

1947
NEW ZEALAND

STANDARDS COUNCIL

(Department of Industries and Commerce)
ANNUAL REPORT FOR THE YEAR 1946-47

Presented to both Houses of the General Assembly by Leave

The Hon. A. H. NORDMEYER, Minister of Industries and Commerce.

SIR,—

I have the honour to submit herewith the annual report of the Standards Council for the year ended 31st March, 1947.

I have, &c.,
L. J. McDONALD,
Executive Officer.

REPORT

OBITUARY

The death of the Hon. D. G. Sullivan is recorded with profound regret. This opportunity is taken to pay a tribute to the late Minister, who was responsible for the establishment of the New Zealand Standards Institute and the passing of the legislation which brought it into being. His able direction and never-failing support of the Council and staff during the ten years he was responsible for the administration of the Institute have been deeply appreciated.

STANDARDS COUNCIL

With the passing of the war emergency period and the consequent return to normal procedure, the Standards Council has been reconstituted pursuant to the Standards Act, 1941, by the appointment of twenty-five members, representing the New Zealand Manufacturers' Federation, Associated Chambers of Commerce of New Zealand, New Zealand Federated Builders' and Contractors' Industrial Union of Employers, New Zealand Institute of Architects, New Zealand Institution of Engineers, New Zealand Institute of Chemistry, New Zealand Retailers' Federation, Federated Farmers of New Zealand, Municipal Association of New Zealand, National Council of Women, Women's Division of Federated Farmers of New Zealand, Dominion Federation of New Zealand Women's Institutes, New Zealand Federation of Labour, Commissioner of Works, Stores Control Board, Post and Telegraph Department, New Zealand Railways, Department of Industries and Commerce, and Council of Scientific and Industrial Research.

MEETINGS

During the year 122 meetings of standing committees were held, in addition to numerous *ad hoc* meetings and conferences.

STANDARD SPECIFICATIONS

Regular Standard Specifications.—Thirty-one regular standard specifications were adopted during the year, 5 relating to household commodities, 5 to electrical engineering, 5 to mechanical engineering, 2 to building construction, 4 to chemistry, 5 to the dairy industry, 3 to plumbing, 1 to the control of boardinghouses, and 1 to cost accounting terminology. Of these, 18 were British standards which were endorsed as New Zealand standard specifications, in four cases with local amendment. In addition, 5 revised British standards were adopted as revisions of the corresponding New Zealand standard specifications. Five amendments to existing standard specifications were also adopted. One regular standard specification, which was superseded by an emergency standard specification, was withdrawn during the year, bringing the total number of existing regular New Zealand standard specifications to 498.

Emergency Standard Specifications.—Nineteen emergency standard specifications were adopted during the year, 8 relating to building construction and allied subjects, 8 to household commodities, 2 to primary industries, and 1 to the servicing of motor-vehicles. Two emergency standard specifications were revised, while amendments to 7 were also adopted. Ten were withdrawn during the year of which 8 were superseded by regular standard specifications, bringing the total number of existing New Zealand emergency standard specifications to 199.

Summary.—The year's work has thus increased the grand total of New Zealand standard specifications to 697. Details of the standard specifications adopted, revised, amended, and withdrawn during the year are shown in the Appendix hereto.

GENERAL

The increasing demands made upon the standards organization during the year reflect a growing appreciation of the value and importance of standardization by all sections of the community, including local authorities; industrial, commercial, and trading interests; primary producers; women's and workers' organizations; and other consumer interests, all of whom have frequently placed on record their appreciation of the value and advantage of the work of the standards organization. The year's work, as shown by the number of standard specifications issued, the number of standard specifications sold, the number of projects advanced in development, and the growing interest in the use of the Standard Mark, leaves no doubt that New Zealand is holding its place in comparison with other countries in this important sphere.

STANDARD MARK



Licences issued.—During the year 150 applications for licences to use the Standard Mark were received from applicants engaged in fourteen different industries. In the same period, 147 licences were issued, bringing the total number of licences issued since 1944 to 572, of which 7 have been cancelled, leaving 565 in existence at the end of the year. The 572 licences which have been issued were distributed over the following commodities; household furniture (452), footwear (37), motor-car cleaning (16), school-paper stationery (12), leather dress gloves (7), regenerated lubricating-oil (5), paints (4),

preservative pretreatment of timber (3), plywoods (3), inks (3), milking-machine rubberware (3), flushing-cisterns (2), creosote for the preservation of timber (2), salt-glazed-ware pipes (2), paua-shell jewellery and ornaments (2), soaps (2), flock (2), nylon tooth-brushes (2), precast concrete drainage pipes (1), precast concrete pressure pipes (1), earthenware roofing-tiles (1), lubricating-cup greases (1), fencing-wire (1), electric plugs and sockets and ceiling roses (1), fire-extinguishers (1), ratings and methods of test for electric heating elements (1), asbestos-cement products (1), joiners' glue (1), hearing-aid equipment (1), terrazzo work (1), and garden tools (1).

Registration of Additional Standard Marks.—In accordance with the provisions of section 9 of the Standards Act, 1941, the terms "New Zealand Standard," "N.Z. Standard," and "N.Z.S." have been registered as Standard Marks in all thirty-four classes of marketable commodities specified in the Trade-mark Regulations 1941, under the Patents, Designs, and Trade-marks Act, 1921-22, so that these terms may not now be used except under licence granted by the Minister of Industries and Commerce.

