolutions passed by the three Subcommittees SC 2, SC 3 and SC 4, the Committee decided that the Secretariat should invite the countries which are mass producers of different agricultural food products and yet do not take part in the activities of the Committee, to become 'P' Members.

Brief reports of the five subcommittees listed above are given in the following paragraphs:

ISO/TC 34/SC 2 Oil Seed and Vegetable Oils (Sectt: Rumania) — The sampling and testing methods of oilseeds were considered. It was recommended that the title of the Subcommittee be changed to 'Oleaginous Seeds and Fruits'.

ISO/TC 34/SC 3 Fruits and Vegetables (Sectt: Poland) — All the eight Working Groups, set up at the first meeting of the Subcommittee, met jointly on 26 and 28 October 1960 when they discussed the subjects of storage and transport; packaging; and terminology for fresh fruits and vegetables. Draft proposals for sampling and methods of test for fresh fruits and vegetables, and for derived products of fruits were also considered. The Subcommittee at its meeting on 28 October 1960 approved the resolutions of the Working Groups, which mainly related to the preparation of the revised draft proposals on the above subjects and to the inorganic impurities.

ISO/TC 34/SC 4 Cereals and Pulses (Sectt: Hungary) — The scope of the Subcommittee was enlarged to read as 'Cereals and their derived products with the exception of starch and its derivatives and by-products which are included in the scope of ISO/TC 93, and pulses and their derived products dealing with only dry pulses which are physiologically fully matured'.

The methods for the determination of some characteristics of cereals and pulses, such as moisture, ash, test, weight (mass), were discussed.

ISO/TC 34/SC 6 Meat and Meat Products (Sectt: Germany) — (The report of meeting has not yet been received from the Secretariat of the Subcommittee.)

ISO/TC 34/SC 7 Spices and Condiments (Sectt: India) — Terminology, methods of sampling and test, and specification for black pepper were some of the important items discussed at the first meeting of the Subcommittee held in ISI from 20 to 23 February 1961. The meeting was presided over by Dr. Y. K. Subrahmanyam of the Ministry of Health, Government of India and a member of the Spices and Condiments Sectional Committee of ISI (AFDC 21). Twenty delegates representing France, Hungary, India, Netherlands and UK were present. The Secretariat of ISO/TC 34 was represented by Mr. A. Miklovicz, the Hungarian delegate.

Since this was the first meeting of the Subcommittee set up in April 1958, it considered its title and scope. The Subcommittee decided to retain its present title in English; but to name it only 'Epices' in the French version. The scope was defined as follows: 'The Subcommittee shall be responsible for drafting recommendations for spices and condiments. The recommendations shall cover terminology, methods of sampling and test, quality specifications, packing, and, if necessary, storage, handling and transport'. The term 'spices and condiments' shall be applied to such natural vegetable products, either in the whole form or in ground form, as are used for imparting flavour, aroma, piquancy to and seasoning of food.

With regard to terminology, the Subcommittee formulated principles on the basis of which a second draft proposal will be prepared.

Draft proposals relating to (a) methods of sampling and test for spices and condiments, and (b) specification for black pepper were discussed at length and keen interest was evinced in them.

The documents modified in the light of the decisions taken by the Subcommittee will now be circulated to the member-bodies for their comments.

Draft proposals in respect of specification for ginger, cardamom and curry powder had also been included in the Agenda for the meeting. Since the time available was short, it was decided that these documents be re-drafted in the light of the comments received and recirculated.

Regarding the future programme of ISO/TC 34/SC 7, it was decided to add cinnamon, nutmeg, pimento, saffron, jamaica pimento, and paprika to the list of condiments already prepared by the Secretariat and to hold the next meeting of the Subcommittee in Paris in 1962.

ISO/TC 35 Raw Materials for Paints, Varnishes and Similar Products (Sectt: Netherlands) — India's approval to the following Draft ISO Recommendations, subject to certain editorial changes, was sent to the ISO General Secretariat:

- a) Linseed Stand Oils and Lithographic Varnishes
- b) Raw Tung Oil [Aleurites Fordii (Type F) or Montana (Type M)] for Paints
- c) Gum Spirit of Turpentine and Wood Turpentine

ISO/TC 38 Textiles (Sectt: UK) — The fourth meeting of the Committee was held at London from 19 to 21 May 1960 under the chairmanship of Mr. A. W. Bayes of UK. The Indian Delegation to the meeting consisted of six delegates with Brig N. N. Chopra as its leader.

The following subcommittees and working groups of ISO/TC 38 also met during the week:

- SC 5 Yarn Testing,
- SC 6 Fibre Tests,
- WG 2 Cloth Strength Testing,
- WG 6 Standard Layout for Methods of Test, and
- SC 6/WG 1 Cotton Fibre Tests.

Some of the important items discussed and decisions arrived at the meeting are given below:

- a) **Universal Count System** — Most of the member-countries of ISO had agreed to adopt the universal count system with *tex* as the primary unit (*tex* = number of grams per kilometre of material) for expressing the fineness or coarseness of textile structures, such as fibre, filament, yarn, cord, rope, etc. ISO Recommendation ISO/R 138 on the subject has since been published.
- b) **Terminology** — It was formally agreed that the secretariats of working groups and subcommittees should be responsible for determining the terms that required to be defined in order to clarify draft test methods under preparation. The technical Committee Secretariat was asked to keep a central register of all such definitions and, at an appropriate stage, these definitions could be examined as the basis of an ISO recommendation on textile terminology.
- c) **Designation of Yarn Structure** — It was agreed that, for designating yarn structure, the description of the single yarn should be given first, followed, when necessary, by descriptions of yarns of sub-sequent plies. A draft proposal on these lines would be prepared and circulated.
- d) **Proprietary Instruments** — It was decided to include in the ISO test methods based on specific or proprietary instruments, a 'disclaimer' clause to indicate that the mention of the instrument was not intended to give preference to it.
- e) **Standard Atmosphere for Testing** — It was agreed to modify the draft ISO Recommendation No. 113 on the subject, calling $27^{\circ} \pm 2^{\circ}\text{C}$ and 65 ± 2 percent PH as optional standard atmosphere; and with a view to clarifying the status of standard atmosphere (with 20°C as temperature), and optional standard atmosphere (with 27°C as temperature), the Secretariat was asked to prepare a draft resolution in consultation with India.
- f) **Cloth Strength Testing** — The main principles of 'strip test' and 'grab test' with the use of constant-rate-of-loading, constant-rate-of-traverse and constant-rate-of-specimen extension machines were settled.

g) **New Subcommittees and Working Groups Set Up** — A new Subcommittee ISO/TC 38/SC 8 — Physical Testing of Fabrics and Fabric Terminology (Sectt: UK) responsible for the working of the following Working Groups was set up:

- i) ISO/TC 38/SC 8/WG 1 — Crease Resistance of Cloth (Sectt: Germany)
- ii) ISO/TC 38/SC 8/WG 2 — Cloth Strength Testing (Sectt: UK)
- iii) ISO/TC 38/SC 8/WG 3 — Fabric and Weave Descriptions (Sectt: France)
- iv) ISO/TC 38/SC 8/WG 4 — Cloth Dimension and Weight (Sectt: UK)

The following two Working Groups were also set up:

- i) ISO/TC 38/WG 7 — Simple Names for Man-Made Fibres (Sectt: France)
- ii) ISO/TC 38/SC 6/WG 2 — Quality of Bast Fibres (Sectt: Belgium)

Three draft ISO Recommendations prepared by ISO/TC 38 were received from the General Secretariat of ISO during the year, and these were circulated to ISI's Committee/Panel concerned.

ISO/TC 38/WG 2 Cloth Strength Testing (Sectt: UK) — The Working Group met on 21 and 24 May 1960 in London. Agreement on the basic features of tensile strength testing by both 'strip' and 'grab' methods was reached. This work has now been transferred to WG 2 under the newly created Subcommittee SC 8.

ISO/TC 38/SC 5 Yarn Testing (Sectt: USA) — The Subcommittee met on 25 and 26 May 1960 in London. The subjects discussed included the method of test for breaking load of yarns — skein method, definitions and terms relating to yarn testing and sampling of yarn.

ISO/TC 38/SC 6 Fibre Tests (Sectt: France) — The Subcommittee met on 24 May 1960 in London. The work relating to methods for determination of ether soluble extract of wool top, and pH values of Aqueous extract of wool was transferred to ISO/TC 38/WG 5.

ISO/TC 38/SC 6/WG 1 Cotton Fibre Tests (Sectt: USA) — This Working Group met on 21 and 23 May 1960 in London. The subjects discussed included the following:

- i) Fibre Sampling
- ii) Method of Test for Cotton Fibre Maturity
- iii) Method of Test for Length and Length Distribution by Array Method
- iv) Definitions Applicable to Cotton Fibre Testing
- v) Draft ISO Recommendation 229 — Methods of Tests for Cotton Fibre

ISO/TC 38/SC 7 Ropes and Cordages (Sectt: France) — The Subcommittee met on 1 December 1960 in London. Proposal for draft ISO Recommendation for Manila and Sisal Ropes was considered in the meeting.

ISO/TC 39 Machine Tools (Sectt: France) — The Technical Committee held its seventh plenary meeting in New York on 29 and 30 September 1960. This meeting was preceded by the meetings of its two Working Groups, namely, ISO/TC 39/WG 2 Testing Conditions and ISO/TC 39/WG 3 Elements of Machines. Shri B. B. Bhirangi, of the Mysore Kirloskar Ltd., represented India in all these meetings.

The progress made towards publication of the following six ISO Recommendations was reported, and it was hoped that these recommendations would be published in the near future:

- a) Machine Tool Test Code
- b) Lathe Tool Posts
- c) Machine Tool Speeds and Feeds
- d) 5 Percent Tapers for Tool Shanks
- e) 7/24 Tapers for Tool Shanks
- f) Lathe Centres

Draft Proposals for T-Slots, and Symbols on Machine Tool Indicator Plates were adopted as draft ISO Recommendations. Other subjects discussed at the meeting related to testing conditions of machine tools, direction of operation of controls, spindle noses for lathes, and mounting of grinding wheels on machines. New subjects included in the programme of work were unit heads and electrical equipment of machine tools. The Committee also decided to appoint two bodies as follows:

- a) Working Group ISO/TC 39/WG 4, for the study of documents published by ISO/TC 39 and by IEC, and
- b) A group of experts for study, in conjunction with IEC, of the new applications of electricity and electronics to machine tools.

ISO/TC 43 Acoustics (Sectt: UK) — The Committee held its fifth meeting at Rapallo (Italy) from 29 March to 2 April 1960. Draft ISO Proposals for the following were approved for circulation to the member bodies for authorization to circulate as Draft ISO Recommendations:

- a) Measurement of Sound Absorption in a Reverberation Room,
- b) Measurement of the Reverberation Time in Concert Halls,
- c) Standard Reference Zero for the Calibration of Pure-Tone Audiometers,
- d) Procedure for Calculating Loudness,
- e) Preferred Frequencies for Acoustical Measurements, and
- f) Methods of Measurement of Noise Emitted by Vehicles.

ISO/TC 44 Welding (Sectt: France) — Meetings of two Subcommittees under this Technical Committee, namely, ISO/TC 44/SC 3 Filler

Materials and Electrodes, and ISO/TC 44/SC 5 Test and Inspection of Welds, were held at Paris and Geneva from 16 to 18 January and 6 to 8 March 1961, respectively. No delegation from India could be sent to participate in these meetings.

Among others, the following subjects were discussed in the fifth meeting of ISO/TC 44/SC 3:

- a) Code of Symbols of Electrodes, and
- b) Symbolization of Various Filler Materials.

The following subjects were discussed at the second meeting of ISO/TC 44/SC 5 and the first item was included in the future programme of work of the Subcommittee:

- a) Recommended Practice for Radiographic Examination of Fusion Welded Joints on Steel Plates, Steel Pipes, and Aluminium and Its Alloys and Magnesium and Its Alloys; and
- b) Rules for the Qualification of Manual Metal Arc Welders for Plates and Pipes.

ISO/TC 46 Documentation — The eighth plenary meeting of the Committee was held in London from 13 to 15 June 1960. Consequent upon the resolutions passed at the meeting, the following draft proposals were circulated:

- a) Index of a Publication (Second draft proposal);
- b) Title Leaves of a Book (Second draft proposal);
- c) Format and Layout of Bibliographical Cards (First draft proposal); and
- d) International Code for the Execution, Supply or Exchange of Microcopies (prepared by SC 1) (First draft proposal).

Items Completed During the Year — Final texts for the following two draft ISO Recommendations were prepared and presented to ISO Council:

- a) Sizes of Photocopies (on Paper) Readable Without Optical Devices; and
- b) Microcopies on Transparent Bases — Sizes of Recommended Bases.

Final texts for three other draft ISO Recommendations, namely, Presentation of Contributions to Periodicals, Abstracts and Synopses, and Transliteration of Arabic, were prepared for presentation to ISO Council.

Other Items of Work — Other items on which considerable work was done by the Committee during the year were transliteration of Greek and Hebrew; conventional abbreviations for titles of periodicals; bibliographical references; index cards; index of a publication; title leaves of a book and layout of books.

ISO/TC 46/SC 1 Documentary Reproduction — The seventh meeting of the Subcommittee was held in Berlin from 25 to 27 April 1960. At the meeting, it was decided to include the study of a complimentary series of terms relating to microcopies and their supports in the programme of work of the Subcommittee. Another important decision concerned the

establishment of an international multilingual glossary of terms relating to microcopies and their bases and apparatus for microcopies.

The Subcommittee was very active throughout the year and circulated as many as 12 documents concerning microcopies, microfilms, microfilm reading apparatus, ISO conventional typographical character for legibility test, etc.

ISO/TC 48 Laboratory Glassware and Related Apparatus (Sectt: UK) — Draft ISO Recommendations on interchangeable conical ground glass joints, principles of construction and adjustments of volumetric glassware, laboratory thermometers and hydrometers, thermal shock test for laboratory glassware, and burettes have been circulated to member-bodies for approval before placing before the ISO Council.

ISO/TC 50 Lac (Sectt: India) — ISO Recommendations for Seedlac, Shellac and Bleached Lac (ISO/R 55, 56 and 57 respectively) were published.

At the invitation of India, the Technical Committee held its fourth meeting at New Delhi during 15 to 18 February 1961 under the chairmanship of Dr. K. L. Moudgill.

Fourteen delegates, three from the United Kingdom, one from France and ten from India, and an observer from the International Electrotechnical Commission participated in the deliberations.

The Committee in its meeting examined the extent to which the published ISO Recommendations on Seedlac, Shellac and Bleached Lac were being implemented in different countries. It noted, with satisfaction, that the ISO methods of test for these lac products had been generally incorporated in the national standards of UK, USA and India and recommended that all the member-countries should use their best endeavours to obtain adoption of these standard methods.

With regard to the ISO grade designations, it was found that the international lac trade was continuing the use of traditional trade names, though an attempt had been made in USA and UK to equate the traditional grade designations to approximate equivalents of ISO grades. It was suggested that the current trade names may be recognized by ISO in place of the grade names accepted in the present ISO Recommendations. The Committee decided to invite member-countries to send specific proposals within six months so that a review of the grade designations might be undertaken.

The Committee examined test methods for (a) non-volatile matter soluble in cold alcohol, and (b) bleach index and bleachability in the light of test data collected; further co-operative work was planned to be carried out in the United States, United Kingdom, Indian and other laboratories. The Committee reviewed the position of a number of other test methods. Proposals were also made in regard to the inclusion of additional test methods for determination of grit, etc, in the future programme of work of the Committee.

ISO/TC 56 Mica (Sectt: India) — No meeting was held during 1960-61. Following items were dealt with during the period:

- a) Grading of phlogopite mica blocks, thins and splittings
- b) Visual classification of muscovite mica
- c) Grading of muscovite mica splittings
- d) Thermal classification of phlogopite mica splittings

Editorial comments were received from the members on the revised draft ISO Recommendation for Phlogopite Mica Blocks, Thins and Splittings and these are being studied by an editorial committee. Also some comments have been received on the revised draft proposal for Visual Classification of Muscovite Mica.

A report from the United States of America on a new American Standard on Grading of Muscovite Mica Splittings, now under formulation, is being awaited for further study by the Committee; so also the results of investigation by member-countries, particularly France, USA and USSR on Thermal Classification of Phlogopite Mica Splittings.

ISO/TC 59 Building Construction (Sectt: France) — Meetings of the following Subcommittees were held at Brussels on the dates given against each:

ISO/TC 59/SC 1 Building Construction/Modular
Co-ordination 10-13 Dec 1960

ISO/TC 59/SC 4 Building Construction/Limits
and Fits 13-15 Dec 1960

ISO/TC 61 Plastics (Sectt: USA) — The tenth meeting of the Committee was held at Prague from 17 to 22 October 1960. India's approval to the following draft ISO Recommendations was sent to the ISO General Secretariat:

- a) Plastics. Determination of the Thermal Stability of Polyvinyl Chloride and Related Copolymers and Their Compounds by the Discoloration Method
- b) Plastics. Determination of the Vicat Softening Point
- c) Plastics. Determination of the Viscosity Number of Polyamide Resins in Dilute Solution
- d) Plastics. Determination of the Acetone Soluble Matter (Resin Content of Material in the Unmoulded State) of Phenolic Moulding Materials

ISO/TC 62 Sheet and Wire Gauge (Designation of Diameters and Thickness) (Sectt: Australia) — India's approval to draft ISO Recommendation for International Metric Series for Basic Thickness of Sheet and Diameters of Wire was conveyed to the ISO General Secretariat subject to certain comments.

ISO/TC 69 Statistical Treatment of Series of Observations (Sectt: Netherlands) — The Working Group on Statistical Terminology Necessary for the Proper Formulation of ISO Standards (ISO/TC 69/WG 1:3) held a meeting on 5 and 6 September 1960 at Paris to consider the

comments on the document No. ISO/TC 69 (S.G. 1:3-1) 72 Statistical Terminology Necessary for the Proper Formulation of ISO Standards, and suggested suitable modifications.

Earlier, India had approved the following two documents with some modifications:

Doc: ISO/TC 69 (S.G. 1:3-1) 72 Statistical Terminology Necessary for the Proper Formulation of ISO Standards, and

Doc: ISO/TC 69 (Secretariat-33) 73E Proposal for Draft ISO Recommendation — List of Recommended Symbols.

ISO/TC 72/SC 2/WG B Winding and Weaving Preparatory Machinery (Sectt: Germany) — The Working Group met on 3 and 4 November 1960 in Cologne and discussed the following:

- a) Warper Beam,
- b) Parallel Tubes for Cheese Dyeing,
- c) Cones for Special Purposes, and
- d) Terminology of Weaving Preparatory Machinery.

It was resolved that on the basis of the agreements reached during the discussions, the Secretariat (Germany) should prepare proposals for Draft ISO Recommendations for the first three items listed above, and circulate them to the members. It was also agreed that the Editing Committee should prepare a revised version of the documents on terminology of weaving preparatory machinery, for circulation with the report of this meeting.

ISO/TC 74 Hydraulic Binders (Sectt: Belgium) — A meeting of Subcommittee ISO/TC 74/SC 2 Plasters was held from 22 to 24 November 1960 at Cracow (Poland). Meetings of the Committee and its two subcommittees have been planned to be held in June 1961 in Italy.

ISO/TC 77 Asbestos Cement Products (Sectt: Switzerland) — The fifth plenary meeting of ISO/TC 77 was held in Stockholm in June 1960. ISO Recommendation on Asbestos Cement Pressure Pipes was finalized and is expected to be printed shortly. The following proposals, after acceptance by a majority of committee members, are being submitted to the General Secretariat as draft Recommendations:

- a) Fourth draft proposal on Building and Sewage Pipes as well as a proposal for the new wording of chapter 'Joints'
- b) Fourth draft proposal on Fittings for Building and Sewage Pipes of Asbestos Cement
- c) Third draft proposal on Symmetrical Corrugated Sheets. This will be submitted to the General Secretariat of ISO together with corresponding document on Symmetrical Corrugated Sheets.

ISO/TC 79 Light Metals and Their Alloys (Sectt: France) — India's approval was sent to the ISO General Secretariat in respect of the following draft ISO Recommendations, subject to certain editorial comments on the last two documents:

- a) Composition of 99.5 Unalloyed Magnesium Ingots,
- b) Composition of Aluminium Alloy Castings, and

- c) Composition of Wrought Products of Aluminium and Aluminium Alloys.

India's approval to the following draft proposals for ISO Recommendations was sent to the Secretariat:

- a) Electrolytic Determination of Copper in Aluminium and Its Alloys,
- b) Gravimetric Determination of Zinc in Aluminium and Its Alloys,
- c) Gravimetric Determination of Aluminium in Magnesium and Its Alloys, and
- d) Gravimetric Determination of Zinc in Magnesium and Its Alloys.

ISO/TC 81 Common Names for Pesticides (Sectt: UK) — The following three draft ISO Recommendations were received from the ISO General Secretariat (ISO/GS). India's comments on first two drafts were sent to ISO/GS in consultation with the National Committee, while those on draft No. 412 are being formulated:

- a) No. 366 Principles for the Selection of Common Names for Pesticides,
- b) No. 377 Common Names for Pesticides (Third List), and
- c) No. 412 Common Names for Pesticides (Fourth List).

ISO/TC 86 Refrigeration (Sectt: UK) — Meetings of the following Subcommittees were held at Paris from 17 to 27 October 1960. Shri J. C. Kapur, Chairman, Refrigeration and Air-Conditioning Sectional Committee, ISI, attended these meetings on behalf of India:

- a) ISO/TC 86/SC 3 Testing of Refrigerating Systems
- b) ISO/TC 86/SC 4 Testing of Refrigerant Compressors
- c) ISO/TC 86/SC 5 Construction and Testing of Household Refrigerators
- d) ISO/TC 86/SC 6 Testing of Factory Assembled Air-Conditioning Units

ISO/TC 87 Cork (Sectt: Portugal) — The second meeting of the Committee was held from 5 to 8 July 1960 at London. Draft ISO proposals relating to cork vocabulary; classification of cork for production of granulated cork; characteristics of granulated cork; and sampling and test methods for granulated cork were discussed at the meeting. During the meeting, an *Ad hoc* Working Group consisting of experts from France, Portugal and United Kingdom was constituted to consider the proposed draft on characteristics of granulated cork. In the light of the recommendations of the Working Group, the proposed draft was approved to be issued as a draft ISO Recommendation. The drafts on cork vocabulary, and classification of cork for production of granulated cork were also approved to be issued as draft ISO Recommendations.

ISO/TC 88 Pictorial Marking of Handling Instructions for Goods (Sectt: India) — At the invitation of ISI, the inaugural meeting of the Committee was held at New Delhi from 15 to 18 February 1961. Twenty-one delegates from: France (1), United Kingdom (2), and India (18); three

observers from: New Zealand (1), Turkey (1), and United States of America (1); and six representatives from the following international organizations interested in the subject attended the meeting:

- a) International Chambers of Commerce (ICC)
- b) International Cargo Handling Co-ordination Association (ICHCA)
- c) International Labour Office (ILO)
- d) International Road Transport Union (IRU)
- e) Universal Postal Union (UPU)

The meeting was presided over by Shri N. S. Mankiker of the Ministry of Labour and Employment.

ISI, as the Secretariat of the Committee, had earlier issued documents relating to scope and programme of work; basic principles for evolving symbols; first draft proposal concerning pictorial marking of handling instructions for dangerous goods; and first draft proposal for pictorial marking of handling instructions for non-dangerous goods.

During the meeting, the Committee adopted, subject to certain editorial modifications, the basic principles for evolving the symbols of pictorial marking of handling instructions for goods, as proposed by the Secretariat.

The Committee agreed that its title be amended to read as 'Pictorial Marking for Handling of Goods'. The following was adopted as the scope of the Committee:

'Preparation of recommendations for pictorial markings for application to packages of goods to indicate the need for special handling to ensure protection of goods and safety of personnel'.

It was further resolved that initially the following programme of work be adopted for Technical Committee 88:

'Formulation of:

- a) basic principles,
- b) pictorial markings for handling of goods generally, and
- c) pictorial markings indicating the nature of risks in handling dangerous goods.'

The Committee agreed on seven symbols for indicating the following types of hazards in handling dangerous goods:

- a) Danger of Explosion
- b) Danger of Compressed Gas
- c) Danger of Ignition
- d) Danger of Oxidizing Substance
- e) Danger of Poisoning
- f) Danger of Corrosion
- g) Danger of Ionizing Radiation

Sufficient help was derived in this field from the work already done by international organizations, such as International Labour Organization, United Nations, and International Air Transport Association.

The Committee decided on seven symbols for use on packages containing general goods to indicate the following messages calling for special handling:

- a) Fragile. Handle with Care
- b) Use No Hooks. Do not Puncture
- c) This Way up
- d) Keep Cool. Stow Away from Boilers
- e) Sling Here
- f) Keep Dry
- g) Heavy Weight This End

It was resolved that two separate second draft proposals be prepared incorporating the symbols agreed to in respect of dangerous and non-dangerous goods respectively, with a view to their acceptance as draft ISO Recommendations. The Secretariat was requested to investigate through correspondence the desirability or otherwise of evolving markings depicting messages (1) Do Not Drop, and (2) Perishable.

ISO/TC 89 Derived Timber Products (Sectt: Germany) — The second plenary meeting of the Committee was held from 23 to 25 November 1960 in Stuttgart. The meeting dealt with documents on methods of tests to evaluate various types of fibre building boards. Draft ISO proposals relating in particular to measuring of dimensions, rules for the fixing of tolerances, dimensional stability, modulus of elasticity and elongation and impact resistance were decided to be drawn up as a part of future work. A Working Group on Dimensional Stability was set up with Sweden as Secretariat.

ISO/TC 90 Apparatus for Testing Milk and Milk Products (Sectt: Germany) — The Secretariat of the Committee asked the concerned member-bodies to confirm their participation in Working Group 3 Hydrometers for Use with Milk and with Liquid Milk Products, set up at the first meeting of the Committee. India confirmed its active participation in WG 3 and Dr. N. N. Dastur, Principal, Dairy Science College, National Dairy Research Institute, Karnal, was nominated as India's representative. The Committee had also asked the member-bodies to suggest the apparatus on which it should initiate work. In consultation with the Dairy Industry Sectional Committee, AFDC 12, it was suggested to ISO/TC 90 that work be initiated on the following apparatus:

- a) All apparatus used in testing milk products by Gerber Method including butyrometers, pipettes, automatic measures, etc
- b) Hydrometers for use in milk
- c) Apparatus for the determination of freezing point of milk

- d) Apparatus for sediment test in milk
- e) Apparatus for the determination of fat in milk and milk products gravimetrically by Rose-Gottlieb and Werner-Schmidt methods
- f) Apparatus for the determination of Reichert and Polenske values

ISO/TC 92 Fire Tests on Building Materials and Structures (Sectt: UK) — Preliminary suggestions on definitions, tests for combustibility and fire resistance of building materials and structures were circulated by the Secretariat as a basis for consideration at the first plenary meeting to be held in London from 18 to 21 April 1961.

ISO/TC 94 Protective Helmets (Sectt: UK) — This Technical Committee, of which India is an observer member, held its first meeting in London from 12 to 14 October 1960. Shri P. N. Mehrotra, a member of the Fire Fighting Sectional Committee of ISI, who was on the Continent at that time, attended the meeting on behalf of India. The Technical Committee set up the following two Working Groups to deal with the subject mentioned against each:

- Working Group 1 Industrial Helmets
- Working Group 2 Helmets for Road Users

ISO/TC 96 Cranes, Derricks and Excavators (Sectt: UK) — On the basis of proposals made by UK, ISO Council decided to set up a new Technical Committee (ISO/TC 96) to deal with cranes, derricks and excavators. India has decided to participate as a 'P' (participating) member of this Technical Committee.

ISO Proposal for Studying New Question — India's approval for the proposal made by the Japanese Industrial Standards Committee for setting up a new ISO Technical Committee for undertaking work on standardization of methods of sampling, reduction, size and moisture determination for iron ores has been sent to the ISO General Secretariat.

ISO/TC 98 Methods of Static Calculations of Building Constructions (Sectt: Poland) — This Technical Committee was set up during the year and India is a 'P' (participating) member. The scope of the Committee is as under:

Method of static calculations of building constructions made from:

- a) various components (units) for build-up in masonry;
- b) concrete, reinforced concrete, prestressed concrete;
- c) partially reinforced concrete with masonry walls;
- d) light concrete;
- e) steel;
- f) light metal; and
- g) timber.

The subject matter concerns the methods of static calculations as well as the safety of construction, independent of:

- a) dispersion of strength construction material,

- b) limit of plasticity,
- c) elongation,
- d) conditions of load, and
- e) accuracy of method of calculation.

ISO/TC 99 Semi-manufactures of Timber (Sectt: Rumania) — This is the Second Technical Committee to be newly established by ISO and, at present, India has observer interest. Preparation of ISO Recommendations covering framing strips, parquet flooring and similar semi-manufactured products of timber, excluding finished assemblies, such as doors, windows, furniture and the like fall under the scope of the Committee. Within this scope, the Committee would deal with nomenclature, specification and test methods.

2. INTERNATIONAL ELECTROTECHNICAL COMMISSION, IEC

(For IEC Publications during the year, see Appendix E)

2.1 India is a member of the International Electrotechnical Commission (IEC) and participates in the work of all of its 54 Committees. India is an elected member of its Committee of Action, which is the executive body of IEC.

2.2 IEC Meetings in India — The Twentyfifth Annual Group Meetings of the IEC were held at Vigyan Bhavan, New Delhi, from 30 October to 12 November 1960. The following Committees met on that occasion:

SC 2B	Dimensions of Motors
SC 2F	Dimensions of Carbon Brushes
SC 2G	Synchronous Machine Quantities
TC 12	Radio Communication
SC 12-1	Radio Receiving Equipment
SC 12-2	Safety
SC 12-7	Climatic and Durability Tests for Radio-Communication Equipment
SC 15	Insulating Materials
TC 17	Switchgear and Controlgear
SC 17A	High-Voltage Switchgear and Controlgear
SC 17B	Low-Voltage Switchgear and Controlgear
TC 35	Primary Cells and Batteries
TC 36	Insulators
SC 39/40	Sockets and Accessories for Electronic Tubes and Valves
TC 40	Components for Electronic Equipment
SC 40-3	Piezo-Electric Crystals
SC 40-4	Connectors and Switches
SC 40-5	Basic Testing Procedure

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| SC 40-5/WG 1 | Shock and Bump Testing |
| TC 43 | Electric Fans |
| TC 45 | Electrical Measuring Instruments Used in Connection with Ionizing Radiation |
| APSM | Advisory Panel for Safety Matters |
| CA | Committee of Action |

A notable outcome of these meetings, from India's point of view, was the invitation extended to Shri M. Hayath, Chairman of the Electrotechnical Division Council of ISI, for delivering the 1961 Charles le Maistre Memorial Lecture on the occasion of the next Annual General Meeting of the Commission to be held at Interlaken (Switzerland) in June 1961.

Another matter of significance to this country was the appointment of Shri S. N. Mukerji, Director, Government Test House, and Chairman of Electric Fans Sectional Committee (ETDC 5) of ISI, as the Chairman of IEC/TC 43 Electric Fans.

As a result of the New Delhi meetings, IEC Central Office was authorized to circulate as many as 18 IEC documents, discussed at new Delhi, for approval under the Six Months' Rule. Besides re-organization of work on electronics, two new technical committees to deal with (a) domestic refrigerators, and (b) printed wiring for telecommunication equipment were set up.

2.3 In addition to the meetings held at New Delhi, a number of IEC Technical Committees, Subcommittees and Working Groups met at Paris, Tours (France), Rapallo (Italy) and Brussels (Belgium). A brief report on their work and other important developments of interest to India are given below:

Committee of Action—The following important decisions were taken at the meeting held at New Delhi:

A new Technical Committee (IEC/TC 53 Domestic Refrigerators) with France as Secretariat was set up to supply ISO/TC 86/SC 5 Construction and Testing of Household Refrigerators, with electrical safety requirements for inclusion in the ISO Recommendations for Refri-

IEC's committee structure in the field of electronics and telecommunications was re-organized as under:

- TC 12 Radio-Communication
- TC 29 Electro-Acoustics
- TC 39 Electronic Tubes and Valves (ex SC 39-1)
- TC 40 Capacitors and Resistors for Telecommunication Equipment (ex SC 40-1)
- TC 46 Cables, Wires and Waveguides for Telecommunication Equipment
- TC 47 Semiconductor Devices for Telecommunication Equipment (ex SC 39-2)

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| TC 48 | Electromechanical Components for Telecommunication Equipment (ex SC 40-4) |
| TC 49 | Crystals and Associated Devices for Telecommunication Equipment (ex SC 40-3) |
| TC 50 | Climatic and Mechanical Testing Procedures for Telecommunication Components and Equipment |
| TC 51 | Ferromagnetic Materials for Telecommunication Equipment (ex SC 40-6) |
| TC 52 | Printed Wiring for Telecommunication Equipment |

Dr. M. Mazur (Poland) and Shri S. N. Mukerji (India) were appointed Chairmen of IEC/TC 27 Electro-Heating and IEC/TC 43 Electric Fans respectively.

An invitation from the Italian National Committee to hold IEC Group Meetings in 1963 in Venice was accepted.

It was agreed to form a new technical committee to deal with computers and data processing machines, the exact name and scope of the committee was left to be defined only after the Round Table Conference to be held in 1961 between IEC, ISO and other international organizations interested in the subject.

Agreement was reached on making application to the Inter-Governmental Maritime Consultative Organization (IMCO) for grant of consultative status, with the understanding that it would give IEC the right to ask for being represented at SOLAS (Safety of Life at Sea) meetings.

After a considerable discussion, the Technical Committees were permitted, subject to prior approval of Committee of Action, to use the letters 'IEC' for identifying a coding, classification or rating only when followed by the relevant IEC Recommendation number, and the appropriate coding, classification or rating.

It was also agreed that, in general, such identification should not be encouraged on any items which are sold direct to the general public.

IEC/SC 2B Dimensions of Motors (Sectt: Sweden) — The main item discussed was the extent to which Publications 72-1 and 72-2 relating to dimensions of foot mounted and flange mounted motors respectively had been adopted by various countries. (The current edition of Publication 72-1 gives a single series of dimensions based on a compromise proposal originally put forward by India. This recommendation specifies three different values of length of motor for the same shaft height so that any individual country may utilize only two sets of dimensions.) It was revealed that majority of the National Committees had adopted the dimensions specified in the former Publication. The Subcommittee also discussed extension of scope of these two publications with a view to providing for additional values of preferred kW output.

A new subject examined at the meeting related to standardization of dimensions of vertical motors in connection with which India has been asked to prepare the first draft for hollow shaft motors. Another proposal

made by India, which is receiving attention of the Committee, concerns standardization of location of terminal boxes on motors.

IEC/SC 2F Dimensions of Carbon Brushes (Sectt: Germany) — The Subcommittee discussed in detail dimensions of carbon brushes and diameter of terminal fixing screws, such as chamfers, angles for contact, and came to agreement in most of the cases. A working group was formed to examine the proposals regarding dimensions of flexibles. India's proposal for standardizing testing procedures and characteristics of various types of carbon brushes as well as blocks was accepted for consideration at a later date.

IEC/SC 2G Synchronous Machine Quantities (Sectt: USSR) — The discussion centred mainly on the draft recommended methods for determining synchronous machine quantities from tests. The object of preparing a document on this subject is to establish uniform methods of determining characteristic quantities of three-phase synchronous machines from tests.

IEC/TC 3 Graphical Symbols (Sectt: Switzerland) — Eight documents covering symbols for mechanical controls, electromechanical relays, examples of resistors, variability, semi-conductor devices, starters, generating stations and sub-stations, and transistors were approved for circulation.

IEC/TC 12 Radio Communication (Sectt: Netherlands) — The Committee held plenary session mainly to approve of the reports from its subcommittees which met earlier during the year.