Inspection.—A procedure has been established for proper inspection and examination of commodities bearing the Standard Mark. In order to ensure that it will preserve its full validity as a warranty of quality and service, it is intended that this aspect of the administration should be carried out on a positive and constructive rather than on a negative and coercive basis. The objective will be to assist manufacturers and others concerned to work to standards of quality by drawing attention to features of commodities which show a trend towards departing from the requirements of the relevant standard specifications and to offer advice and guidance as to how such trends can be corrected, the approach being on the basis of the advantage to the individual business interests as well as to the country generally.

TECHNOLOGICAL STANDARDIZATION

Civil Engineering Sectional Committee

(One meeting)

Cement and Concrete Committee	..	..	..	..	One meeting.
Concrete Fencing-posts Committee	..	..	..	..	One meeting.
Wire Nails Sub-committee	..	..	..	..	One meeting.

Parent Committee.—The parent committee reviewed the work being carried out under its control, and examined and directed the circulation and action relating to 4 regular, 7 war emergency, and 2 draft British standards. It recommended 5 British standards for adoption as New Zealand standard specifications.

Conditions of Tender and General Conditions of Contract for Civil Engineering Works.—During the year the Committee recommended this standard code for adoption as a New Zealand standard specification. The standard code contains some seventy comprehensive clauses, set out in proper sequence and precise terms, which define the responsibilities of the parties to a contract. It will have the advantage of avoiding the loss of time, and the consequent economic loss, involved in the preparation of independent general conditions for each and every contract, and the necessity for the parties concerned to interpret and work to the same or similar conditions, expressed in different terminology and sequence. Instead, the standard code will permit contracts to be negotiated and completed according to an established, uniform set of general conditions, which can be cited and referred to in lieu of being stated verbatim in every case.

Hollow Concrete Blocks.—The Cement and Concrete Committee has drafted a standard specification for hollow load-bearing concrete masonry units, and the provisions of this specification are at present being circulated in draft form for examination and comment to the interested parties, including local authorities, architects, engineers, builders, and others concerned. The standard specification will establish requirements

in respect of dimensions, physical properties, and methods of sampling and testing, which are a necessary corollary to the design requirements incorporated in the Building Code.

Concrete Fencing-posts.—Work has continued on the formulation of a standard specification for concrete fencing-posts, and a draft specification has been completed to the stage where it has been necessary to carry out a series of tests on posts manufactured in different parts of the Dominion, in order to arrive at suitable methods of test and test requirements.

Precast Concrete Drainage Pipes.—Following upon comments received from affected interests as a result of their experience during the initial use of N.Z.S.S. E.112, Precast Concrete Drainage Pipes, an amendment has been issued to this standard specification in order to clarify the provisions relating to the test for crushing-strength.

Wire Nails.—A special sub-committee set up to formulate a New Zealand standard specification for wire nails has examined the corresponding British standard in the light of the comments received as a result of its circulation to affected interests. The project has been temporarily deferred, but will be further considered during the ensuing year.

Household Septic Tanks.—This standard specification will supplement the general requirements for septic tanks incorporated in the proposed New Zealand Standard Code of Plumbing and Drainage By-laws by establishing minimum requirements in respect of materials, construction, and design in relation to performance, for septic tanks for single-dwelling units, whether precast or constructed on the site.

Roadmaking Materials Sectional Committee

Road-binding Materials Committee .. .. .	..	..	..	..	One meeting.
Road Aggregates Committee .. .. .	..	..	..	..	One meeting.

Road-binding Materials.—The Road-binding Materials Committee at its inaugural meeting devoted its attention to the examination and consideration of the British and Australian standard glossaries of highway engineering terms, definitions of which, it recognized, were much needed in New Zealand. In addition, overseas standards for road-binding materials were grouped by the committee under the headings of tars, emulsions, asphalts, and cut-back asphalts, for determination of their suitability for adoption as New Zealand standard specifications. In all, the committee has under examination 14 British, 2 Australian, and 17 American standards. It is also studying reports of the current work of other standards bodies on the subject of road-binding materials.

Road Aggregates.—The Road Aggregates Committee is endeavouring to establish uniform grades for the various classes of roading aggregates, which would greatly reduce the multiplicity of specifications to which such aggregates are crushed, screened, and mixed, so long as suppliers are required to satisfy orders to the individual specifications of each separate authority. The establishment of uniform grades would therefore greatly simplify and facilitate the placing and supply of orders and correspondingly reduce the cost of aggregates.

Drawing Office Practice Sectional Committee

Engineering Drawing Practice Committee	One meeting.
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The Engineering Drawing Practice Committee recommended to its parent committee that the British standard for Engineering Drawing Practice (B.S. 308-1943) should be adopted as a New Zealand standard specification, subject to an amendment incorporating the Australian standard sizes for paper, which are better suited for photographic reproduction, and the addition of the corresponding Australian standard (C.Z-1) as a

supplement, because of its fuller detail which makes it especially suitable for teaching purposes. In recommending the adoption of two different standards for the same subject, the committee took cognizance of the fact that the British Standard sets out the basic principles in the form required by practising draughtsmen, while the Australian contains the detail required by students.

Mechanical Sectional Committee

(One meeting)

Fire-extinguishers Committee	Three meetings.
Motor-vehicle Servicing Committee	One meeting.

Parent Committee.—The parent committee reviewed the work being carried out under its control, and examined 28 British standards, 7 draft British standards, 6 amendment slips, 2 Australian standards, and 1 American standard. It also considered 6 projects submitted by the United Nations Standards Co-ordinating Committee—now reconstituted on a permanent basis as the International Organization for Standardization.