IEC/SC 12-1 Radio Receiving Equipment (Sectt: Netherlands) — Several documents relating to radiation measurements on receivers and measurements at high frequencies were discussed. India's interest was limited to the discussions on revision of the existing IEC Publication on Methods of Measurements on A. M. Broadcast Receivers.

IEC/SC 12-2 Safety (Sectt: Netherlands) — This Subcommittee had under consideration the draft Revision of IEC Publication No. 65 covering recommended safety requirements for mains-operated radio receivers and allied electronic equipment. At New Delhi meeting, requirements of tropical countries received special consideration. Agreement was reached on the important question of permissible leakage current under tropical conditions. This was, to a large extent, made possible by the presentation of data collected in India by field investigations. The Indian point of view on the question of permissible maximum temperature of components also prevailed and it was agreed to give separate consideration for such requirements of tropics.

IEC/SC 12-7 Climatic and Durability Tests for Radio Communication Equipment (Sectt: Netherlands) — Preliminary proposals for climatic tests on complete electronic equipment were discussed. The discussion showed that though the methods of climatic testing of individual components have been fairly well established in advanced countries, similar work on complete electronic equipment was still in a preliminary stage. The tests which were considered at the meeting related to humid heat,

warm humid storage, humid preconditioning, dry cold, dry heat, low air pressure, mould growth, gas tightness, dust and sand, and vibration.

IEC/TC 13 Measuring Instruments (Sectt: Hungary) — Draft recommendations for varhour meters (reactive energy meters) was approved for circulation.

IEC/SC 13A Integrating Meters (Sectt: Hungary) — The Subcommittee discussed the document on reactive meters. Some difficult questions, such as classification by phase displacement, dielectric strength and temperature rise, were settled. It was also agreed to include the subject of maximum demand meters in its future programme of work.

IEC/SC 13B Indicating Instruments (Sectt: Hungary) — Draft recommendations for recording measuring instruments was discussed. The Secretariat was requested to prepare a revised draft for discussion at a joint meeting of the Working Group and the Editing Committee.

IEC/TC 15 Insulating Materials (Sectt: Italy) — The experts in the field from many countries examined the manner in which an encyclopaedia on insulating materials could be prepared without burdening the IEC Committees with additional work. Four of the Working Groups functioning under this Technical Committee also met to examine in detail some aspects of insulating materials coming under the scope of the Committee. One of the subjects discussed was about the test cells for measuring various electrical properties, such as dielectric constant, dissipation factor, resistivity, etc, of insulating materials. Documents on test procedure for the evaluation of thermal endurance of enamelled wire, guide for the preparation of test procedures for endurance of enamelled wire, guide for the preparation of test procedures for evaluating thermal endurance of electrical insulating materials, and standard methods of test for the determination of insulation resistance of solid insulating materials were approved for publication.

IEC/TC 17 Switchgear and Controlgear (Sectt: Sweden) — This Committee examined the reports from Subcommittee 17A High-Voltage Switchgear and Controlgear, and Subcommittee 17B Low-Voltage Switchgear and Controlgear, which had met earlier. The specification covering A. C. isolators (disconnectors) and earthing switches, and the documents on asymmetrical breaking capacity of circuit-breakers were approved for publication. Other subjects discussed were: testing of circuit breakers under different switching conditions, permissible switching over-voltages, specifications for low-voltage distribution circuit breakers and low-voltage contactors, and clearance on creepage distances in low-voltage switchgear and controlgear.

IEC/TC 18 Electrical Installations in Ships (Sectt: Netherlands) — Good progress was made during the year on revision of several chapters of IEC Publication 92 Recommendations for Electrical Installations in Ships.

IEC/TC 23 Electrical Accessories (Sectt: Belgium) — Draft recommendation for a specification covering Edison screw lamp holders was approved for circulation under the Six Months' Rule.

IEC/TC 29 Electro-Acoustics (Sectt: Netherlands) — Two documents dealing with magnetic sound recording on 16-mm and 35-mm films, and testing and calibration of ultrasonic therapeutic equipment were approved for circulation under the Six Months' Rule and another covering ordinary sound level meters was approved for circulation under the Two Months' Procedure. Besides, a new working group was set up to formulate draft specifications for artificial voices, mouths and ears.

IEC/SC 29-1 Sound Recording (Sectt: UK) — A number of draft amendments to IEC Publication 98 (Recommendations for Lateral Cut Commercial and Transcription Disk Recordings) and IEC Publication 94 (Recommendations for Magnetic Tape Recording and Reproducing Systems: Dimensions and Characteristics) was recommended for circulation to National Committees.

IEC/TC 29/WG 5 Loudspeakers (Sectt: UK) — The Working Group gave further consideration to the draft Recommendation for Methods of Measurements for Loudspeakers Part I: Performance Characteristics of Single Direct Radiator Electro-Dynamic Loudspeakers. The basic document on the subject had been submitted by the Indian representative.

IEC/TC 35 Primary Cells and Batteries (Sectt: France) — Revision of IEC Publication 86 which covers designation, sizes, test procedure and performance of various types of dry cells and batteries was discussed. A proposal made by India to have a temperature of $27^{\circ} \pm 2^{\circ}\text{C}$ for storage in delayed life test of the dry batteries in tropical and sub-tropical countries was accepted. The Committee also discussed several documents concerning discharge capacities for the dry batteries for radio equipment and discharge tests for electronic photo-flash sets. The main Indian interest revolved round the discussion relating to the storage test under extreme conditions of temperature and humidity. The Committee agreed, in principle, on the desirability of having such a test for special purposes and decided to consider the details at the next meeting.

IEC/TC 36 Insulators (Sectt: Italy) — Draft specifications for post insulators with rated voltage of 1 000 volts and above, dimensions of post insulators and large porcelain insulators were discussed. The introduction of a mechanical test as an alternative to electrical test for judging the soundness of walls of insulators was accepted in principle as also a spraying test as a secondary alternative to immersion test for the temperature cycle of large porcelain insulators.

IEC/SC 39-1 Electronic Tubes and Valves (Sectt: Netherlands) — As many as twenty-eight documents were discussed at the meeting. The more important ones related to bases of electronic tubes and valves, small wafer octal bases with coaxial leads, additional dimensions of gauge for octal bases, outlines of picture tubes, reference line gauges for picture and oscilloscope tubes, essential conditions for measuring equivalent input and output admittance, definitions of hot and cold capacitances, methods of measuring the noise factor of electronic valves, etc.

IEC/SC 39/40 Sockets and Accessories for Electronic Tubes and Valves (Sectt: Netherlands) — Dimensional and other requirements of sockets and shields for different types of electronic tubes and valves were considered.

IEC/TC 40 Electronic Components (Sectt: Netherlands) — The Committee held plenary session mainly to approve of the reports from its subcommittees which met at New Delhi.

IEC/SC 40-3 Piezo-Electric Crystals (Sectt: Netherlands) — This Subcommittee discussed, among other items, standard methods of tests on and article sheets for quartz crystal oscillator units and methods of measurements on filter crystal units.

IEC/SC 40-4 Connectors and Switches (Sectt: Netherlands) — This Subcommittee dealt with a number of documents covering requirements of different types of connectors and switches used in radio communication equipment. The more important of these related to (a) vibration tests for connectors, (b) three- and five-pole connectors for general purpose application, (c) multipole connectors for printed wire boards, (d) professional connectors, (e) battery connectors, and (f) rotary wafer switches and toggle switches.

IEC/SC 40-5 Basic Testing Procedures (Electronic Components) (Sectt: UK) — Proposals for revision of and additions to the IEC Publication on Climatic and Mechanical Durability Tests on Components were discussed. Detailed discussions took place on the following subjects in particular:

- a) System of component classification according to climatic severity,
- b) Mould growth test,
- c) Low air pressure,
- d) Change of temperature (short term),
- e) Dust test,
- f) Vibration (resonance search),
- g) Corrosion test, and
- h) Artificial solar radiation.

The Subcommittee also received the report of the Working Group on Shock and Bump Testing which met earlier at New Delhi. India had been taking continuous interest in the work of this Subcommittee for the past many years and at this meeting proposals from India on a number of tests, particularly those on mould growth and dust, were discussed and accepted.

IEC/TC 41 Protective Relays (Sectt: France) — Only a part of a document covering Recommendations for Electrical Protective and Allied Relays could be discussed at the meeting. The Committee decided to meet again in Interlaken in June 1961 to discuss the remaining part.

IEC/TC 43 Electric Fans (Sectt: India) — The meeting was presided over by Shri S. N. Mukerji, Director, Government Test House, Calcutta, who had earlier been appointed by the Committee of Action as its permanent Chairman. Revised draft recommendations on ceiling, table and pedestal type electric fans were considered. The important points discussed were about the criteria for continuing the air velocity measurements for ceiling fans and performance values of all types of fans. An Indian proposal to have a common reference ambient temperature of 40°C for both tropical and temperate climates for computing the temperature rise limits was accepted. The air delivery and service value figures for ceiling fans were also agreed upon whereas in the case of table type and pedestal type fans, a decision will be taken later after further experimental verification.

IEC/TC 45 Electrical Measuring Instruments Used in Connection with Ionizing Radiation (Sectt: Germany) — The Committee formulated its exact scope and programme of work and set up Working Groups to deal with specific aspects of nuclear instruments standardization, namely (a) Classification and Terminology, (b) Safety Requirements, (c) Interchangeability, and (d) Reactor Instrumentation. A representative from India was appointed on the Working Group for Reactor Instrumentation.

3. SECOND MIDDLE EAST STANDARDIZATION CONFERENCE 1961 — CAIRO

3.1 The Second Session of the Middle East Standardization Conference was held in Cairo from 30 January to 5 February 1961.

The Conference was inaugurated, on behalf of the President of the United Arab Republic, by Dr. Aziz Sidky, Central Minister of Industry and President of Egyptian Organization for Standardization. In all, representatives of the following organizations, attended the Conference:

a) *International Organizations*

International Organization for Standardization
International Organization for Legal Metrology

b) *National Standards Organizations*

American Standards Association
British Standards Institution
Egyptian Organization for Standardization
French Association for Standardization
G. D. R. Standardization Association
Hungarian Office for Standardization
Indian Standards Institution

Indonesian Standards Institution
National Bureau of Standards of USA
National Institute for Material Testing of UAR
National Physical Institute for UAR
Romanian State Office for Standards
Soviet Committee of Standards
Tchecozlovakian Organization for Standardization
Turkish Standards Institution

The Indian Standards Institution was represented in the Conference by Dr. A. N. Ghosh, Joint Director, ISI.

3.2 Five symposia relating to different fields of standardization were held in addition to nine Technical Sessions which were mainly conducted in Arabic. India participated in the symposia for which four papers had been contributed, namely:

- a) Working of Indian Standards Institution and Its Relation with Bodies, like the International Organization for Standardization
- b) Role of Standardization in Quality Control
- c) Inter-Conversion and Co-ordination of Values in Metric and Inch Systems
- d) Training of Technical Personnel for Indian Standards Institution

In addition, the ISI film 'Standards for Industry' was also exhibited for the information of delegates to the Conference.

3.2.1 The papers presented by India were well received and their presentation was followed by lively discussions and a large number of questions. ISI's paper on 'Inter-Conversion and Co-ordination of Values in Metric and Inch Systems' was commended by Dr. J. R. Townsend, President of the American Standards Association, who also represented in the Conference the National Bureau of Standards of the Government of United States of America. Dr. Townsend expressed the opinion that ISI's approach to the problem was very sound and well planned, and he entirely agreed with what had been said in the paper. A special vote of thanks was passed at the fourth symposium for the Indian delegate, for the wealth of information and experience he had brought to the Conference.

3.2.2 After the presentation of papers on ISI and, particularly, the exhibition of the film 'Standards for Industry', great interest was shown in the working of ISI. The Indian delegate received a number of requests for more literature about the Institution. The ISI Training Scheme for Probationer Officers also created great interest and there was demand for more information on the Scheme.

3.3 Realizing that standard specifications and measurements are most important means for the development of national economies; for safeguarding the consumer's interest and preventing adulteration; and for

trade and commerce at international level; the Conference adopted a number of recommendations on the subject.

3.4 The Indian delegate presented, on behalf of the Institution, a 'Conversion Slide Table' to the President of Egyptian Organization for Standardization, Dr. Aziz Sidky, Central Minister of Industries, in the closing session of the Conference.

PART IV APPENDICES

APPENDIX A

(See page 6)

INDIAN STANDARDS PUBLISHED AND IN PRESS DURING 1960-61

(This list gives the new Indian Standards published during 1960-61 and those which were under print on 31-3-61. It does not include standards which were under print on 31-3-60 and printed during the year under report. The latter were included in a similar list published as Appendix A in last year's Annual Report.)

Sl No.		Rs
EC		
1.	IS : 1722-1960 Guide for Specifying Metric Values in Standards ...	3-50
AGRICULTURAL AND FOOD PRODUCTS		
Beehives and Honey Equipment		
2.	IS : 1735-1960 Hive Stands ...	1-50
3.	IS : 1736-1960 Honey Extractors, Tangential Type ...	2-00
Confectionery		
4.	IS : 1667-1960 Toffees ...	4-00
5.	IS : 1668-1960 Lozenges ...	1-50
Dairy Utensils		
6.	IS : 1613-1960 Milk Bottle Crates ...	2-00
7.	IS : 1705-1960 Aluminium Foil for Milk Bottle Caps ...	1-50
8.	IS : 1733-1960 Aluminium Milk Strainers ...	2-00
Food Colours		
9.	IS : 1694-1960 Tartrazine ...	2-50
10.	IS : 1695-1960 Sunset Yellow FCF ...	2-00
11.	IS : 1696-1960 Amaranth ...	1-50
12.	IS : 1697-1960 Erythrosine ...	2-00
13.	IS : 1698-1960 Indigo Carmine ...	1-50
14.	IS : 1699-1960 Methods of Sampling and Test for Coal Tar Food Colours ...	3-50
Food Grain Storage Structures and Regulated Market Yards		
15.	IS : 603-1960 Code of Practice for Construction of Underground Rural Food Grain Storage Structures ...	2-00
16.	IS : 605-1960 Code of Practice for Construction of Food Grain Storage Structures Suitable for Trade and Government Purposes for the Central Region ...	3-00

APPENDIX A — Indian Standards Published and in Press — Contd

Sl No.		Rs
Infant Foods		
17.	IS : 1656-1960 Processed Cereal Infant Foods ...	4-50
18.	IS : 1657-1960 Special Infant Foods ...	1-50
Meat and Meat Products		
19.	IS : 1723-1960 Pork ...	1-00
20.	IS : 1743-1960 Meat of Sheep and Goats Canned in Brine ...	5-50
Pest Control Products and Equipment		
21.	IS : 1665-1960 Cuprous Oxide Water Dispersible Powder Concentrates ...	2-50
22.	IS : 1669-1960 Cuprous Oxide Dusting Powders ...	2-50
23.	IS : 1682-1960 Cuprous Oxide, Technical (Fungicidal Grade) ...	2-50
Poultry and Cattle Feeds		
24.	IS : 1664-1960 Mineral Mixture for Supplementing Cattle Feeds ...	4-50
25.	IS : 1712-1960 Cottonseed Oilcake as Livestock Feed ...	1-00
26.	IS : 1713-1960 Decorticated Groundnut Oilcake as Livestock Feed ...	1-00
27.	IS : 1714-1960 Methods of Sampling and Test for Oilcakes as Livestock Feed ...	2-50
Sugars		
28.	IS : 1679-1960 Sugar Used in Food Preservation Industry ...	5-00
Tobacco Products		
29.	IS : 1577-1960 Cigarettes (From Indian Tobacco) ...	5-50
30.	IS : 1578-1960 Smoking Mixtures ...	4-50
31.	IS : 1769-1961 Cigars and Cheroots ...	4-00
32.	IS : 1770-1961 Chuttas (Country Cheroots) ...	2-00
BUILDING		
Codes of Practice		
33.	IS : 962-1960 Code of Practice for Architectural and Building Drawings ...	7-50
34.	IS : 1081-1960 Code of Practice for Fixing and Glazing of Metal (Steel and Aluminium) Doors, Windows and Ventilators ...	5-50
35.	IS : 1609-1960 Code of Practice for Laying Damp-Proof Coursing Using Bitumen Felts ...	3-50
36.	IS : 1624-1960 Code of Practice for Field Testing of Building Lime and Lime Mortar ...	2-50
37.	IS : 1634-1960 Code of Practice for Design and Construction of Wood Stairs ...	2-00
38.	IS : 1635-1960 Code of Practice for Field Slaking of Lime and Preparation of Putty ...	2-50
39.	IS : 1641-1960 Code of Practice for Fire Safety of Buildings (General): General Principles and Fire Grading ...	10-00
40.	IS : 1642-1960 Code of Practice for Fire Safety of Buildings (General): Materials and Details of Construction ...	6-00
41.	IS : 1643-1960 Code of Practice for Fire Safety of Buildings (General): Exposure Hazard ...	2-50
42.	IS : 1644-1960 Code of Practice for Fire Safety of Buildings (General): Personal Hazard ...	6-00

APPENDIX A — Indian Standards Published and in Press — Contd

Sl No.		Rs
43.	IS : 1645-1960 Code of Practice for Fire Safety of Buildings (General): Chimneys, Flues, Flue Pipes and Hearths ...	2-00
44.	IS : 1647-1960 Code of Practice for Fire Safety of Buildings (General): Non-Electric Lighting Equipment, Oil and Gas Heaters and Burners of Small Capacity ...	2-50
45.	IS : 1661-1960 Code of Practice for Cement and Cement-Lime Plaster Finishes on Walls and Ceilings ...	5-50
46.	IS : 1742-1960 Code of Practice for Building Drainage ...	7-50
Fire Fighting Equipment and Appliances		
47.	IS : 932-1960 30-34 m (or 100-110 ft) Mechanically Operated Turn-Table Ladder for Fire Brigade Use ...	4-00
48.	IS : 938-1960 1 800-l/min (or 400 gal/min) Small Fire Engine ...	4-00
49.	IS : 939-1960 Snatch Block for Use with Fibre Rope for Fire Brigade Use ...	2-00
50.	IS : 947-1960 Towing Tender for Trailer Pump for Fire Brigade Use ...	3-00
51.	IS : 951-1960 Combined Foam and CO ₂ Crash Tender ...	3-00
52.	IS : 953-1960 Small Foam Crash Tender ...	3-00
General Civil Engineering		
53.	IS : 1678-1960 Prestressed Concrete Poles for Overhead Power, Traction and Telecommunication Lines ...	2-50
Methods of Test		
54.	IS : 1706-1960 Method for Determination of Resistance to Wear by Abrasion of Natural Building Stones ...	2-00
55.	IS : 1708-1960 Methods of Testing Small Clear Specimens of Timber ...	5-00
56.	IS : 1727-1960 Methods of Test for Pozzolanic Materials ...	7-00
57.	IS : 1734-1960 Methods of Test for Plywood ...	4-00
Miscellaneous Items		
58.	IS : 1568-1960 Wire Gauze for General Purposes ...	1-50
59.	IS : 1607-1960 Methods for Dry Sieving ...	3-00
60.	IS : 1629-1960 Rules for Grading of Cut Sizes of Timber ...	4-50
61.	IS : 1630-1960 Mason's Tools for Plaster Work and Pointing Work ...	3-00
62.	IS : 1650-1960 Colours for Building and Decorative Finishes ...	2-00
63.	IS : 1707-1960 Wood Wool for General Packaging Purposes ...	2-00
64.	IS : 1725-1960 Soil-Cement Blocks Used in General Building Construction ...	2-00
Reinforcement		
65.	IS : 432-1960 Mild Steel and Medium Tensile Steel Bars, and Hard-Drawn Steel Wire for Concrete Reinforcement (<i>Revised</i>) ...	2-50
66.	IS : 1566-1960 Hard-Drawn Steel Wire Fabric for Concrete Reinforcement ...	2-00
Service Equipment and Accessories		
67.	IS : 774-1960 Flushing Cisterns for Water Closed and Urinals (Valveless Siphonic Type) (<i>Revised</i>) ...	2-00
68.	IS : 1391-1960 Room Air-Conditioners ...	4-00
69.	IS : 1592-1960 Asbestos Cement Pressure Pipes ...	2-50
70.	IS : 1626-1960 Asbestos Cement Building Pipes, Cutters and Fittings (Spigot and Socket Type) ...	8-00

APPENDIX A — Indian Standards Published and in Press — Contd

Sl No.		Rs
71.	IS : 1700-1960 Drinking Fountains ...	1-50
72.	IS : 1701-1960 Mixing Valves for Ablutionary and Domestic Purposes ...	2-00
73.	IS : 1711-1960 Self-Closing Taps ...	2-00
74.	IS : 1726-1960 Cast Iron Manhole Covers and Frames Intended for Use in Drainage Works ...	3-00
75.	IS : 1728-1960 Sheet Metal Rainwater Pipes Up to 100 mm Nominal Size, Cutters, Fittings and Accessories ...	3-00

Tar and Bitumen

76.	IS : 1580-1960 Bitumen (Plastic) for Waterproofing Purposes ...	2-00
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Timber and Timber Products

77.	IS : 190-1960 Coniferous Sawn Timber Intended for Further Conversion (Second Revision) ...	2-00
78.	IS : 287-1960 Recommendations for Maximum Permissible Moisture Content of Timber Used for Different Purposes in Different Climatic Zones (Revised) ...	2-50
79.	IS : 303-1960 Plywood for General Purposes (Revised) ...	4-50
80.	IS : 1658-1960 Fibre Hardboards ...	2-50
81.	IS : 1659-1960 Blockboards ...	4-00

CHEMICALS

Chemicals, Miscellaneous

82.	IS : 1040-1961 Calcium Carbide, Technical (Revised) ...	5-00
83.	IS : 1290-1960 Mineral Gypsum for Ammonium Sulphate and Cement Industries ...	1-50
84.	IS : 1612-1960 Iron Powder (Reduction Grade) ...	2-00
85.	IS : 1675-1960 Stearic Acid, Technical ...	2-00
86.	IS : 1676-1960 Oleic Acid, Technical ...	2-50
87.	IS : 1683-1960 Barytes for Rubber Industry ...	4-00
88.	IS : 1684-1960 Natural Red Oxides of Iron for Rubber Industry ...	2-50
89.	IS : 1685-1960 Whiting for Rubber Industry ...	2-50
90.	IS : 1744-1960 Stannic Chloride Anhydrous, Technical ...	5-50
91.	IS : 1767-1961 Dicalcium Phosphate for Dentifrice ...	4-00
92.	IS : 1768-1961 Tricalcium Phosphate for Dentifrice ...	3-00

Essential Oils and Allied Products

93.	IS : 1614-1960 Oil of Vetiver Roots (Cultivated) ...	1-50
94.	IS : 1615-1960 Oil of Himalayan Cedarwood ...	1-50
95.	IS : 1616-1960 Oil of Spike Lavender ...	1-50
96.	IS : 1617-1960 Oil of Lavandin ...	1-50
97.	IS : 1618-1960 Oil of Lavender — French ...	1-50

Glassware and Ceramicware

98.	IS : 1574-1960 Glass Weighing Bottles ...	2-00
99.	IS : 1575-1960 Separating Funnels ...	2-50
100.	IS : 1590-1960 Glass Filter Flasks ...	2-50
101.	IS : 1662-1960 Glass Liquor Bottles ...	2-00
102.	IS : 1672-1960 Floating Dairy Thermometers ...	1-50
103.	IS : 1761-1960 Transparent Sheet Glass for Glazing and Framing Purposes ...	2-00

APPENDIX A — Indian Standards Published and in Press — Contd

Sl No.		Rs
Industrial Gases		
104.	IS : 1747-1960 Nitrogen, Technical ...	1-00
Inks and Allied Products		
105.	IS : 1581-1960 Ferro-Gallo Tannate Fountain Pen Ink (0.2 Percent Iron Content) ...	1-50
Leather and Leather Products		
106.	IS : 1636-1960 Chrome Waxed Sole Leather ...	1-50
107.	IS : 1637-1960 Cycle Saddle Leather ...	1-50
108.	IS : 1638-1960 Sizes and Fittings of Footwear ...	1-00
109.	IS : 1639-1960 East India Tanned Kips and Skins ...	1-50
110.	IS : 1640-1960 Glossary of Terms Relating to Hides, Skins and Leather ...	10-00
111.	IS : 1746-1960 Shoe Polish ...	2-50
Oils and Fats		
112.	IS : 887-1960 Mutton Tallow ...	1-50
113.	IS : 1780-1961 Vegetable Tallow ...	1-50
Paper and Allied Products		
114.	IS : 1060(Part II)-1960 Methods of Sampling and Test for Paper and Allied Products, Part II ...	5-50
115.	IS : 1396-1960 Blotting Paper ...	1-00
116.	IS : 1397-1960 Kraft Paper ...	1-00
117.	IS : 1398-1960 Packing Paper, Waterproof, Bitumen Laminated ...	1-00
118.	IS : 1774-1961 Paper for Permanent Records ...	2-00
119.	IS : 1775-1961 Base Paper for Sensitized Paper ...	1-50
120.	IS : 1776-1961 Folding Box Board, Uncoated ...	1-50
Paints and Allied Materials		
121.	IS : 1704-1960 Black Japan for Hot Surfaces ...	2-00
Petroleum Products and Lubricants		
122.	IS : 1448(Part I)-1960 Methods of Test for Petroleum and Its Products — Part I ...	25-00
123.	IS : 1518-1960 Method for Gauging of Petroleum and Liquid Petroleum Products ...	8-00
124.	IS : 1519(Part I)-1960 Method for Temperature Measurement of Petroleum and Petroleum Products ...	4-00
125.	IS : 1558-1960 Vaporizing Oil ...	1-00
126.	IS : 1571-1960 Aviation Turbine Fuels, Kerosine Type ...	1-00
127.	IS : 1585-1960 Motor Gasoline, 79 Octane ...	1-00
128.	IS : 1587-1960 Aviation Turbine Fuels, High Flash ...	1-00
129.	IS : 1588-1960 Aviation Turbine Fuels, Wide Cut Gasoline Type ...	1-00
130.	IS : 1589-1960 Oil, Cylinder ...	2-00
131.	IS : 1593-1960 Fuel Oils ...	1-50
132.	IS : 1604-1960 Aviation Gasoline ...	1-50
133.	IS : 1628-1960 Oil, Lubricating, Axle, Regular and Premium ...	1-50
134.	IS : 1674-1960 Temporary Corrosion Preventive, Fluid, Soft Film, Solvent Deposited ...	3-00
135.	IS : 1758-1960 Jute Batching Oil ...	2-00

APPENDIX A — Indian Standards Published and in Press — Contd

Sl No.	Rs
Plastics	
136. IS : 1627-1960 Cellulose Nitrate for Use in Coated Fabrics ...	5.50
Rubber Products	
137. IS : 1677-1960 Braided Spray Hose, High Pressure for Agricultural Purposes...	1.50
138. IS : 1741-1960 Latex Foam Rubber Products ...	4.00
Water and Water Treatment	
139. IS : 1070-1960 Water, Distilled Quality (<i>Revised</i>) ...	2.00
140. IS : 1631-1960 Methods of Test (Physical) for Industrial Water ...	2.50
141. IS : 1680-1960 Code of Practice for Treatment of Water for Land Boilers ...	6.00
ELECTROTECHNICAL	
Appliances and Wiring Accessories	
142. IS : 302-1960 General and Safety Requirements for Light Electrical Appliances (<i>Revised</i>) ...	5.00
143. IS : 1567-1960 Metal Clad Switches (Current Rating Not Exceeding 100 Amperes) ...	4.00
144. IS : 1606-1960 Schedule for Automobile Lamps ...	1.50
145. IS : 1653-1960 Steel Conduits for Electrical Wiring ...	2.00
Batteries	
146. IS : 1146-1960 Hard Rubber Containers for Motor Vehicle Batteries ...	3.00
147. IS : 1651-1960 Stationary Cells and Batteries, Lead-Acid Type (With Tubular Positive Plates) ...	3.50
148. IS : 1652-1960 Stationary Cells and Batteries Lead-Acid Type (With Planté Positive Plates) ...	4.00
Cables, Conductors and Accessories	
149. IS : 1554(Part I)-1961 PVC Insulated (Heavy Duty) Electric Cables Part I for Working Voltages Up to and Including 1 100 Volts ...	6.00
150. IS : 1591-1960 Glossary of Terms for Electrical Cables and Conductors ...	1.00
151. IS : 1594-1960 Metric Sizes of Copper Wires and Conductors for Electrical Purposes ...	2.00
152. IS : 1595-1960 Enamelled High-Conductivity Annealed Round Copper Wire (Synthetic Enamel) ...	5.00
153. IS : 1778-1961 Reels and Drums for Bare Wire ...	1.50
Electroplating	
154. IS : 1572-1960 Cadmium Plating ...	2.50
155. IS : 1573-1960 Zinc Plating ...	2.50
156. IS : 1771-1961 Industrial Silver Plating ...	3.50
157. IS : 1772-1961 Copper Plating ...	2.50
Instruments and Meters	
158. IS : 722(Part IV)-1961 A.C. Electricity Meters Part IV Three-Phase Kilowatt-hour Meters with Maximum Demand Indicator ...	4.50

APPENDIX A — Indian Standards Published and in Press — Contd

Sl No.	Rs
159. IS : 1565-1960 Electrical Apparatus Comprising Resistors...	2.50
160. IS : 1765-1961 DC Potentiometers for Laboratory and Industrial Uses ...	1.50
161. IS : 1766-1961 Time Switches ...	2.00
Miscellaneous	
162. IS : 1777-1961 Industrial Lighting Fitting with Metal Reflectors ...	2.00
Rotating Machinery	
163. IS : 374-1960 Electric Ceiling Fans and Regulators (<i>Revised</i>) ...	3.00
164. IS : 555-1960 Electric Table Type Fans and Regulators (<i>Revised</i>) ...	3.00
165. IS : 1709-1960 Fixed Capacitors for Fans ...	3.50
ENGINEERING	
Instruments	
166. IS : 1400-1960 Optical Glass ...	2.50
167. IS : 1480-1960 Metric Scales for General Purposes ...	4.00
168. IS : 1481-1960 Metric Steel Scales for Engineers ...	2.50
169. IS : 1482-1960 Metric Scales for Use with Drafting Machines ...	2.00
170. IS : 1632-1960 Bubbles ...	2.50
171. IS : 1764-1961 Trough Compasses ...	1.00
172. IS : 1779-1961 4-Metre Levelling Staff, Folding Type ...	1.50
Internal Combustion Engines	
173. IS : 1600-1960 Code for Type Testing of Constant Speed Internal Combustion Engines for General Purposes ...	1.00
174. IS : 1601-1960 Performance of Constant Speed Internal Combustion Engines for General Purposes ...	4.00
175. IS : 1602-1960 Code for Type Testing of Variable Speed Internal Combustion Engines for Automotive Purposes...	1.50
176. IS : 1603-1960 Performance of Variable Speed Internal Combustion Engines for Automotive Purposes ...	2.50
Machinery	
177. IS : 1691-1960 Cast Iron and Mild Steel Flat Pulleys ...	2.50
178. IS : 1710-1960 Vertical Turbine Pumps for Clear, Cold, Fresh Water ...	6.50
Screw Threads	
179. IS : 1363-1960 Black Hexagonal Bolts (6 to 39 mm) with Nuts and Black Hexagonal Screws (6 to 24 mm) ...	2.00
180. IS : 1364-1960 Precision and Turned Hexagonal Bolts (6 to 39 mm) with Nuts and Hexagonal Screws (6 to 39 mm) ...	2.00
181. IS : 1368-1961 Dimensions of Ends of Bolts and Screws ...	1.00
Sewing Machines	
182. IS : 1610-1960 General Requirements for Sewing Machines (Household Model) ...	2.00
Tools	
183. IS : 273-1961 Picks and Beaters (<i>Revised</i>) ...	3.00
184. IS : 274-1961 Shovels (<i>Revised</i>) ...	3.00

APPENDIX A — Indian Standards Published and in Press — Contd

Sl No.	Rs
185. IS : 599-1960 Twist Drills (<i>Revised</i>) ...	6-00
186. IS : 1759-1961 <i>Powrahs</i> ...	4-50
Unclassified	
187. IS : 2-1960 Rules for Rounding Off Numerical Values (<i>Revised</i>) ...	2-50
188. IS : 696-1960 Code of Practice for General Engineering Drawings (<i>Revised</i>) ¹ ...	15-00
Utensils	
189. IS : 1660-1960 Wrought Aluminium Utensils ...	2-00
Weights and Measures	
190. IS : 1433-1960 Beam Scales ...	2-50
191. IS : 1435-1960 Platform Weighing Machines ...	2-00
192. IS : 1436-1960 Weigh-Bridges ...	2-00
193. IS : 1702-1960 Spring Balances ...	1-50
STRUCTURAL AND METALS	
Chemical Analysis	
194. IS : 1345-1960 Methods of Chemical Analysis of Printing Metals ...	3-50
195. IS : 1473-1960 Methods of Chemical Analysis of Manganese Ores ...	6-00
196. IS : 1527-1960 Methods of Chemical Analysis of Fireclay and Silica Refractory Materials ...	5-50
Copper and Copper Alloys	
197. IS : 304-1961 High Tensile Brass Ingots and Castings (<i>Revised</i>) ...	2-50
198. IS : 306-1960 Tin Bronze Ingots and Castings (<i>Revised</i>) ...	2-00
Ferro Alloys	
199. IS : 1466-1960 Ferro Vanadium ...	1-00
200. IS : 1467-1960 Ferro Tungsten ...	1-00
201. IS : 1468-1960 Ferro Titanium ...	1-00
202. IS : 1469-1960 Ferro Molybdenum ...	1-00
203. IS : 1470-1960 Silico Manganese ...	1-00
204. IS : 1471-1960 Ferro Phosphorus ...	1-00
Foundry	
205. IS : 1752-1961 Coal Dust for Use in Cast Iron Foundry ...	2-00
Lead, Zinc, Tin, Antimony, and Their Alloys	
206. IS : 405-1961 Lead Sheet (<i>Revised</i>) ...	1-00
207. IS : 1654-1960 Antimonial Lead for Storage Batteries ...	1-00
208. IS : 1655-1960 Code of Practice for Manufacture of Zinc Alloy Pressure Die Castings ...	4-00
Methods of Sampling	
209. IS : 1405-1960 Methods of Sampling Iron Ore ...	3-00
210. IS : 1449-1961 Methods of Sampling Manganese Ore ...	3-00