Tanks for Fresh Water Pressure Supply Systems.—This specification was recommended for adoption as a New Zealand standard specification, after a careful review by the Mechanical Sectional Committee, in the course of which the draft proposals were extensively amended. The necessity for a standard specification for these tanks is due to the fact that the functioning of the pressure systems depends upon air-pressure, which experience has shown to involve hazards that can be eliminated only if these tanks, so widely used in rural areas, are constructed to specifications which avoid excessive pressures in relation to design and construction.

Servicing of Motor-vehicles.—That the standard specification for definitions for use in motor-car cleaning and allied servicing has achieved its object of promoting understanding and agreement concerning what is meant by the various operations in servicing motor-vehicles is evidenced by the fact that the annual conference of the Retail Motor Trade Association recommended its members to use the Standard Mark to certify their adherence to the definitions laid down in the standard specification, which is now the basis of the prices fixed by the Price Tribunal for these services. During the year minor amendments were made to the specification as a result of experience of its initial use.

Fire-extinguishers.—As requests have been received for the extension of the existing standard specifications for portable chemical fire-extinguishers to cover new designs which have been evolved in Britain during the war years, the Fire-extinguishers Committee has carried out tests to ascertain the efficacy of these designs. The Committee has approved the principle of the gas-pressure-operated type of carbon-tetrachloride extinguisher, and has amended the existing standard specification accordingly. A draft British standard for the gas/water pressure type of extinguisher is under examination by the committee, and preliminary consideration had also been given to formulating standards for the air/foam and methyl-bromide types of extinguisher.

Electrical Sectional Committee

(One meeting)

Electrical Accessories and Appliances Committee	Two meetings.
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Parent Committee.—In addition to reviewing the work carried out under its supervision, the parent committee examined 2 draft British standards and 11 British, 4 Canadian, and 2 American standards, with a view to determining their suitability for adoption in New Zealand. Three of the British Standards were recommended for adoption as New Zealand standard specifications.

Resistance-welding Apparatus.—The preparation of a standard specification for this apparatus was requested by manufacturing interests in order to dispose of the confusion caused by lack of uniformity in methods of calculating the electrical ratings

and other factors. Proposals have been drafted covering the design and performance of resistance-welding machines, including such features as rating of output, high-voltage tests, composition of electrodes, welding-pressures, and switchgear.

Household Electrical Appliances.—With the object of establishing minimum requirements in respect of safety, durability, efficiency, and economy in operation, as a basis for the certification of electrical appliances sold to the public, draft standard specifications have been completed for irons and toasters. Good progress has also been made with the preparation of specifications for jugs, kettles, immersion heaters, grillers, and cooking-ranges.

Radio Industry Sectional Committee

Radio Components Committee	..	..	..	..	One meeting.
Radio Performance Committee	..	..	..	..	One meeting.

Radio Components.—At its inaugural meeting the Radio Components Committee gave initial consideration to 5 British, 23 American, 5 Canadian, and 2 Australian standards. Because radio components are obtained from both America and Britain, it was found necessary to examine the standards from both these countries, with a view to adopting those that are suitable for New Zealand requirements, and further information is being sought from the British Standards Institution concerning the progress of its collaboration with the American Standards Association in this regard.

Radio Performance.—At its first meeting the Radio Performance Committee gave preliminary consideration to 8 British, 1 Australian, and 2 American standards for radio performance, which were circulated to affected interests for comment. Attention was also given to the preparation of a standard code of radio symbols. In addition, in response to a request from the International Organization for Standardization, the committee considered the extent to which New Zealand could participate in the formulation of an international standard for the measurement of radio interference.

Insulator Pins Committee

(One meeting)

This committee is preparing a standard specification for thread gauges for all types of insulators and insulator spindles in general use in communications, signals, and low- and high-tension power transmission and distribution systems. The specification will be based mainly on the British standards for telegraph materials and insulators.

Road Traffic Sectional Committee

(One meeting)

Traffic Signals.—In the light of changes of methods of traffic control since the standard specification was drafted in 1941, the Road Traffic Sectional Committee reviewed the proposed standard code of practice for roads traffic control signals, the issue of which was withheld due to the exigencies of war emergency conditions. This standard code establishes uniform practice relating to the use of light signals for the control and regulation of traffic. It sets out for the guidance of local authorities the conditions which warrant the introduction of signals, together with the principles which should govern their location and design, and will secure uniformity in the use of such systems to the benefit of motor-vehicle drivers and pedestrians.

Chemical Sectional Committee

(One meeting)

Inks Committee	..	..	..	..	..	One meeting.
Glues Committee	..	..	..	..	..	One meeting.

Parent Committee.—In addition to reviewing the work being carried out under its direction, the parent committee examined 4 draft British standards and 3 British standards. One of these was recommended for adoption as a New Zealand standard

specification, while the others are to receive further consideration. The committee also co-operated with the Dairy Products and Requisites Committee in drafting a standard for alkaline cleaners.

Inks.—The Inks Committee reviewed N.Z.S.S. E.188, Fountain Pen, Writing, and Record Inks, and, in the light of comments received, made some amendments to clarify its provisions. It also recommended that the emergency standard specifications for inks should be converted to regular New Zealand standard specifications.