APPENDIX A — Indian Standards Published and in Press — Contd

Sl No.	Rs
Physical Tests	
211. IS : 1521-1960 Method for Tensile Testing of Steel Wire ⁸ ...	2-00
212. IS : 1586-1960 Method for Rockwell Hardness Test (B and C Scales) for Steel ⁸ ...	1-50
213. IS : 1598-1960 Method for Izod Impact Test for Steel ⁴ ...	2-00
214. IS : 1599-1960 Method for Bend Test for Steel Products Other Than Sheet, Strip, Wire and Tube ⁵ ...	2-00
215. IS : 1608-1960 Method for Tensile Testing of Steel Products Other Than Sheet, Strip, Wire and Tube ⁶ ...	2-50
216. IS : 1663-1960 Method for Tensile Testing of Steel Sheet and Strip of Thickness 0.5 mm to 3 mm ⁷ ...	2-00
217. IS : 1692-1960 Method for Simple Bend Testing of Steel Sheet and Strip Less Than 3 mm Thick ⁸ ...	1-50
218. IS : 1716-1960 Method for Reverse Bend Testing of Steel Wire ⁹ ...	1-50
219. IS : 1717-1960 Method for Simple Torsion Testing of Steel Wire ¹⁰ ...	1-50
220. IS : 1754-1961 Method for Calibration of Vickers Hardness Testing Machines ...	1-50
221. IS : 1755-1961 Method for Wrapping Test of Wire ...	1-00
222. IS : 1756-1961 Method for Modified Erichsen Cupping Test for Steel Sheet and Strip ...	1-50
223. IS : 1757-1961 Method for Beam Impact Test (V Notch on Steel) ...	1-50
Pig Iron, Cast Iron and Malleable Cast Iron	
224. IS : 1536-1960 Centrifugally Cast (Spin) Iron Pressure Pipes for Water, Gas and Sewage ¹¹ ...	4-50
225. IS : 1537-1960 Vertically Cast Iron Pressure Pipes for Water, Gas and Sewage ¹² ...	4-50
226. IS : 1538-1960 Cast Iron Fittings for Pressure Pipes for Water, Gas and Sewage ¹³ ...	7-50
Refractories	
227. IS : 1523-1960 Bottom Pouring Refractories for Steel Plants ...	1-50
228. IS : 1525-1960 Ladle Refractories for Steel Plants ...	1-00
229. IS : 1526-1960 Sizes and Shapes for Firebricks ...	1-00
230. IS : 1748-1961 Sizes of Graphite Crucibles ...	1-00
231. IS : 1749-1961 Magnesite Refractories for Steel Plants ...	1-00
232. IS : 1750-1961 Dead-Burned Pea Magnesite ...	1-00
233. IS : 1751-1961 Fireclay Cupola Refractories ...	1-00
Steel and Steel Products	
234. IS : 1673-1960 Mild Steel Wire for Manufacture of Machine Screws (by Cold Heading Process) ...	1-50
TEXTILES	
Coir	
235. IS : 1693-1960 Door Mats — Rod ...	2-00
Cotton	
236. IS : 1556-1960 Handloom Cotton Polin, Bleached or Dyed ...	1-50
237. IS : 1557-1960 Handloom Cotton Bed Durries ...	2-00
238. IS : 1579-1960 Handloom Cotton Twills, Bleached or Dyed ...	1-50

APPENDIX A — Indian Standards Published and in Press — Contd

Sl. No.		Rs
239.	IS: 1718-1960 Cotton Spindle Tape for Cotton Textile Mills	2.50
240.	IS: 1720-1960 Cotton Sewing Thread, Bleached or Dyed	2.00
241.	IS: 1740-1960 Flat Cotton Wicks for Hurricane Lanterns and Lamps	4.00
Silk		
242.	IS: 1583-1960 Handloom Silk Dhoties, Loomstate	1.50
243.	IS: 1584-1960 Handloom Silk Shirting, Loomstate	1.50
244.	IS: 1686-1960 Handloom Silk Bush Shirt Cloth, Loomstate	1.50
245.	IS: 1687-1960 Handloom Silk <i>Kora</i> (Loomstate) Cloth	1.50
Textile Mill Stores and Accessories		
246.	IS: 1555-1960 Pitch Bound Wire Reeds for Use in Cotton Looms	2.50
247.	IS: 1605-1960 Tapioca Starch for Use in the Cotton Textile Industry	2.50
248.	IS: 1619-1960 Buffer Bands for Cop Changing Automatic Looms	2.00
249.	IS: 1724-1960 Methods of Specifying and Testing Varnished and Enamelled Ring Rabbeth Bobbins for Cloth Mills	5.00
250.	IS: 1737-1960 Small Size Spring Buffers for Cotton Looms	2.50
251.	IS: 1738-1960 Large Size Spring Buffers for Cotton Looms	3.00
252.	IS: 1739-1960 Cotton Healds for Use in Cotton Looms	4.00
Textile Test Methods		
253.	IS: 1383-1960 Method for Determination of Scouring Loss in Grey and Finished Cotton Textile Material	1.50
254.	IS: 1611-1960 Method for Cotton Fibre Immaturity Count — Polarized-Light Method	1.50
255.	IS: 1623-1960 Method for Testing Jute Fabrics for Resistance to Attack by Micro-Organisms	2.50
256.	IS: 1633-1960 Methods for Testing Jute Cordages for Resistance to Attack by Micro-Organisms	2.50
257.	IS: 1670-1960 Method for Determination of Breaking Load (Strength), Elongation at Break and Tenacity of Single Strand of Cotton Yarn (By Constant Rate-of-Traverse Machine)	2.00
258.	IS: 1671-1960 Method for Determination of Skin Breaking Load (Strength), Tenacity and Yarn Strength Index of Cotton Yarn (By Constant Rate-of-Traverse Machine) (<i>Metric System</i>)	2.00
259.	IS: 1688-1960 Procedure for Determination of Fastness of Dyestuffs ¹⁴	1.50
260.	IS: 1689-1960 Method for Determination of Barium Activity Number of Cotton Textile Materials	1.50
261.	IS: 1690-1960 Method for Determination of Colour Fastness of Textile Materials to Nitrogen Oxides	1.50
Wool		
262.	IS: 1681-1960 Blanket, Woollen, Dyed	2.00
263.	IS: 1719-1961 Felts, Woollen, Proofed and Unproofed	4.00
264.	IS: 1721-1960 Hair Belting Yarn	2.00

References

- Corresponds and substantially agrees with ISO/R 128-1959 Engineering Drawing: Principles of Presentation.
- Corresponds and substantially agrees with ISO/R 129-1959 Engineering Drawing: Dimensioning.
- Corresponds and substantially agrees with ISO/R 89-1959 Tensile Testing of Steel Wire.
- Corresponds and substantially agrees with ISO/R 80-1959 Rockwell Hardness Test (B & C Scales) for Steel
- Corresponds and substantially agrees with ISO/R 84-1959 Izod Impact Test for Steel.
- Corresponds and substantially agrees with ISO/R 85-1959 Bend Test for Steel.
- Corresponds and substantially agrees with ISO/R 82-1959 Tensile Testing of Steel.
- Corresponds and substantially agrees with ISO/R 86-1959 Tensile Testing of Steel Sheet and Strip Less Than 3 mm and not Less Than 0.5 mm Thick.
- Corresponds and substantially agrees with ISO/R 87-1959 Simple Bend Testing of Steel Sheet Strip Less Than 3 mm Thick.
- Corresponds and substantially agrees with ISO/R 144-1960 Reverse Bend Testing of Steel Wire.
- Corresponds and substantially agrees with ISO/R 136-1959 Simple Torsion Testing of Steel Wire.
- Corresponds and substantially agrees with ISO/R 13-1955 Cast Iron Pipes Special Castings and Cast Iron Parts for Pressure Main Lines.
- Corresponds and substantially agrees with ISO/R 13-1955 Cast Iron Pipes Special Castings and Cast Iron Parts for Pressure Main Lines.
- Corresponds and substantially agrees with ISO/R 13-1955 Cast Iron Pipes Special Castings and Cast Iron Parts for Pressure Main Lines.
- Corresponds and agrees with ISO/R 105-1959 (Part I) Test for the Colour Fastness of Textiles (First Series) — General Principles of Testing, Section 10, Fastness of Dyes.

INDIAN STANDARD SPECIFICATIONS WITHDRAWN DURING 1960-61

- IS : 311-1951 Oil, Cylinder, Pure Mineral, Ordinary
- IS : 312-1951 Oil, Cylinder, Compounded, Ordinary
- IS : 313-1951 Oil, Cylinder, Pure Mineral, Super Heat
- IS : 314-1951 Oil, Cylinder, Compounded, Super Heat
- IS : 315-1951 Oil, Cylinder, Pure Mineral, Filtered
- IS : 316-1951 Oil, Cylinder, Compounded, Filtered
- IS : 442-1954 Drums for Paints
- IS : 618-1956 Kegs (Open Top Drums) for Paints

APPEN

(See

INCOME AND EXPENDITURE ACCOUNT FOR

EXPENDITURE

SL No.	HEADS OF EXPENDITURE	AMOUNT
		Rs
1 & 2.	Pay and Allowances of Officers	653 166-53
3.	Provident Fund Contribution for Officers: i) Interest	20 110-00
	ii) Contribution	48 473-00
4.	TA for: i) Officers	132 045-66
	ii) Committee Members	32 992-87
5 & 6.	Pay and Allowances of Establishment	749 608-93
7.	Provident Fund Contribution for Staff: i) Interest	13 139-00
	ii) Contribution	53 076-00
8.	TA for Staff	15 567-08
9.	Subscription for ISO & IEC	23 290-06
10.	Printing	358 809-94
11.	Conferences: i) National	—
	ii) International (IEC & ISO Group Meetings in India)	424 671-11
12.	Exhibition	17 302-70
13.	Testing and Research: i) Research and Consultation	21 236-88
	ii) Certification Testing	20 471-36
14.	Publicity	38 592-69
15.	Laboratory Shop Equipment	15 545-59
16.	Museum	33 531-47
17.	Other Charges: i) Stationery	88 696-85
	ii) Postage & Telegrams	72 186-84
	iii) Library	26 791-10
	iv) Telephones	35 682-00
	v) Furniture	22 831-26
	vi) Office Equipment	32 772-37
	vii) Rent	16 762-91
	viii) Electric & Water Charges	21 446-83
	ix) Advertisement	11 109-93
	x) Audit Charges	1 000-00
	xi) Maintenance of Building, etc	26 934-44
	xii) Medical Relief	34 191-57
	xiii) Maintenance and Purchase of Staff Car	8 577-38
	xiv) Miscellaneous	42 708-81
	xv) Depreciation	122 355-06
	xvi) Add amount taken over to Balance Sheet:	3 235 678-22
	a) IEC & ISO Annual Group Meetings Fund	69 831-98
	b) Museum	16 468-52
	TOTAL	3 321 978-73

DIX B

page 9)

THE YEAR ENDED 31 MARCH 1961

INCOME

SL No.	HEADS OF INCOME	Rs	AMOUNT
		Rs	
1.	Income Other than Government Grants:		
	i) Subscription:		
	a) Collection During 1959-60 (Balance Sheet Item)	366 247-38	
	b) Collection During 1960-61	234 583-76	600 831-14
	ii) Sale Proceeds of ISI Publications (Net)		365 794-05
	iii) Commission on Sale of Publications Other than ISI Publications (Net):		
	a) ASTM	6 222-94	
	b) BSI	55 067-54	
	c) CE & ISE	125-66	
	d) IEC	2 879-42	
	e) IRS & ISD	132-97	
	f) ISO	545-52	
	g) JIS	1 896-08	
	h) SAA	16-61	
	j) Miscellaneous	10 622-12	77 508-86
	iv) Certification Marks Fees and Inspection Charges		214 862-68
	v) Contribution by ISI Employees to CHSS		6 993-75
	vi) Interest on Investments		9 332-90
	vii) Miscellaneous Receipts		17 951-99
	viii) Advertisement in ISI Bulletin		57 219-63
	ix) Industries Contribution Towards Annual Group Meetings of IEC & ISO in India:		
	a) Collection During the Year 1959-60 (Balance Sheet Item)	69 500-00	
	b) Collection During the Year	96 649-22	
	c) Collection of Excursion Fees from IEC & ISO Delegates	87 512-00	253 661-22
			1 604 156-22
2.	Government Grants:		
	i) Government Grant for Recurring Expenditure		1 360 000-00
	ii) Ad hoc Government Grant for Annual Group Meetings of IEC & ISO in India		250 000-00
	iii) Government Grant for Museum Received During 1959-60 (Transferred from Balance Sheet)		45 000-00
			3 259 156-22
	Add Excess of Expenditure Over Income		62 822-51
	TOTAL		3 321 978-73

APPEN
BALANCE SHEET AS

Sl No.		Rs	AMOUNT Rs
1.	Advance Subscription:		
i)	For 1961: a) Collection During 1959-60 (Balance Sheet Item)		
	b) Collection During 1960-61	50-00	
ii)	For 1962: a) Collection During 1959-60 (Balance Sheet Item)	344 055-65	
	b) Collection During 1960-61	25-00	
iii)	For 1963: Collection During 1960-61	25-00	
		<u>25-00</u>	
			344 180-65
2.	IEC & ISO Annual Group Meetings Fund		69 831-98
3.	Contributory Provident Fund:		
i)	Opening Balance		
ii)	Add Subscription (Less Withdrawals) During the Year	869 877-00	
iii)	Add Contribution (Less Refunds) During the Year	145 831-00	
		<u>111 385-00</u>	
			1 127 093-00
4.	Sundry Creditors:		
i)	Inland	180 231-46	
ii)	Abroad	114 524-32	
		<u>294 755-78</u>	
5.	ISI Building (Manak Bhavan) Fund:		
i)	Collection Up to 31/3/60 (Balance Sheet Item)		
ii)	Collection During the Year	2 084 725-87	
		<u>10 664-20</u>	
			2 095 390-07
6.	K. L. Moudgill Prize Fund:		
i)	Collection Up to 31/3/60 (Balance Sheet Item)	12 653-63	
ii)	Collection During the Year	842-13	
		<u>13 495-76</u>	
iii)	Less Expenses	650-00	
			12 845-76
7.	Gratuity Fund		21 000-00
8.	Museum		16 468-53
9.	Capital Account:		
i)	Balance (Brought Forward)		
ii)	Deduct Excess of Expenditure Over Income	497 793-86	
		<u>62 822-51</u>	
			434 971-35
	CARRIED OVER		<u>4 416 537-12</u>

DIX B—Contd
AT 31 MARCH 1961

ASSETS		Rs	AMOUNT Rs
Sl No.			
1.	Cash: i) At the Banks:		
	a) State Bank of India Delhi/Calcutta/Madras	50 023-61	
	b) Bank of Baroda Limited, New Delhi/Bombay	570 066-35	
	ii) In Office (Including Imprest):		
	New Delhi/Bombay/Calcutta/Madras	1 463-16	
	iii) Postage Stamps	3 133-44	624 686-56
2.	Investments: i) Deposits with Banks	239 294-13	
	ii) K. L. Moudgill Prize Fund (Shares of Jay Engineering Works)	11 400-00	
	iii) Contributory Provident Fund:		
	a) National Savings Certificates	930 000-00	
	b) Balance of Loans with Members	50 892-00	
	c) Balance in the Bank (State Bank of India, Delhi)	146 201-00	1 377 787-13
3.	Sundry Debtors: i) Advances to Staff:		
	a) Conveyance	17 161-75	
	b) Miscellaneous	2 844-13	
	ii) Deposits:		
	a) P & T Deptt., Bombay, Delhi and Calcutta (Balance Sheet Item)	75-00	
	b) NDMC (Balance Sheet Item)	3 600-00	
	c) Madras Electricity Board, Madras (Balance Sheet Item)	40-00	
	iii) Others:		
	a) Sale of Publications	169 792-61	
	b) Advertisement in ISI Bulletin	28 760-66	
	c) Miscellaneous	11 338-03	
	d) Suspense Debits	3 521-15	237 133-33
4.	Stock: i) Printing Paper in Hand	86 898-12	
	ii) Library Books	10 833-96	
	iii) Furniture & Office Equipment	92 879-28	190 611-36
5.	Staff Cars (Two)		19 485-63
6.	ISI Building (Manak Bhavan):		
	i) Cost as at 31/3/60 (Balance Sheet Item)	1 953 816-48	
	ii) Add Expenses During the Year	85 876-38	
		2 039 692-86	
	iii) Less Depreciation	103 847-97	1 935 844-89
			4 385 548-90

APPEN BALANCE SHEET AS

LIABILITIES

	AMOUNT
	Rs
BROUGHT FORWARD	4 416 537-12

TOTAL 4 416 537-12

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

Sd. H. C. PANDE
Assistant Audit Officer
Food, Rehabilitation, Supply, Commerce, Steel & Mines, New Delhi

DIX B—Contd AT 31 MARCH 1961

ASSETS

SL No.		Rs	AMOUNT Rs
	BROUGHT FORWARD		4 385 548-90
7.	Expenses Prepaid:		
i)	Deputy Controller of Stationery, Calcutta	11 959-47	
ii)	Surveyor General of India, Calcutta (Balance Sheet Item)	1 000-00	
iii)	M/s. Ghose Estate, Calcutta (Advance of rent for 3 months for Branch Office, Calcutta Premises)	5 028-75	
iv)	Director General of Supplies & Disposals (DGS&D), New Delhi (Advance for the Purchase of New Staff Car)	13 000-00	
			30 988-22

TOTAL 4 416 537-12

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

APPENDIX C

(See page 71)

NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME DURING 1960-61

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-185 26.4.60	M/s. Shalimar Tar Products Ltd., Calcutta	1.5.60 to 30.4.61	Bitumen Felts for Waterproofing and Damp-proofing (IS: 1322-1959)	1 000 yd	Rs 2.00 per unit, with a minimum of Rs 3 000 for production during a calendar year
CM/L-186 26.4.60	M/s. P. S. G. & Sons' Charity Industrial Institute, Peelamedu, Coimbatore	do	Three-phase Induction Motors, from 1 HP to 10 HP (IS: 325-1959)	1 HP	15 nP
CM/L-187 26.4.60	M/s. Indian Cable Co. Ltd., Calcutta	do	Paper-Insulated Lead-Sheathed Cables for Electricity Supply (Working Voltages Up to and Including 11 kV) (IS: 692-1957)	100 yd or 100 m	25 nP per 100 yd or 27.5 nP per 100 m
CM/L-188 27.4.60	M/s. Bharat Starch and Chemicals Ltd., Yamuna Nagar (Distt. Ambala)	15.5.60 to 14.5.61	i) Maize Starch for Use in the Cotton Textile Industry (IS: 1184-1957) ii) Edible Maize Starch (Corn Flour) (IS: 1005-1957)	1 ton	25 nP per unit, with a minimum of Rs 2 000-00 for production during a calendar year
CM/L-189 27.4.60	M/s. Gautam Electric Motors Pvt. Ltd., New Delhi	do	Three-phase Induction Motors from 1 HP to 5 HP (IS: 325-1959)	1 HP	15 nP
CM/L-190 25.5.60	M/s. The Indian Turpentine and Rosin Co. Ltd., Bareilly (U.P.)	1.6.60 to 31.5.61	Rosin (Gum Rosin) (IS: 553-1955)	100 maunds	Rs 1.50

APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME DURING 1960-61 — Contd

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-191 25.5.60	M/s. Hindustan Wire Products Ltd., Patiala	15.6.60 to 14.6.61	Hard-Drawn Copper Solid Circular Conductors (IS: 282-1951)	1 ton	Re 1.00
CM/L-192 30.5.60	M/s. The Asiatic Chemical Industries, Calcutta	do	Zinc Chloride, Technical (IS: 701-1955)	1 metric tonne	Rs 10.00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-193 30.5.60	M/s. Kaspipur Company Ltd., Calcutta	do	Bitumen Felts for Waterproofing and Damp-proofing (i) Fibre Base Type 2 Grade I (ii) Hes-sian Base Type 3 Grade I (IS: 1322-1959)	1 000 yd	Rs 2.00 per unit, with a minimum of Rs 3 000-00 for production during a calendar year
CM/L-194 30.5.60	M/s. Enco Plywood and Sawmill Industries, Siliguri	15.6.60 to 14.6.61	Commercial (Common) and Moisture-Proof Plywood (IS: 303-1951)	100 sq ft	Nil (Contribution to the Plywood Industry Voluntary Contribution Fund would continue to be made to the Development Wing, Ministry of Commerce & Industry)
CM/L-195 30.5.60	M/s. Western India Plywood Ltd., Baliapatam	do	Lead-Acid Storage Batteries for Motor Vehicles, Light Duty (IS: 395-1959)	do	do
CM/L-196 30.5.60	M/s. Bharat Battery Mfg Co. Ltd., Calcutta	do		1 battery	12.5 nP per unit for the first 30 000 batteries or part thereof with a minimum of Rs 2 500-00
CM/L-197 30.5.60	M/s. Kwaliti water-proof Mfg. Co., Delhi	1.7.60 to 30.6.61	Water-Proof Packing Paper made from 60 g Kraft Paper (IS: 293-1951)	1 roll of 100 yd	6.5 nP per unit for the 30 001st battery and over 6.5 nP with a minimum of Rs 1 000-00 for production during a calendar year

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd.**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-198 14.6.60	M/s. Bando Plywood Works, Calcutta	16.6.60 to 15.6.61	Tea-Chest Plywood Panels (IS: 10-1953)	100 sq ft	Nil (Contribution to the Plywood Industry Voluntary Contribution Fund would continue to be made to the Development Wing, Ministry of Commerce & Industry)
CM/L-199 15.6.60	M/s. Bharat Pulverising Mills Pvt. Ltd., Madras	1.7.60 to 30.6.61	BHC Water Dispersible Powder Concentrates (IS: 562-1958)	1 ton	Rs 2-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-200 15.6.60	do	do	DDT Dusting Powders (IS: 564-1955)	do	Rs 2-00
CM/L-201 15.6.60	do	do	DDT Water Dispersible Powder Concentrates (IS: 565-1955)	do	Rs 5-00
CM/L-202 15.6.60	do	do	BHC Dusting Powder (IS: 561-1958)	do	Re 1-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-203 15.6.60	M/s. Mahalakshmi Glass Works Private Ltd., Bombay	do	Aerated Water Glass Bottles (IS: 1107-1957)	1 gross	25 nP per unit, with a minimum of Rs 1 500-00 for production during a calendar year
CM/L-204 28.6.60	M/s. Jaipur Metals and Electricals Ltd., Jaipur	15.7.60 to 14.7.61	Copper Rods for Boiler Stay Bolts and Rivets (Revised) (IS: 288-1960)	1 ton	Rs 3-00
CM/L-205 20.7.60	M/s. Kaira District Co-operative Milk Producers' Union Ltd., Anand (W.R.)	1.8.60 to 31.7.61	Milk Powder (Whole and Skim) (IS: 1165-1957)	1 ton	Rs 5-00 per unit, with a minimum of Rs 3 000-00 for production during a calendar year

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-206 20.7.60	M/s. Imperial Chemical Industries (India) Pvt. Ltd., Bombay	20.7.60 to 19.7.61	BHC Dusting Powder (IS: 561-1958)	1 ton	Re 1-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-207 20.7.60	M/s. Renown Biscuit Co., Bombay	1.8.60 to 31.7.61	Biscuits (Excluding Wafer Biscuits) (IS: 1011-1957)	1 ton	Rs 1-25
CM/L-208 29.7.60	M/s. Bengal Chemical and Pharmaceutical Works Ltd., Calcutta	15.8.60 to 14.8.61	Naphthalene (IS: 539-1955)	1 ton	Rs 2-00
CM/L-209 29.7.60	M/s. Thaker Engineering Corporation, Cannanore (Kerala State)	do	Three-Phase Induction Motors (IS: 325-1959)	1 HP	15 nP
CM/L-210 29.7.60	M/s. Amritlal Harjivandas and Co., Bombay	1.9.60 to 31.8.61	Bare Annealed Copper Wire (IS: 396-1953)	1 ton	Rs 5-00
CM/L-211 25.8.60	M/s. Indian Tube Co. (1953) Ltd., Calcutta	do	Steel Tubes for Bicycle Handle Bars (IS: 625-1955)	1 ton	Rs 3-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-212 25.8.60	M/s. Cassava (India), Calcutta	do	Tea-Chest Metal Fittings (IS: 10-1953)	1 set (consisting of 12 pieces)	1 nP per unit with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-213 25.8.60	M/s. Plywood Manufacturers Co-operative Society Ltd., Calcutta	do	Tea-Chest Plywood Panels (IS: 10-1953)	100 sq ft	Nil. (Contribution to the Plywood Industry Voluntary Contribution Fund would continue to be made to the Development Wing, Ministry of Commerce & Industry)

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE NO.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-214 25.8.60	M/s. Albion Plywood Ltd., Calcutta	1.9.60 to 31.8.61	Commercial (Common) and Moisture-Proof Plywood (IS: 303-1951)	100 sq ft	Nil (Contribution to the Plywood Industry Voluntary Contribution Fund would continue to be made to the Development Wing, Ministry of Commerce & Industry) Re 1-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year 12-5 nP per 1 000 yd 13-5 nP per 1 000 m
CM/L-215 25.8.60	M/s. Tata-Fison Private Ltd., Agra (U.P.)	15.9.60 to 14.9.61	BHC Dusting Powders (IS: 561-1958)	1 ton	
CM/L-216 25.8.60	M/s. Fort Gloster Industries Ltd., Calcutta	1.9.60 to 31.8.61	Rubber-Insulated Cables and Flexible Cords for Electric Power and Lighting (250 & 660V Grade only) (IS: 434-1953)	1 000 yd or 1 000 m	
CM/L-217 31.8.60	M/s. Tata-Fison Private Ltd., Calcutta	15.9.60 to 14.9.61	DDT Water Dispersible Powder Concentrates (IS: 565-1955)	1 ton	Rs 5-00
CM/L-218 31.8.60	M/s. Dalmia Cement (Bharat) Ltd., P.O. Dalmiapuram, (Madras State)	15.9.60 to 14.9.61	Ordinary Portland Cement (IS: 269-1958)	1 000 tons	Rs 12-00
CM/L-219 31.8.60	M/s. Motor and Machinery Manufacturers Ltd., Calcutta	do	Three-Phase Induction Motors, 1 HP to 25 HP (IS: 325-1959)	1 HP	15 nP
CM/L-220 31.8.60	M/s. Warden and Co. Private Ltd., Bombay	do	Water-Proof Packing Paper (IS: 293-1951)	1 roll of 100 yd	6-5 nP per unit, with a minimum of Rs 1 000-00 for production during a calendar year

132

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE NO.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-221 31.8.60	M/s. Hind Tin Industries, Calcutta	15.9.60 to 14.9.61	18-Litre Square Tins (IS: 916-1958)	1 tin	‡ nP per unit for the first 200 000 units with a minimum of Rs 1 000-00 for production during a calendar year ‡ nP per unit for the next 300 000 units ‡ nP per unit for the 500 001st unit and over 12-5 nP per 1 000 yd 13-5 nP per 1 000 m 15 nP
CM/L-222 16.9.60	M/s. Industrial Supplies Corporation, Bombay	1.10.60 to 30.9.61	Rubber-Insulated Cables for CTS 250V Grade (IS: 434-1953)	1 000 yd or 1 000 m	
CM/L-223 16.9.60	M/s. Prabhat Electric Equipment Corporation, Bombay	do	Three-Phase Induction Motors Up to 10 HP (IS: 325-1959)	1 HP	
CM/L-224 16.9.60	M/s. Swaraj Plywood Works, Kottayam, (Kerala State)	do	Tea-Chest Plywood Panels (IS: 10-1953)	100 sq ft	Nil (Contribution to the Plywood Industry Voluntary Contribution Fund would continue to be made to the Development Wing, Ministry of Commerce & Industry) do
CM/L-225 16.9.60	M/s. Veneer Mills Pvt. Ltd., Tinsukia, Assam	do	Dye-Based Fountain Pen Inks (Blue, Green and Red) (IS: 1221-1957)	1 gallon	10 nP
CM/L-226 16.9.60	M/s. Sulekha Works Ltd., Calcutta	do	Three-Phase Induction Motors Up to 5 HP (IS: 325-1959)	1 HP	15 nP
CM/L-227 16.9.60	M/s. P. Govindaraj & Sons Pvt. Ltd., Madras	1.10.60 to 30.9.61			

133

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-228 16.9.60	M/s. Republic Engineering Corporation Ltd., Calcutta	1.10.60 to 30.9.61	Bicycle Bottom Bracket Adjustable Cups (IS: 1132-1958)	1 gross	70 nP per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-229 16.9.60	do	do	Bicycle Bottom Bracket Locking Nuts (IS: 1134-1958)	do	50 nP per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-230 16.9.60	M/s. Bengal Chemical & Pharmaceutical Works Ltd., Calcutta	do	Coal-Tar Disinfectant Fluids (IS: 1061-1957)	1 000 gallons	Rs 15-00 per unit, with a minimum of Rs 1 875-00 for production during a calendar year
CM/L-231 27.9.60	M/s. Bharat Pulverising Mills Pvt. Ltd., Bombay	15.10.60 to 14.10.61	BHC Dusting Powders (IS: 561-1958)	1 ton	Re 1-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-232 17.10.60	M/s. Assam Plywood Products, Dibrugarh (Factory at Kakojan), Assam	1.11.60 to 31.10.61	Tea-Chest Plywood Panels (IS: 10-1953)	100 sq ft	Nil (Contribution to the Plywood Industry Voluntary Contribution Fund would continue to be made to the Development Wing, Ministry of Commerce & Industry)
CM/L-233 18.10.60	M/s. Great Eastern Cutlery Works, Calcutta	do	Pruning Knives, Hooked and Curved (IS: 619-1955)	1 dozen	40 nP per unit, with a minimum of Rs 500-00 for production during a calendar year

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-234 18.10.60	M/s. Hind Galvanizing & Engg. Co. Private Ltd., Howrah	1.11.60 to 31.10.61	Drums for Paints (IS: 442-1951)	1 drum	1 nP per unit for the first 500 000 units, with a minimum of Rs 5 000-00 for production during a calendar year
CM/L-235 18.10.60	M/s. Vegetable Soap Works, Calcut	do	Toilet Soap (IS: 284-1951)	1 ton	1 nP per unit for production beyond 500 000 units
CM/L-236 18.10.60	M/s. Republic Engineering Corporation Ltd., Calcutta	1.11.60 to 31.10.61	Bicycle Bottom Bracket Fixed Cups (IS: 1133-1958)	1 gross	50 nP per unit for the first 3 000 units with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-237 18.10.60	M/s. Stoneware Pipes (Madras) Ltd., Trivellore	do	Salt-Glazed Stoneware Pipes and Fittings (IS: 651-1955)	1 ton	25 nP per unit for 3 001st unit and above
CM/L-238 28.10.60	M/s. Research Chemical Laboratories, Bangalore	15.11.60 to 14.11.61	Ferro-Gallo Tannate Fountain Pen Ink (0.1% Iron Content) (IS: 220-1959)	1 gallon	70 nP per unit
CM/L-239 28.10.60	do	do	Dye-Based Fountain Pen Inks (Blue, Green, Red and Violet) (IS: 1221-1957)	1 gallon	50 nP per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-240 28.10.60	M/s. Research Chemical Laboratories, Madras	do	do	1 gallon	10 nP

APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME DURING 1960-61 — Contd

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-241 21.11.60	M/s. Bharat Pulverising Mills Pvt. Ltd., Bombay	1.12.60 to 30.11.61	BHC Water Dispersible Powder Concentrates (IS : 562-1958)	1 ton	Rs 2-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-242 21.11.60	do	do	DDT Dusting Powders (IS : 564-1955)	1 ton	Rs 2-00
CM/L-243 23.11.60	M/s. Hindustan Tin Works Pvt. Ltd., Gha-ziabad	do	18-Litre Square Tins (IS : 916-1958)	1 tin	‡ nP per unit for the first 200 000 units with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-244 28.11.60	M/s. Indian Plastics Ltd., Bombay	15.12.60 to 14.12.61	Phenol-Formaldehyde Moulding Powder (For General Purpose Mouldings) (IS : 1300-1959)	1 ton	‡ nP per unit for the next 300 000 units
CM/L-245 28.11.60	M/s. Tipco The Industrial Plastics Corpn. Ltd., Bombay	15.12.60 to 14.12.61	Phenol-Formaldehyde Moulding Powder (For General Purpose Mouldings) (IS : 1300-1959)	1 ton	‡ nP per unit for the first 300 000 units and over Rs 5-00 per unit for the first 300 units with a minimum of Rs 1 500-00 for production during a calendar year
CM/L-246 28.11.60	M/s. Research Chemical Laboratories, Madras	do	Ferro-Gallo Tannate Fountain Pen Ink (0-1% Iron Content) (IS : 220-1959)	1 gallon	Rs 3-00 per unit for the quantity above 300 units

APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME DURING 1960-61 — Contd

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-247 28.11.60	M/s. Associated Instrument Manufacturers (I) Pvt. Ltd., New Delhi	15.12.60 to 14.12.61	Instruments for Testing Pencil Lead (IS : 1375-1959): i) Transverse Strength Testing Machine ii) Apparatus for Determination of Wear of Ship iii) Apparatus for Determination of Friction of Slip iv) Blackness Indicator	1 machine 1 apparatus 1 apparatus 1 indicator	Rs 11-00 Rs 32-00 Rs 45-00 Rs 54-00
CM/L-248 19.12.60	M/s. Kaira District Cooperative Milk Producers' Union Ltd., Anand (W.R.)	20.12.60 to 19.12.61	Infant Milk Foods (IS : 1547-1960)	1 ton	Rs 5-00 per unit, with a minimum of Rs 3 000-00 for production during a calendar year
CM/L-249 19.12.60	M/s. Delton Cable Co., Delhi	1.1.61 to 31.12.61	PVC Cables and Cords (IS : 694-1960)	1 000 m	25 nP per unit, with a minimum of Rs 1 500-00 for production during a calendar year
CM/L-250 26.12.60	M/s. Krishnaveni Factory, Madras	do	Ferro-Gallo Tannate Fountain Pen Ink (0-1% Iron Content) (IS : 220-1959)	1 gallon	10 nP
CM/L-251 26.12.60	do	do	Dye-Based Fountain Pen Inks (Blue, Green, Violet and Red) (IS : 1221-1957)	1 gallon	10 nP
CM/L-252 26.12.60	M/s. Tata-Fison Private Ltd., Bombay	do	Copper Oxidechloride Water Dispersible Powder Concentrates (IS : 1507-1959)	1 tonne	Rs 5-00

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-253 26.12.60	M/s. Travancore Chemical and Manufacturing Co. Ltd., Manjummel, Alwaye	1.1.61 to 31.12.61	Copper Oxochloride Water Dispersible Powder Concentrates (IS: 1507-1959)	1 tonne	Rs 5-00
CM/L-254 26.12.60	M/s. Swastik Rubber Products Ltd., Poona	do	Rubber-Insulated Cables, VIR (Vulcanized Rubber Insulated) 250 & 660 Volts Grade (IS: 434-1953)	1 000 yd or 1 000 m	12.5 nP per 1 000 yd or 13.5 nP per 1 000 m
CM/L-255 29.12.60	M/s. Shree Ram Oil and General Mills, Gurgaon	do	Corn Flakes (IS: 1158-1957)	1 kg	1 nP per unit, with a minimum of Rs 500-00 for production during a calendar year Re 1-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year Rs 5-00
CM/L-256 29.12.60	M/s. Tata-Fison Pvt. Ltd., Cochin	15.1.61 to 14.1.62	Copper Oxochloride Dusting Powders (IS: 1506-1959)	1 tonne	do
CM/L-257 29.12.60	do	do	Copper Oxochloride Water-Dispersible Powder Concentrates (IS: 1507-1959)	1 tonne	do
CM/L-258 29.12.60	M/s. Boots Pure Drug Co. (India) Pvt. Ltd., Bombay	1.2.61 to 31.1.62	do	do	do
CM/L-259 13.1.61	M/s. Tin Printing and Metal Works Ltd., Delhi	15.1.61 to 14.1.62	18-Litre Square Tins (IS: 916-1958)	1 tin	‡ nP per unit for the first 200 000 units, with a minimum of Rs 1 000-00 for production during a calendar year ‡ nP per unit or the next 300 000 units ‡ nP per unit for the 500 001st unit and over