Joiners' Glue.—In accordance with the recommendations mentioned in last year's report, an emergency standard specification for joiners' glue was issued in substitution for N.Z.S.S. 184, Joiners' Glue (being B.S. 745-1937), now withdrawn. This was necessary in order that indigenous timber could be used as test wood instead of the exotic test wood originally specified, which is no longer available in this country. This emergency specification in its present form will meet the urgent need for a specification for glue, which is necessary to make the standard specification for household furniture fully effective in this respect.

Gas Industry Sectional Committee

(One meeting)

This committee set up a Gas Cooking and Heating Appliances Committee to prepare New Zealand standard specifications for gas-cookers, gas combination ranges, and gas-fires, including flues and thermostat controls for such appliances. It also instituted a Gas Water-heating Appliances Committee to develop standard specifications for gas-coppers and gas water-heaters, including their manufacture and installation, and a Gas Meters and Service Cocks Committee to formulate similar specifications for gas-service cocks and gas-meters, including caps and linings for meter connections. Besides this, the parent committee examined and directed to appropriate committees 9 draft British standards, 8 British standards, and 8 American standards. Also it recommended 2 of the British standards for adoption as New Zealand standard specifications.

Camelback Retread Rubber Committee

(One meeting)

This committee has drafted a code of practice for the use of camelback retread rubber for tire rebuilding, which will also incorporate quality grades and a range of standard sizes of camelback. In support of the request for the development of this project, the manufacturing interest concerned stressed the advantage that would result from the establishment of a uniform range of designs and profiles that would eliminate redundant types and sizes. Moreover, it was pointed out that tires retreaded with a satisfactory grade of camelback, that would be assured by the specification, would give a mileage of up to 10,000, whereas, apart from defects in tires or processing, a low-grade camelback retread may not give a mileage of more than 3,000.

Optical Glass Committee

(One meeting)

At the request of the Department of Health this committee was instituted to examine the British standard for protective filters and the American standards for protective goggles, helmets, and shields for welders, to determine their suitability for adoption as New Zealand standards.

Statistical Methods of Quality Control Advisory Panel

Statistical Methods of Quality Control.—In accordance with the recommendations of the Statistical Methods of Quality Control Advisory Panel, referred to in the report of last year, an explanatory brochure has been drafted to elucidate statistical methods of quality control under New Zealand conditions. Following the publication of this

brochure it is intended also to set up a standing committee to consider the adoption of the American Standards Z1.1-1941 and Z1.2-1941 for statistical methods of quality control, in order that New Zealand may derive the advantage of its application already enjoyed by the United Kingdom, Canada, Australia, and South Africa, where it is regarded as a most valuable instrument of the production engineer, which promotes industrial efficiency and economy in substantial degree.

Stretchers Committee

(One meeting)

The Stretchers Committee is engaged in revising the New Zealand Emergency Standard Specification (N.Z.S.S. E.1) for Ambulance Stretchers, with a view to its reissue in the normal series of New Zealand standard specifications.

BUILDING STANDARDS

Building Code Sectional Committee

Building Code Technical Committee	..	..	..	Ten meetings.
Structural Welding Committee	..	..	..	Two meetings.
Fire-prevention Committee	..	..	..	Two meetings.
Theatre By-law Sub-committee	..	..	..	Five meetings.
Timber Building Code Committee	..	..	..	Three meetings.

Masonry Buildings of Bearing-wall Construction.—During the year the formulation of a standard by-law for masonry buildings of bearing-wall construction was completed and, as soon as these provisions have been edited, they will be issued as Part X of the New Zealand Standard Code of Building By-laws. This part of the Standard Code will establish minimum requirements for buildings in which the structural loads are carried by walls of unit masonry, including brick, natural stone, and solid or hollow concrete blocks.

The Code establishes minimum requirements in relation to materials, including the quality of cement, mortar, bricks, concrete blocks, and metal bonding, and the workmanship relating to the use of these materials. It also incorporates the necessary provisions in respect of foundations, including their thickness, reinforcement, and form of construction, according to the nature of the ground and site, and the load the building is intended to carry. An over-all height limit is specified for this form of construction, together with a maximum unsupported length of bearing walls between adequate cross-walls. The thickness of all bearing walls is specified in relation to their height and the load to be carried, while special provisions relate to reinforced-concrete bands designed to strengthen the building against earthquake stresses. Further provisions refer to openings in bearing walls, which stipulate their maximum lengths and minimum distance from intersecting walls and from each other in relation to the height of the opening in each case. The code also establishes requirements relating to brick veneer and brick and timber structures, which will supplement provisions already contained in Part IX, Light Timber Construction. The Masonry Code, furthermore, provides for the use of hollow-block construction and continuous cavity walls, as well as for arbitrarily reinforced concrete in place of unit masonry.

Theatre By-law.—A special sub-committee has been set up to undertake the formulation of a separate standard by-law relating to the design and construction of theatres and similar places of public assembly. This by-law will, within practical limits, ensure public safety and health by establishing minimum requirements relating to all aspects of theatre-construction, including materials, design, fire-prevention, fire-fighting equipment, electrical installations, lighting, including emergency lighting, sanitation, ventilation, linings, furnishings, and anti-panic precautions. The sub-committee has made good progress, and is now proceeding with the formulation of draft proposals.

Steelwork.—The final editing of the Steelwork Code, referred to in last year's report, has proceeded during the year, with the result that this code, which will constitute Part XI of the Standard Code of Building By-laws, is now ready for submission to the Building Code Sectional Committee for its approval, as is also the related Standard Code of Practice for the Workmanship of Metal Arc Welding, which was completely reviewed by the Structural Welding Committee in the light of developments in welding practice during the period it was necessary to hold this project in abeyance.