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-260 19.1.61	M/s. Chelpark Co (Private) Ltd., Madras	1.3.61 to 28.2.62	Ferro-Gallo Tannate Fountain Pen Ink (0.1 % Iron Content) (IS: 220-1959)	1 gallon	10 nP
CM/L-261 19.1.61	do	do	Dye-Based Fountain Pen Inks (Blue, Green, Violet, Black and Red) (IS: 1221-1957)	1 gallon	10 nP
CM/L-262 19.1.61	M/s. Indian Tube Company (1953) Ltd., Calcutta	1.2.61 to 31.1.62	Steel Tubes for Bicycle Seat Pillars (IS: 626-1955)	1 tonne	Rs 3-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-263 19.1.61	do	do	Steel Tubes for Pedal Assembly (IS: 628-1955)	1 tonne	do
CM/L-264 24.1.61	M/s. Enamelled Wires Pvt. Ltd., Bombay	26.1.61 to 25.1.62	Synthetic Enamelled Wire (IS: 1595-1960)	1 metric tonne	Rs 10-00 per unit, with a minimum of Rs 2 500-00 for production during a calendar year
CM/L-265 30.1.61	M/s. Sathe Biscuit & Chocolate Co. Ltd., Poona	15.2.61 to 14.2.62	Covering Chocolate (IS: 1163-1958)	1 kg	2 nP
CM/L-266 30.1.61	do	do	Cocoa Powder (IS: 1164-1958)	do	2 nP
CM/L-267 30.1.61	M/s. Devidayal (Sales) Pvt. Ltd., Bombay	1.2.61 to 31.1.62	BHC Dusting Powders (IS: 561-1958)	1 ton	Re 1-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-268 30.1.61	M/s. All India Medical Corp., Bombay	do	BHC Water Dispersible Powder Concentrates (IS: 562-1958)	do	Rs 2-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-269 30.1.61	M/s. Flintrock Products Pvt. Ltd., Bombay	1.2.61 to 31.1.62	DDT Water Dispersible Powder Concentrates (IS : 565-1955)	1 ton	Rs 5-00
CM/L-270 31.1.61	M/s. Kathiawar Metal and Tin Works Pvt. Ltd., Rajkot	15.2.61 to 14.2.62	18-Litre Square Tins (IS : 916-1958)	1 tin	‡ nP per unit for the first 200 000 units, with a minimum of Rs 1 000-00 for production during a calendar year ‡ nP per unit for the next 300 000 units ‡ nP per unit for the 500 001st unit and over Rs 3-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year Re 1-00
CM/L-271 10.2.61	M/s. Indian Tube Company (1953) Ltd., Calcutta	do	Steel Tubes for Bicycle Frames (IS : 623-1955)	1 tonne	
CM/L-272 10.2.61	M/s. Sahebgunge Electric Supply Co. Ltd., Calcutta	20.2.61 to 19.2.62	Hard-Drawn Aluminium and Steel-Cored Aluminium Conductors (IS : 398-1953)	1 ton	
CM/L-273 10.2.61	M/s. India Tar and Bitumen Products Private Ltd., Calcutta	15.2.61 to 14.2.62	Bitumen Felts for Waterproofing and Damp-Proofing, Type 3, Grade I (IS : 1322-1959)	1 000 yd	Rs 2-00 per unit, with a minimum of Rs 3 000-00 for production during a calendar year
CM/L-274 15.2.61	M/s. Sudhir Chemical Co., Bombay	1.3.61 to 28.2.62	Copper Oxychloride Dusting Powders (IS : 1506-1959)	1 tonne	Re 1-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-275 15.2.61	do	do	Copper Oxychloride Dispersible Powder Concentrates (IS : 1507-1959)	1 tonne	Rs 5-00

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-276 27.2.61	M/s. Devidayal (Sales) Pvt. Ltd., Bombay	1.3.61 to 28.2.62	DDT Dusting Powders (IS : 564-1955)	1 ton	Rs 2-00
CM/L-277 27.2.61	M/s. Standard Lamination, Calcutta	do	Tea-Chest Plywood Panels (IS : 10-1953)	100 sq ft	Nil (Contribution to the Plywood Industry Voluntary Contribution Fund would continue to be made to the Development Wing, Ministry of Commerce & Industry) Rs 5-00
CM/L-278 27.2.61	M/s. Aluminium Cables and Conductors (U.P.) Pvt. Ltd., Calcutta	1.3.61 to 28.2.62	All Aluminium Conductors (IS : 398-1953)	1 ton	
CM/L-279 27.2.61	M/s. Jawala Flour Mills, New Delhi	do	Maida, Grade I, (IS : 1009-1957)	1 metric tonne	40 nP per unit for the first 3 000 units 25 nP per unit for the 3 001st unit and above
CM/L-280 13.3.61	M/s. Jayshree Plywoods, Prop. Jayshree Tea and Industries Ltd., Calcutta	20.3.61 to 19.3.62	Tea-Chest Plywood Panels (IS : 10-1953)	100 sq ft	Nil (Contribution to the Plywood Industry Voluntary Contribution Fund would continue to be made to the Development Wing, Ministry of Commerce & Industry) 2 nP
CM/L-281 14.3.61	M/s. Sulekha Works Ltd., Calcutta	1.4.61 to 31.3.62	Blue-Black Superior Fluid Ink for Writing (IS : 222-1950)	1 litre	
CM/L-282 14.3.61	M/s. Zenith Fire Services, Bombay	do	Portable Chemical Fire Extinguisher, Type (IS : 933-1959)	1 piece	50 nP per unit, with a minimum of Rs 1 500-00 for production during a calendar year

**APPENDIX C — NEW LICENCES ISSUED UNDER ISI CERTIFICATION MARKS SCHEME
DURING 1960-61 — Contd**

LICENCE No.	NAME AND ADDRESS OF THE LICENSEE	PERIOD OF VALIDITY	ARTICLE (NUMBER OF RELEVANT INDIAN STANDARD)	UNIT	MARKING FEE PER UNIT
CM/L-283 14.3.61	M/s. Bharat Barrel & Drum Mfg. Co. Pvt. Ltd., Calcutta	14.61 to 31.3.62	Steel Drums (IS: 1549-1960)	1 drum	1 nP per unit for the first 500 000 units, with a minimum of Rs 5 000-00 for production during a calendar year ½ nP per unit for production beyond 500 000 units Rs 1-25
CM/L-284 24.3.61	M/s. Huns Dewan & Co., Bombay	15.4.61 to 14.4.62	Biscuits (Excluding Water Biscuits) (IS: 1011-1957)	1 ton	
CM/L-285 28.3.61	M/s. All India Medical Corporation, Bombay	do	BHC Dusting Powders (IS: 561-1958)	do	Re 1-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year
CM/L-286 28.3.61	do	do	DDT Dusting Powders (IS: 564-1955)	do	Rs 2-00
CM/L-287 28.3.61	M/s. Hindustan Breakfast Food Mfg. Factory, New Delhi	15.4.61 to 14.4.62	Corn Flakes (IS: 1158-1957)	1 kg	1 nP per unit, with a minimum of Rs 500-00 for production during a calendar year
CM/L-288 28.3.61	M/s. Dr. Writer's Chocolates and Canning Co., Bombay	do	Macaroni, Spaghetti and Vermicelli (IS: 1485-1959)	1 kg	4 nP per unit, with a minimum of Rs 500-00 for production during a calendar year
CM/L-289 30.3.61	M/s. Devidayal (Sales) Private Ltd., Bombay	do	BHC Water Dispersible Powder Concentrates (IS: 562-1958)	1 ton	Rs 2-00 per unit, with a minimum of Rs 1 000-00 for production during a calendar year

APPENDIX D

(See page 71)

**ARTICLES COVERED BY STANDARD MARKS SPECIFIED
DURING 1960-61**

Sl. No.	PRODUCT/CLASS OF PRODUCT	NO. AND TITLE OF THE RELEVANT INDIAN STANDARD	NO. AND DATE OF THE GAZETTE NOTIFICATION
1.	Paper Insulated Lead Sheathed Cables for Electricity Supply	IS: 692-1957 Paper Insulated Lead Sheathed Cables for Electricity Supply	SO 1126 dated 7.5.60
2.	Bitumen Felts for Water-Proofing and Damp-Proofing	IS: 1322-1959 Bitumen Felts for Water-Proofing and Damp-Proofing	SO 1126 dated 7.5.60
3.	Edible Maize Starch (Corn Flour)	IS: 1005-1957 Edible Maize Starch (Corn Flour)	SO 1128 dated 7.5.60
4.	Maize Starch for Use in the Cotton Textile Industry	IS: 1184-1957 Maize Starch for Use in the Cotton Textile Industry	SO 1128 dated 7.5.60
5.	Commercial (Common) and Moisture-Proof Plywood	IS: 303-1951 Commercial (Common) and Moisture-Proof Plywood (<i>Tentative</i>)	SO 1420 dated 4.6.60
6.	Zinc Chloride, Battery and Technical Grades	IS: 701-1955 Zinc Chloride, Battery and Technical Grades	SO 1420 dated 4.6.60
7.	Aerated Water Glass Bottles	IS: 1107-1957 Aerated Water Glass Bottles	SO 1571 dated 25.6.60
8.	*Wrought Aluminium and Aluminium Alloys for Utensils	IS: 21-1959 Wrought Aluminium and Aluminium Alloys for Utensils (<i>Second Revision</i>)	SO 1814 dated 23.7.60
9.	Milk Powder (Whole and Skim)	IS: 1165-1957 Milk Powder (Whole and Skim)	SO 1864 dated 30.7.60
10.	Tea-Chest Metal Fittings	IS: 10-1953 Plywood Tea-Chests (<i>Revised</i>)	SO 2205 dated 10.9.60
11.	18-Litre Square Tins	IS: 916-1958 18-Litre Square Tins	SO 2205 dated 10.9.60
12.	Steel Tubes for Bicycle Handle Bars	IS: 625-1955 Bicycle Handle Bars (<i>Tentative</i>)	SO 2207 dated 10.9.60
13.	Bicycle Bottom Bracket Adjustable Cup	IS: 1132-1958 Bicycle Bottom Bracket Adjustable Cup	SO 2318 dated 24.9.60

*Consequent upon the revision of IS: 21-1953, the Standard Mark was revised.

APPENDIX D—Contd

ARTICLES COVERED BY STANDARD MARKS SPECIFIED DURING 1960-61

Sl No.	PRODUCT/CLASS OF PRODUCT	NO. AND TITLE OF THE RELEVANT INDIAN STANDARD	NO. AND DATE OF THE GAZETTE NOTIFICATION
14.	Bicycle Bottom Bracket Locking Nut	IS : 1134-1958 Bicycle Bottom Bracket Locking Nut	SO 2318 dated 24.9.60
15.	Coal Tar Disinfectant Fluids, Black and White	IS : 1061-1957 Coal Tar Disinfectant Fluids, Black and White	SO 2431 dated 8.10.60
16.	*Rectified Spirit	IS:323-1959 Rectified Spirit (Revised)	SO 2430 dated 8.10.60
17.	Salt-Glazed Stoneware Pipes and Fittings	IS : 651-1955 Salt-Glazed Stoneware Pipes and Fittings	SO 2610 dated 29.10.60
18.	Bicycle Bottom Bracket Fixed Cup	IS : 1133-1958 Bicycle Bottom Bracket Fixed Cup	SO 2610 dated 29.10.60
19.	PVC Cables and Cords	IS : 694-1960 PVC Cables and Cords for Electric Power and Lighting for Working Voltages Up to and Including 650 Volts to Earth (Tentative, Amended)	SO 2957 dated 10.12.60
20.	Phenol-Formaldehyde Moulding Powder (For General Purpose Moulding)	IS : 1300-1959 Phenol-Formaldehyde Moulding Powder (For General Purpose Moulding)	SO 2957 dated 10.12.60
21.	i) Transverse Strength Testing Machine ii) Apparatus for Determination of Wear of Slip iii) Apparatus for Determination of Friction of Slip iv) Blackness Indicator	IS : 1375-1959 Black Lead Pencils do do do	SO 2957 dated 10.12.60 do do do
22.	Infant Milk Foods	IS : 1547-1960 Infant Milk Foods	SO 3121 dated 31.12.60
23.	Copper Oxychloride Water Dispersible Powder Concentrates	IS : 1507-1959 Copper Oxychloride Water Dispersible Powder Concentrates	SO 29 dated 7.1.61
24.	Corn Flakes	IS : 1158-1957 Corn Flakes	SO 31 dated 7.1.61
25.	Copper Oxychloride Dusting Powders	IS : 1506-1959 Copper Oxychloride Dusting Powders	SO 31 dated 7.1.61
26.	Steel Tubes for Bicycle Seat Pillars	IS : 626-1955 Bicycle Seat Pillars (Tentative)	SO 229 dated 28.1.61

*Consequent upon the revision of IS: 323-1952, the Standard Mark has been revised.

APPENDIX D—Contd

ARTICLES COVERED BY STANDARD MARKS SPECIFIED DURING 1960-61

Sl No.	PRODUCT/CLASS OF PRODUCT	NO. AND TITLE OF THE RELEVANT INDIAN STANDARD	NO. AND DATE OF THE GAZETTE NOTIFICATION
27.	Steel Tubes for Bicycle Pedal Assembly	IS : 628-1955 Bicycle Pedal Assembly (Tentative)	SO 229 dated 28.1.61
28.	Enamelled High-Conductivity Annealed Round Copper Wire	IS : 1595-1960 Enamelled High-Conductivity Annealed Round Copper Wire (Synthetic Enamel)	SO 279 dated 4.2.61
29.	Covering Chocolate	IS:1163-1958 Covering Chocolate	SO 338 dated 11.2.61
30.	Cocoa-Powder	IS:1164-1958 Cocoa-Powder	SO 338 dated 11.2.61
31.	Steel Tubes for Bicycle Frames	IS: 623-1955 Bicycle Frames (Tentative)	SO 433 dated 25.2.61
32.	Maida	IS: 1009-1957 Maida	SO 482 dated 4.3.61
33.	Blue Black Superior Fluid Ink for Writing	IS: 222-1950 Blue Black Superior Fluid Ink for Writing	SO 617 dated 25.3.61
34.	Foam Type Fire Extinguishers	IS: 933-1959 Portable Chemical Fire Extinguishers, Foam Type	SO 617 dated 25.3.61
35.	Steel Drums for Paints	IS: 1549-1960 Steel Drums and Kegs (Galvanized and Ungalvanized)	SO 617 dated 25.3.61
36.	Macaroni, Spaghetti and Vermicelli	IS: 1485-1959, Macaroni Spaghetti and Vermicelli	SO 774 dated 8.4.61

APPENDIX E

(See page 81)

ISO RECOMMENDATIONS AND IEC PUBLICATIONS

ISO Recommendations

1. ISO/R 2-1951 Designation of the Direction of Twist in Textile Yarns¹
2. ISO/R 31 Part III-1960 Quantities and Units of Mechanics
3. ISO/R 31 Part IV-1960 Quantities and Units of Heat
4. ISO/R 55-1957 Specification for Seedlac²
5. ISO/R 56-1957 Specification for Shellac³
6. ISO/R 57-1957 Specification for Bleached Lac⁴
7. ISO/R 90-1959 Hermetically Sealed Metal Food Containers
8. ISO/R 92-1959 Definition of Side (Left or Right) of Spinning Machinery
9. ISO/R 93-1959 Cylindrical Sliver Cans
10. ISO/R 94-1959 Spindle Gauges for Ring-Spinning and Ring-Doubling Frames
11. ISO/R 95-1959 Rings for Ring-Spinning and Ring-Doubling Frames for 'C' Travellers
12. ISO/R 96-1959 Rings for Ring-Spinning and Ring-Doubling Frames for 'C' Travellers (Non-Reversible)
13. ISO/R 97-1959 Rings for Ring-Spinning and Ring-Doubling Frames for Ear-shaped Travellers
14. ISO/R 98-1959 Diameters of Drafting Rollers for Cotton, Wool, Spun Silk and Staple Fibre
15. ISO/R 104-1959 Ball and Roller Bearings — Boundary Dimensions
16. ISO/R 105 (Parts 1 to 24)-1959 Tests for the Colour Fastness of Textiles⁵⁻²⁴:
 - Part 1: Tests for the Colour Fastness of Textiles (First Series) General Principles of Testing, Section 10, Fastness of Dyes⁵
 - Part 2: Tests for the Colour Fastness of Textiles (First Series) Grey Scale for Assessing Change in Colours⁶
 - Part 3: Tests for the Colour Fastness of Textiles (First Series) Grey Scale for Assessing Staining⁷
 - Part 4: Tests for the Colour Fastness of Textiles (First Series) Acid Spotting⁸
 - Part 5: Tests for the Colour Fastness of Textiles (First Series) Alkali Spotting⁹
 - Part 6: Tests for the Colour Fastness of Textiles (First Series) Bleaching with Hypochlorite¹⁰
 - Part 7: Tests for the Colour Fastness of Textiles (First Series) Bleaching Peroxide¹¹
 - Part 8: Tests for the Colour Fastness of Textiles (First Series) Carbonizing with Aluminium Chloride¹²
 - Part 9: Tests for the Colour Fastness of Textiles (First Series) Carbonizing with Sulphuric Acid¹³
 - Part 10: Tests for the Colour Fastness of Textiles (First Series) Acid Chlorination¹⁴
 - Part 11: Tests for the Colour Fastness of Textiles (First Series) Light: Daylight¹⁵
 - Part 12: Tests for the Colour Fastness of Textiles (First Series) Mercerizing¹⁶
 - Part 13: Tests for the Colour Fastness of Textiles (First Series) Metals in the Dyebath: Chromium Salts
 - Part 14: Tests for the Colour Fastness of Textiles (First Series) Metals in the Dyebath: Iron and Copper
 - Part 15: Tests for the Colour Fastness of Textiles (First Series) Organic Solvents¹⁷