Light Timber Construction.—As Part IX, Light Timber Construction, of the Standard Code of Building By-laws was issued in February, 1944, it was deemed advisable to seek from local authorities and other interested parties comments upon their experience of its use during the past three years. The comments received clearly showed that it had been of the utmost value to local authorities, architects, builders, and other interested parties. It was, however, found necessary to amend the provisions in several minor respects in order to meet various points raised in the comments. In addition, following upon the issue of an addendum to the National Grading Rules (N.Z.S.S. 169), which establishes grading requirements for *Pinus radiata* for building purposes, the Timber Building Code Committee is amending the Light Timber Building Code to prescribe the conditions under which this timber can be used to relieve the critical timber-supply position, while at the same time safeguarding the essential considerations of safety and durability.

Adoption of the Standard Code of Building By-laws.—At the close of the year fifty-five local authorities had adopted Parts I—VI of the Standard Code of Building By-laws as their own by-laws, while, of these, forty-four had also adopted Parts VII, VIII, and IX, the remaining eleven having the adoption of these last-mentioned three parts under consideration. In addition, a further twenty-five authorities have indicated that they are giving attention to the incorporation of the Standard Code in their by-laws.

With the issue of the Masonry and Steelwork Codes, referred to earlier in this report, the Standard Code of Building By-laws will establish a complete range of minimum requirements in respect of all forms of construction which are commonly used in New Zealand, in addition to further requirements in respect of such essential matters as means of egress and residential buildings. These parts of the Standard Code, together with the separate standard codes for boardinghouses (already issued), plumbing and drainage (recently completed), fire-prevention (nearing completion), and the separate standard specification for dwellinghouse-construction, will establish all the necessary code and by-law requirements to ensure that all building activity in the Dominion is carried out to adequate standards relating to durability, safety, health and amenities, and in accordance with principles that permit the most economic use of materials and labour without in any way hampering design.

The value of the Standard Code of Building By-laws to local authorities, and the pressure which exists for the extension and acceleration of this work, was well evidenced at the 1946 Municipal Conference, which passed remits urging that the formulation of the Standard Code should be proceeded with as a matter of urgency, and also that the by-law making powers available to Town Boards should be amended to permit them to adopt the Standard Code *in toto*. The adoption of this course in relation to Town Boards and Counties would enable all local authorities to avail themselves of the full advantages of the Standard Code, whereas it is at present available only to cities and boroughs, except that Town Boards and counties, which are not empowered to enforce its provisions, may use it for reference.

Measurement of Buildings Committee

(Seven meeting-)

Five further parts of the proposed Standard Method for the Measurement of Building Work were completed, relating to metal-work, brickwork, stone masonry work, carpentry work, and joinery work, which, together with the six parts completed during

the previous year, have been circulated in draft form for comment from affected interests. The comments already received confirm the value that will attach to the completed specification, which will provide a common basis for the estimation of costs and charges relating to building work.

Building Materials Sectional Committee

(One meeting)

Bituminous Building Materials Committee One meeting.

Parent Committee.—In addition to reviewing the work coming under its direction, the parent committee examined and directed the circulation of 21 British standards and 3 draft British standards to affected interests.

Bituminous Building Materials.—Proposals for a standard specification for these materials have been reviewed by a special committee set up during the year. Samples of saturants, coatings, and finished materials for coated roofings are being tested by the Dominion Laboratory according to the tests laid down by the American Society for Testing Materials in order to provide a basis for the quality requirements of the specification. The committee, which is also responsible for the development of standard specifications for bituminous building materials generally, is giving consideration to 1 draft British and 3 British standards covering tar pitches for building purposes, roofing-felts, damp-proof courses, and pitch and lake asphalt floorings.

Timber Sectional Committee

(One meeting)

Timber Preservation Committee One meeting.
 Joinery and Profiles Committee Two meetings.
 Profile Gauges Sub-committee Two meetings.
 Timber Ladders Committee One meeting.

Parent Committee.—In addition to reviewing the work carried out under its supervision, the parent committee examined 2 draft British standards and 2 British standards, but decided that they were unsuitable for adoption as New Zealand standards.

Timber Preservation.—In response to a request from the State Forest Service, the committee decided to obtain the necessary data for preparing a specification for the preservative materials already stipulated in N.Z.S.S. 202, Preservative Pre-treatment of Timber by the Cold Dipping Process. The committee also intends to make provision for the use of additional solvents.

Pressure Treatment.—The development of a scientifically based standard specification for the treatment of timber with preservatives applied by the pressure and "vacuum" methods has been deferred because further progress is dependent on the conclusions of research being carried out by the Plant Diseases Division of the Department of Scientific and Industrial Research. It is understood that the stage has been reached when conclusive tests can be made of the toxicity of the available preservatives when applied by various methods, and it is hoped that this will enable a standard specification to be formulated in the near future.

Timber Ladders.—The draft specification for timber ladders referred to in the last report has been considered by the parent committee and referred to the Timber Ladders Committee to be redrafted, in the light of comments from affected interests.

Profiles of Weatherboards, Flooring, and Matchlining.—The standard specification for profiles of weatherboards, flooring, and matchlining has been issued. The original draft standard has been amended to some extent by the Joinery and Profiles Committee, after consideration of the comments received from a circulation to some three hundred interests. The standard now defines rebated bevel back, rusticated, and rebated skew-cut weatherboards. The skew-cut weatherboard, which was provided for in Part IX,

Light Timber Construction, of the Standard Code of Building By-laws, effects an approximate saving of 33 per cent. of timber. The specification also defines tongue-and-grooved flooring of 1 in. nominal thickness in 4, 5, and 6 in. widths, and match-lining of $\frac{5}{8}$ in. nominal thickness in 4 and 6 in. widths. Still further substantial economies and increased production will result from the simplification of types of weatherboards, flooring, and matchlining, which will correspondingly reduce the number of different settings of cutter heads required for different runs, and the stocks timber-merchants are required to carry. The standard specification will have the further advantage of assisting building contractors to match weatherboards, flooring, and matchlining produced by different mills.

Profiles of Joinery and Mouldings.—This specification similarly simplifies the range of profiles for joinery and mouldings. It incorporates detailed requirements in respect of units for casement and double-hung windows, door-jambes, sills, architraves, cornices, dados, picture-moulds, scotias, half-rounds, and skirtings.

Templates for Profiles.—The Profiles Gauges Sub-committee is drafting a standard specification for templates and gauges to facilitate the production of profiles conforming to the relevant standard specifications. The sub-committee is working in close consultation with the Dominion Physical Laboratory, which gained valuable experience in designing gauges and other instruments for production control during the war years.

Asbestos Cement Sectional Committee

Asbestos Cement Roofing-sheets Committee One meeting.

This committee made minor amendments to the standard code of practice for the fixing of asbestos cement roofing-sheets, which has now been incorporated in N.Z.S.S. 282, Asbestos Cement Unreinforced Flat Sheets and Corrugated Sheets.

Paints and Coatings Sectional Committee

(Two meetings)

Paints and Coatings Executive Committee One meeting.

Parent Committee.—The Paints and Coatings Sectional Committee examined two British standards relating to lac, a consideration which also arose in connection with a United Nations Standards Co-ordinating Committee project for the unification of standards for this commodity. The committee also advised the Government Purchasing Standards Committee on the provisions of a specification for red-lead paint for structural steelwork, and directed a preliminary circulation of a proposed standard specification for spray painting to affected interests for comment.

Ready-mixed Paints.—Further serious deterioration in the supply of white lead necessitated reconsideration of the provisions of N.Z.S.S. E.32, Ready-mixed Paints for Finishing Coats for Woodwork (White and Light Tints). Finally it was decided to withdraw the existing specification and to replace it with a new specification (N.Z.S.S. E.229) in simplified and more effective form. Adherence to this standard specification ensures the most economic use of the limited supplies of raw materials. The economic importance and value of the standardization of paint, and paint materials, is evidenced by the fact that, if each dwellinghouse in the Dominion is painted at intervals of six years at a cost of, say, £60 a house, the total yearly expenditure would amount to approximately £4,280,000. If, however, through the use of inferior paint, each house has to be painted each three or four years, the approximate yearly expenditure would be increased to £8,560,000 and £6,420,000 respectively, involving a national loss of £2,140,000 to £4,280,000. Even if one-half of the houses were painted with inferior paint the loss would amount to between £1,070,000 and £2,140,000. Moreover, this still does not account for the cost of painting buildings other than dwelling houses.

Paints and Coatings Executive Committee.—The executive committee examined 16 Canadian Government purchasing standards and 2 American standards, and directed the circulation of those of interest to New Zealand to affected interests for comment.

Plumbing Sectional Committee

Plumbing By-laws Committee	..	..	..	..	Five meetings.
Plumbing Supplies Committee	..	..	..	..	Three meetings.

Plumbing By-laws.—The draft Standard Code of Plumbing and Drainage By-laws has been completed, but is to be placed before a conference of the Plumbing Sectional Committee and the City engineers before it is issued, in order to provide an opportunity for the engineers to discuss the Standard Code with the committee which formulated it, and so become acquainted with the provisions, before it is made available for adoption by local authorities.

Plumbing Supplies.—The Plumbing Supplies Committee examined 9 draft British standards, 29 British standards, 1 amendment to a British standard, and 1 draft Australian standard. Of the British standards examined, 10 were found to be unsuitable under New Zealand conditions, 16 were directed to be circulated to affected interests for comment, and 3 were recommended for adoption as New Zealand standard specifications.

Taps.—A draft standard specification for bib, pillar, hose, and globe taps and stop-taps, in sizes from $\frac{1}{2}$ in. to 1 in., was completed for circulation to affected interests.

Resealing Traps.—Comparative tests are at present being carried out with various types of resealing traps to determine the requirements which should be incorporated in an appropriate standard specification for citation in the Standard Code of Plumbing and Drainage By-laws.

Floats for Ball-cocks.—A standard specification is in course of preparation for copper and bakelite floats for ball-cocks, in connection with which practical tests are being carried out to establish the suitability of open-bottom bakelite floats.

Electric Hot-water Systems.—Following a request from a metropolitan local authority, a standard specification is being prepared for electric hot-water systems, which will make provision for size and construction of hot-water cylinders and cold-water storage-tanks, the quality and efficiency of materials and components, and the design of the system, including the placing of elements, thermostats, inlet, and outlet pipes. Consideration will also be given to the British standards relating to electric water-heaters, recommended practice for the installation of hot-water services, and for copper cylinders.

Ceramics Sectional Committee

(Two meetings)

Sanitary Ware Committee	One meeting.
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Parent Committee.—In addition to reviewing the work being carried out under its direction, the Parent committee examined 7 draft British standards and 11 British standards.