APPENDIX E — Contd

ISO Recommendations

- Part 16: Tests for the Colour Fastness of Textiles (First Series) Potting¹⁸
- Part 17: Tests for the Colour Fastness of Textiles (First Series) Pressing: Hot Pressing¹⁹
- Part 18: Tests for the Colour Fastness of Textiles (First Series) Rubbing²⁰
- Part 19: Tests for the Colour Fastness of Textiles (First Series) Soda Boiling²¹
- Part 20: Tests for the Colour Fastness of Textiles (First Series) Stoving²²
- Part 21: Tests for the Colour Fastness of Textiles (First Series) Washing: Hand Washing²³
- Part 22: Tests for the Colour Fastness of Textiles (First Series) Water²⁴
- Part 23: Tests for the Colour Fastness of Textiles (First Series) Sea Water²⁵
- Part 24: Tests for the Colour Fastness of Textiles (First Series) Water Spotting²⁶
17. ISO/R 106-1959 Light Metal Rivets for Shipbuilding — Nominal Diameters, Rivet Hole Diameters and Clearances
18. ISO/R 107-1959 Light Metal Rivets for Shipbuilding — Rivet Heads
19. ISO/R 108-1959 Weaving Looms — Definition of Side (Left or Right)
20. ISO/R 109-1959 Weaving Looms — Working Width
21. ISO/R 110-1959 Paper Cones for Yarn Winding (Cross Wound). Taper 9°15'
22. ISO/R 111-1959 Paper Cones for Yarn Winding (Cross Wound). Taper 4°20'
23. ISO/R 112-1959 Paper Cones for Yarn Winding (Cross Wound). Taper 3°30'
24. ISO/R 113-1959 Ball and Roller Bearings. Accessories
25. ISO/R 117-1959 Plastics. Determination of Boiling Water Absorption of Plastics
26. ISO/R 118-1959 Plastics. Determination of Methanol-Soluble Water in Polystyrene
27. ISO/R 119-1959 Plastics. Determination of Free Phenols in Phenol-Formaldehyde Mouldings²⁷
28. ISO/R 120-1959 Plastics. Determination of Free Ammonia and Ammonium Compounds in Phenol-Formaldehyde Mouldings²⁸
29. ISO/R 123-1959 Sampling of Latex
30. ISO/R 124-1959 Determination of Total Solids of Latex
31. ISO/R 125-1959 Determination of Alkalinity of Latex
32. ISO/R 126-1959 Determination of Dry Rubber Content of Latex
33. ISO/R 127-1959 Determination of KOH Number of Latex
34. ISO/R 130-1959 Identification of Aircraft Control Circuits
35. ISO/R 132-1959 Determination of Resistance to Flex Cracking of Vulcanized Natural or Synthetic Rubber (De Mattia Machine)
36. ISO/R 133-1959 Determination of Resistance to Crack Growth of Vulcanized Natural or Synthetic Rubber (De Mattia Machine)
37. ISO/R 135-1959 Paper Vocabulary. Second Series of Terms
38. ISO/R 137-1960 Determination of Wool Fibre Diameter (Projection Microscope Method)²⁹
39. ISO/R 138-1960 Universal Yarn Count System³⁰
40. ISO/R 139-1960 Standard Atmospheres for Conditioning and for Determining the Physical and Mechanical Properties of Textiles³¹
41. ISO/R 141-1960 Pirns and Cross Winders. Definition of Side (Left or Right)
42. ISO/R 142-1960 Weaving Preparatory Machines. Definition of Side (Left or Right)
43. ISO/R 143-1960 Weft Pirns for Automatic Looms
44. ISO/R 144-1960 Reverse Bend Testing of Steel Wire³²
45. ISO/R 145-1960 Wrapping Test of Wire
46. ISO/R 146-1960 Calibration of Vickers Hardness Testing Machines
47. ISO/R 147-1960 Load Calibration of Testing Machines for Tensile Testing of Steel
48. ISO/R 148-1960 Beam Impact Test (V Notch) for Steel
49. ISO/R 149-1960 Modified Erichsen Cupping Test for Steel Sheet and Strip

APPENDIX E — Contd

ISO Recommendations

50. ISO/R 151-1960 Hatchway Beams. Marking
51. ISO/R 152-1960 Wooden Hatchway Covers. Marking
52. ISO/R 153-1960 Ordinary Glasses for Scuttles and Lights. Dimensions
53. ISO/R 154-1960 Marking of Rolled, Drawn and Extruded Products in Light Metals or in Light Alloys for Shipbuilding
54. ISO/R 155-1960 Limiting Values for the Adjustment of Centres for Transmission Pulleys
55. ISO/R 156-1960 Calibration of Brinell Hardness Testing Machines
56. ISO/R 161-1960 Pipes of Plastic Materials for the Transport of Fluids (External Diameters and Nominal Pressures). Part I: Metric Series
57. ISO/R 162-1960 Location of Recording Heads for Three Magnetic Sound Records on 35-mm Film and One Magnetic Sound Records on 17.5 mm Film
58. ISO/R 163-1960 Magnetic Striping of 16 mm Film Perforated Along Both Edges
59. ISO/R 164-1960 Composition of Aluminium Alloy Castings (Contents in Percent)**
60. ISO/R 165-1960 Flanging Test on Steel Tubes
61. ISO/R 166-1960 Drift Expanding Test on Steel Tubes
62. ISO/R 167-1960 Bend Test on Steel Tubes
63. ISO/R 170-1960 Shipbuilding Details. Anchor Chains, Stud Links (Common Links, Enlarged Links, End Links and Joining Shackles)

IEC Publications

1. Pub 34-2: 1960 Recommendations on Determination of Efficiency of Rotating Electrical Machinery (Excluding Machines for Traction Vehicles) Part II. 2nd ed.
2. Pub 43: 1960 Recommendations for Alternating Current Watthour Meters. 2nd ed.
3. Pub 48: 1961 Rules for Electric Traction Motors. 4th ed.
4. Pub 50(40): 1960 International Electrotechnical Vocabulary Group 40: Electro-Heating Applications. 2nd ed.
5. Pub 50(50): 1960 International Electrotechnical Vocabulary Group 50: Electro-chemistry and Electrometallurgy. 2nd ed.
6. Pub 51: 1960 Recommendations for Indicating Electrical Measuring Instruments and Their Accessories. 2nd ed.
7. Pub 52: 1960 Recommendations for Voltage Measurements by Means of Sphere Gaps (One Sphere Earthed). 2nd ed.
8. Pub 653-: 1960 Appendix III Particular Specification for Electric Mains-Operated Television Receiving Apparatus
9. Pub 67: 1960 Dimensions of Electronic Tubes and Valves — Fourth Supplement
10. Pub 68-1: 1960 Recommended Basic Climatic and Mechanical Robustness Testing Procedure for Components for Electronic Equipment — Part 1: General
11. Pub 68-2: 1960 Recommended Basic Climatic and Mechanical Robustness Testing Procedure for Components for Electronic Equipment — Part 2: Tests
12. Pub 72-2: 1960 Recommendations for the Dimensions and Output Ratings of Electric Motors, Part 2: Dimensions of Mounting Flanges for Electric Motors
13. Pub 103-1: 1960 Amendment 1 to Publication 103 (first edition 1959) — Recommendations for Aluminium Electrolytic Capacitors for General Purpose Application
14. Pub 117-2: 1960 Recommended Graphical Symbols, Part 2: Machines, Transformers, Primary Cells and Accumulators. 1st ed.
15. Pub 119: 1960 Recommendations for Polycrystalline Semiconductor Rectifier Stacks and Equipments. 1st ed.
16. Pub 120: 1960 Recommendations for Ball and Socket Couplings of String Insulator Units. 1st ed.

APPENDIX E — Contd

IEC Publications

17. Pub 121: 1960 Recommendations for Commercial Annealed Aluminium Electrical Conductor Wire. 1st ed.
18. Pub 123: 1961 Recommendations for Sound Level Meters. 1st ed.
19. Pub 124: 1960 Recommendations for the Rated Impedances and Dimensions of Loudspeakers

References

1. Corresponds and agrees with IS: 238-1952 Method for Determination of Twist in Cotton Yarn
2. Corresponds and agrees with IS: 17-1956 Bleached Lac (*Revised*)
3. Corresponds and agrees with IS: 16-1956 Shellac (*Revised*)
4. Corresponds and agrees with IS: 15-1956 Seedlac (*Revised*)
5. Corresponds and agrees with IS: 1688-1960 Procedure for Determination of Fastness of Dyestuffs
6. Corresponds and agrees with IS: 768-1956 Method for Evaluating Change in Colour
7. Corresponds and agrees with IS: 769-1956 Method for Evaluating Staining
8. Corresponds and agrees with IS: 968-1956 Method for Determination of Colour Fastness of Textile Materials to Acid Spotting
9. Corresponds and agrees with IS: 977-1956 Method for Determination of Colour Fastness of Textile Materials to Alkali Spotting
10. Corresponds and substantially agrees with IS: 762-1956 Method for Determination of Colour Fastness of Textile Materials to Hypochlorite Bleaching
11. Corresponds and agrees with IS: 763-1956 Method for Determination of Colour Fastness of Textile Materials to Peroxide Bleaching
12. Corresponds and agrees with IS: 982-1958 Method for Determination of Colour Fastness of Textile Materials to Carbonizing with Aluminium Chloride
13. Corresponds and agrees with IS: 978-1956 Method for Determination of Colour Fastness of Textile Materials to Carbonizing with Sulphuric Acid
14. Corresponds and agrees with IS: 967-1956 Method for Determination of Colour Fastness of Textile Materials to Acid Chlorination
15. Corresponds and agrees with IS: 686-1957 Method for Determination of Colour Fastness of Textile Materials to Daylight
16. Corresponds and agrees with IS: 979-1957 Method for Determination of Colour Fastness of Textile Materials to Mercerizing
17. Corresponds and agrees with IS: 688-1956 Method for Determination of Colour Fastness of Textile Materials to Organic Solvents
18. Corresponds and agrees with IS: 972-1956 Method for Determination of Colour Fastness of Textile Materials to Potting
19. Corresponds and agrees with IS: 689-1956 Method for Determination of Colour Fastness of Textile Materials to Hot Pressing
20. Corresponds and agrees with IS: 766-1956 Method for Determination of Colour Fastness of Textile Materials to Rubbing
21. Corresponds and agrees with IS: 973-1956 Method for Determination of Colour Fastness of Textile Materials to Soda Boiling
22. Corresponds and agrees with IS: 980-1957 Method for Determination of Colour Fastness of Textile Materials to Stoving
23. Corresponds and agrees with IS: 687-1956 Method for Determination of Colour Fastness of Textile Materials to Hand Washing
24. Corresponds and agrees with IS: 767-1956 Method for Determination of Colour Fastness of Textile Materials to Water
25. Corresponds and agrees with IS: 690-1958 Method for Determination of Colour Fastness of Textile Materials to Sea Water
26. Corresponds and agrees with IS: 976-1956 Method for Determination of Colour Fastness of Textile Materials to Water Spotting

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 ISI include the preparation, promotion and general adoption, at the national and international levels, of standards relating to materials, commodities, structures, practices and operations. 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 ISI. The Executive Committee (EC), appointed by 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, subscription from members, including State Governments, and from sale of standards.

In the preparation of standards, 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 EC or the seven Division Councils of ISI, namely the Agricultural and Food Products Division Council (AFDC), the Building Division Council (BDC), the Chemical Division Council (CDC), the Electrotechnical Division Council (ETDC), the Engineering Division Council (EDC), the Structural and Metals Division Council (SMDC) and the Textile Division Council (TDC).

Proposals for formulating Indian Standards are normally entertained from the members of ISI. Every proposal is scrutinized first by the appropriate Division Council, and when approved, the Division Council assigns

- 27 & 28. Corresponds and agrees with IS: 867 (Part II)-1959 Methods of Sampling and Test for Phenolic Moulding Materials, Part II
29. Corresponds and substantially agrees with IS: 744-1955 Method for Determination of Mean Fibre Diameter of Raw Wool
30. Corresponds and agrees with IS: 1315-1959 Method for Determination of tex Number (Or Count) of Cotton Yarn
31. Corresponds and agrees with IS: 196-1950 Atmospheric Conditions for Testing
32. Corresponds and substantially agrees with IS: 1716-1960 Method for Reverse Bend Testing of Steel Wire
33. Corresponds and substantially agrees with IS: 617-1959 Aluminium and Aluminium Ingots and Castings for General Engineering Purposes (*Revised*)

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 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 ISI committees. The staff in the ISI Directorate co-ordinates the works 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

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.

Certification Marking

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 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.

The Governments of Madras, Orissa, Punjab, Uttar Pradesh and West Bengal and the Administrations of Andaman & Nicobar, Himachal Pradesh and Delhi have issued directions to all heads of departments under them to give preference to certified goods in their purchase programmes.

International Sphere

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. ISI is also active at the executive levels of ISO and IEC. It is an elected member of the Governing Council of the former and the Committee of Action of the latter. Dr. Lal C. Verman, Director, ISI, was the elected Vice-President of ISO from 1949 to 1955.

Membership

Membership of ISI is open to all organizations and persons interested in the objects of ISI. There are three categories of membership, namely (a) Sustaining Members and Sustaining Members (Associates), (b) Ordinary Members, and (c) 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 ISI can join as Ordinary Members. Persons serving on ISI Councils and Committees are classed as Committee Members. Depending upon the class of membership, members have the right to apply for

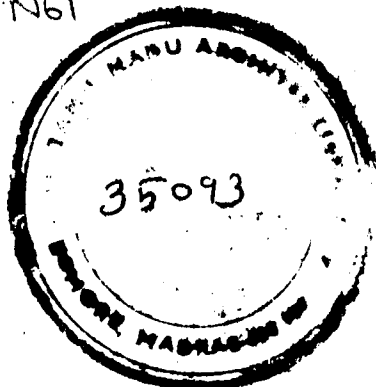
information on standardization both in India and abroad, to give evidence at appropriate technical levels and continuously to receive information concerning the development of standards on subjects in which they are interested.

Publications

The Indian Standards Institution has so far issued about 1 800 Indian Standards pertaining to different fields of industrial and commercial activity in the country. A complete list of Indian Standards with a brief description of each is given in the ISI Handbook of Publications, which also includes an exhaustive alphabetical index of all the subjects covered by Indian Standards. Other features of the Handbook cover general information about organizational set-up of ISI; information relating to ISI Certification Marking Scheme, together with a classified list of manufacturers using ISI Certification Mark; and technical committees as well as publications of the International Organization for Standardization and International Electrotechnical Commission. The Handbook is priced Rs 3-00 per copy.

The ISI Bulletin, published every two months, contains articles, research papers and other information relating to standardization both in India and abroad. The annual subscription of the Bulletin is Rs 10-00 but it is supplied free of charge to the Institution's members of all categories.

Besides, ISI issues every month a 'STANDARDS NEWS' giving information about the new and revised Indian Standards, amendments and errata published during the preceding month. It also includes the similar information about British and other standards for which ISI holds sales agencies.



amounts to Rs 3 259 156.22 as against an expenditure of Rs 3 235 678.22. The income includes Rs 250 000.00 as an *Ad hoc* Government Grant and Rs 253 661.22 being Industries Contribution and Delegation Fees for excursions, etc, towards Annual Group Meetings of International Electrotechnical Commission and International Organization for Standardization held in India during the year. These meetings were held for the first time in India and were a great success. In addition to this, we have to take into account the indirect contribution made by way of expenses incurred by members of the committees from Government and private organizations to attend meetings of ISI within India and abroad. Such invisible contribution for the year under report is estimated at Rs 700 000. The membership subscription and the sale of Indian Standards, for the past many years, as indicated below, reflect an increasing interest by the industry in the activities of the Institution and in making use of these standards:

Year	Membership Subscription	Sale of Indian Standards
1947-48	95 600	—
1948-49	115 900	—
1949-50	153 100	600
1950-51	186 600	4 300
1951-52	204 300	20 000
1952-53	221 100	28 500
1953-54	242 300	29 250
1954-55	268 600	33 500
1955-56	301 900	52 800
1956-57	335 700	70 800
1957-58	368 700	82 000
1958-59	398 800	444 000
1959-60	431 500	192 500
1960-61	600 800	290 000
		366 000

International Activities — As in the past, ISI continued to play its part in the work of standardization at international level, as a member of both the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). The Institution served as an elected member of the Governing Council of ISO and the Committee of Action of IEC and participated actively in the work of 61 technical committees of ISO and all the technical committees of IEC; and continued to hold the Secretariats of the following Technical Committees and Sub-committees:

- ISO/TC 50 Lac,
- ISO/TC 56 Mica,
- ISO/TC 88 Pictorial Marking of Handling Instructions for Goods,

- ISO/TC 30/SC 1 Measurement of Liquid Flow in Open Channels,
- ISO/TC 34/SC 7 Spices and Condiments, and
- IEC/TC 43 Fans.

The Director of the Institution continued to serve as the Chairman of the Planning Committee (PLACO) of ISO, member of ISO Standing Committee for the Study of Scientific Principles of Standardization (STACO) and ISO Liaison Officer for ECAFE.

XXV IEC General Meeting — During the period under review, at the invitation of the Indian Standards Institution, the International Electrotechnical Commission, held its XXV Annual Group Meetings in New Delhi from 31 October to 12 November 1960.

An All-India Reception Committee under the chairmanship of Shri M. Hayath, Chairman, Electrotechnical Division Council of ISI, was set up. Eighty-six organizations from the industry joined the Reception Committee and contributed a sum of Rs 160 751 to organize the meetings which was supplemented by a grant of Rs 250 000 from the Government of India.

Dr. S. Radhakrishnan, Vice-President of India, inaugurated the meetings on 31 October 1960 at Vigyan Bhavan. Shri Lal Bahadur Shastri, Minister for Commerce & Industry and President of ISI, was in the Chair. On the same day, the Sixth Charles le Maistre Memorial Lecture was delivered in Vigyan Bhavan by Prof. G. de Zoeton, Chairman of the National Committee of IEC in Netherlands, and was attended by over 350 delegates and observers. A present was given to Prof. Zoeton by the Vice-President of India at the inaugural function. At the same function, Dr. Radhakrishnan gave the 1960 K. L. Moudgill Prize of Rs 500 to Shri G. D. Joglekar of the National Physical Laboratory and the certificate of Fellowship of Standards Engineers Society of USA to Dr. Lal C. Verman.

In all, 266 delegates from 26 overseas countries and 154 delegates and observers from India, participated in 21 technical committees and sub-committees of IEC during this period. Besides the meetings of a score of technical committees and subcommittees (*see* p. 99), the Committee of Action, which is the Executive Body of IEC, met in two sessions. Apart from taking administrative and other policy decisions, the Committee decided to invite Shri M. Hayath, Chairman of ETDC (which is the Indian National Committee of IEC) to deliver the next Charles le Maistre Memorial Lecture during 1961 Annual General Meeting at Interlaken in Switzerland, and to appoint Shri S. N. Mukerji, Director, Government Test House and Chairman of ISI Electric Fans Sectional Committee as the Chairman of the new Technical Committee 43 Fans.

The IEC meetings brought to India a large number of distinguished engineers from almost all the industrially advanced countries. To take full advantage of their presence in India, the programme of the Conference was so arranged that the overseas delegates had many occasions to meet one another and Indian delegates informally outside the meeting rooms and also to visit many centres of technical and industrial activity in the country. Since appreciation of the historical background and cultural heritage of other