Salt Glazed-ware Pipes.—As a result of comments received, the parent committee approved an amendment to N.Z.S.S. 356, Salt Glazed-ware Pipes.

Sanitary Ware Committee.—The Sanitary Ware Committee examined 4 draft British standards and 4 British standards. It also completed original draft New Zealand standard specifications for urinal stalls, lavatory basins, and fireclay sinks for circulation to affected interests. These draft specifications establish minimum requirements for materials, dimensions, construction, and essential design features which affect the utility of this equipment.

COMMERCIAL STANDARDIZATION

Cost Accounting Terminology Committee

(Three meetings)

The Standard Code of Cost Accounting Terminology is completed and ready for issue. The code is a dictionary of 755 cost-accounting terms, alphabetically arranged, which it reduces to 204 standard definitions. Of the remaining 551 headings, 379 are terms which have been commonly used, by different people, to express the meanings now interpreted by the 204 definitions adopted in the Code, while the balance of 172 are included as cross-references. The 379 terms in common use, referred to above, are necessarily included, but are defined under the preferred terms by cross-references, with the object of finally establishing the general use of the preferred terms as standard cost accounting terminology.

The New Zealand Society of Accountants, the Incorporated Institute of Accountants of New Zealand, the Australasian Institute of Cost Accountants, the Institute of Cost and Works Accountants (England), the National Association of Cost Accountants, New York, and several other similar bodies, in addition to the major commercial, industrial, and administrative institutions and organizations in the Dominion, have lent their full support to the development of the Code and have freely expressed the opinion that when it is published it will be of the utmost value.

Footwear Costing Committee

(One meeting)

At the request of the Footwear Plan Industrial Committee, with the support of the Price Tribunal, preliminary consideration was given by this committee to the standardization of forms, items, and the presentation of cost factors for the purpose of analysis of footwear-production costs on a comparative basis.

Publication Sizes and Format Committee

(One Meeting)

This committee was set up to consider the development of a standard specification for the sizes and format of Government publications in the first instance, and to consider the extension of this project to publications generally.

Hospital Temperature Charts Committee

(One Meeting)

Following a request from the Department of Health, this committee was set up to develop a standard specification for clinical temperature charts used in hospitals. Specimen charts were obtained from all Hospital Boards, and, after examining these, the committee circulated a draft standard specification covering a standard chart to the interests concerned. The object of uniformity in temperature charts is to ensure clarity and ease of reading, choice of dimensions suited to existing filing systems, suitable substance of paper, and economies in printing costs.

Government Purchasing Standards Committee

(Five meetings)

Government Purchasing Standards.—At the request of the Stores Control Board, a Government Purchasing Standards Committee was set up to develop a special series of Government purchasing specifications when regular standard specifications are not available. Besides this, it has examined 11 New Zealand standard specifications and 5 proposed standard specifications to determine their suitability specifically for Government purchasing. It has also examined 3 British, 2 Australian, and 3 American

standards. In each case the committee has obtained reports from special panels of technical officers appointed from the Departments most interested in the particular items. Priority has been given to electrical goods and housing materials. It is intended that standard specifications published in the Government Purchasing Series should, in due course, be referred to representative committees for review and inclusion in the regular series of New Zealand standard specifications. The development of standard specifications as a basis for Government purchasing is in accord with the recommendations of the British Commonwealth Standards Conference held in 1946, and is also recognized as a cardinal principle of public purchasing, as shown in the report for the year 1937-38.

Naval Victualling Stores.—The Navy Department has also requested the preparation of standard specifications for victualling stores for the Royal New Zealand Navy, and a sub-committee has been set up to review the existing Navy specifications, in relation to New Zealand conditions, with a view to including them in the Government Purchasing Series. This course of action corresponds with action that is being taken in other countries, notably the U.S.A., to avoid the inconvenience, serious delays, and general loss which result from the use of a separate series of specifications by each defence authority, which, in turn, are frequently immaterially different from civil specifications for the same commodities.

DOMESTIC COMMODITY STANDARDIZATION

Furniture

Household Furniture Committee	One meeting.
Household Furniture Executive Committee	Two meetings.
Government Office Furniture Committee	Three meetings.

Household Furniture.—To enable the Standard Mark to be used on children's cots and play-pens, the Household Furniture Committee extended the provisions of the Standard Specification to cover these items. It also made some minor amendments to render some of the detail provisions more effective.

Government Office Furniture.—Acting under the sponsorship of the Public Service Commission, the Government Office Furniture Committee has drafted a standard specification for desks for Government offices, which is to be circulated to all Departments for comment. Attention has also been given to the question of an improved chair design that will be conducive to better posture, reduced fatigue, and increased efficiency.

Textiles Sectional Committee

(One meeting)

Textiles Testing Committee	One meeting.
Underwear Sizes Committee	Two meetings.

Parent Committee.—The Textiles Sectional Committee considered the reports of the committees working under its direction, and reviewed two draft British standards. A proposal from the International Organization for Standardization to formulate an international definition for rayon was also considered, and a sub-committee was set up to report concerning the definitions current in New Zealand and to advise the originating body.

Textiles Testing.—Advice has been received from the International Organization for Standardization of proposals, made by the American Standards Association, for international agreement on methods for testing textiles, taking the American Society for Testing Materials' methods as a basis. Comments prepared by the appropriate sub-committee have been forwarded to the International Organization for Standardization expressing New Zealand's views concerning American Society for Testing Materials'

methods. Pending the adoption of international standards, necessarily a long-range project, the Committee has carried on its work on the proposed New Zealand standard specification, which is based on Canadian and Australian standard methods.

Underwear Sizes.—In response to continued representations from the National Council of Women, the Dominion Federation of Women's Institutes, the Women's Division of the Federated Farmers, and the Retailers' Federation, further attention has been given to this subject. With the co-operation of the Manufacturers' Federation, an Underwear Sizes Committee was instituted, and at two meetings has considered proposed sizes based upon the corresponding British standards. The manufacturing representatives on the committee undertook to afford generous assistance by obtaining manufacturers' measurements, through the respective trade groups, and to collaborate in the examination of such data, in relation to data available from other countries, including Britain, U.S.A., and France, for the purpose of formulating provisions of a suitable New Zealand specification.

Household Tinware Utensils Committee

(One meeting)

Household Tinware Utensils.—The standard specification for household tinware utensils, referred to in the last report, has been issued, establishing minimum requirements for eight classes of tinsplate and galvanized-iron household utensils, including cooking-utensils, kitchen tidies, ashpans, milk-billies, strainers, calf-feeders, colanders, watering-cans, meat-safes, and babies' baths. The specification consists of a series of tables setting out in a handy form for reference the particulars of the construction, gauge of metal, reinforcement, dimensions and capacity for each item in its appropriate class, the terms used having been defined in a preliminary section. Utensils bearing the Standard Mark as a certification of conformance to the specification will thus carry a warranty that they are made from sheet metal of adequate gauge, and are so constructed as to be sufficiently durable to avoid the necessity for unduly frequent replacement, an important economic consideration both to householders and the country generally.

Pressed Steel Enamelware.—A Pressed Steel Household Utensils Committee has been established to prepare standard specifications for pressed steel frying-pans, and enamel hollowware such as kitchen sinks, pie-dishes, and saucepans, which will include provisions relating to dimensions and capacities, nature and thickness of the base metal, quality of the enamel coating, method of attachment of handles, and other essential factors.

Mincers, Bean-slicers, and Juice-extractors.—A committee has been set up to deal with a request for the preparation of standard specifications for mincers, bean-slicers, and juice-extractors for domestic use. To obtain data for preliminary proposals a detailed technical study has been made comparing British, American, and locally manufactured appliances in relation to performance, essential design features, construction and finish. Again in this case the manufacturing interests concerned have displayed commendable initiative and interest in the development of this specification as warranty of service and satisfaction to the public.

Carpet Sweepers Committee

(One meeting)

The Carpet Sweepers Committee has recommended a draft standard specification for carpet sweepers for circulation to the affected interests for examination and comment. The draft specification lays down minimum requirements for the materials, component parts, and construction of carpet sweepers, allowing the use of several alternative types of material and construction.

Foodstuffs

Meat Grades Committee	One meeting.
Bread Approvals Committee	Two meetings.
Bread Approvals Panel	One meeting.

Meat Grades.—The Meat Grades Committee approved a new, more distinctive marking for lamb, and also made some minor amendments relating to detailed provisions of the standard specification.

Bread Approvals.—The Bread Approvals Committee continued to give consideration to applications for the approval of special breads not provided for in the standard specification.

Footwear Sectional Committee

(One meeting)

Footwear Survey Committee	Three meetings.
Gumboots Committee	Two meetings.

Parent Committee.—In addition to considering the reports of the committees working under its direction, the parent committee reviewed the standard specifications for footwear. As might be expected with such a comprehensive set of specifications for a basic commodity, further experience in applying these specifications revealed the need for further consideration of their provisions.

The most significant amendments made to the specifications provided for the classification of footwear within each general class, according to type of construction and the nature of the upper leathers and linings used. For example, there are separate specifications for the two main classes of women's shoes—one for the cemented, machine-sewn and fair-stitched types, which, apart from the method of sole attachment, fall into one general class, and one for welted shoes, which are a distinctly separate class. It follows that the respective numbers of the two specifications distinguish these two general classes. Within each class, in turn, the different types are now distinguished by letter symbols, as is also the classification according to the class of outside leather and linings used in the uppers.

Further amendments were made to the specifications to permit the machine-sewn type of construction in men's chrome lace boots, men's and youths' chrome Albert slippers, and children's sandals; the fair-stitched method in women's walking-shoes and men's chrome lace shoes; the riveted method in men's chrome lace shoes; and the screwed and pegged method in men's shooters and ferntight boots. Also amendments were included to provide for patent and yearling leathers in women's walking-shoes, and glacé kid in infants' shoes, in addition to some further detailed amendments of a general nature. Finally, appendices were added to the specifications stipulating test requirements for threads and for fibre-board used for stiffeners, and the emergency standard specifications for infants' shoes and nurses' shoes were withdrawn and reissued as regular standard specifications.

Survey of Children's Feet.—A committee representative of footwear and last manufacturers, orthopædic specialists, the Government Statistician, the Shoe and Leather Research Association, Footwear Plan Industrial Committee, and the Standards Institute was instituted to act in an advisory capacity in connection with the conduct of the survey of children's feet mentioned in last year's report, and to check and review the data obtained from stage to stage.

The survey is being undertaken on five thousand children between the ages of two and fifteen years, in order to obtain measurements of a true cross-section of children's feet that will be as representative as possible. The children are being selected from cities, towns, and country districts in proportion to the population in those districts. Also they are being selected from the school roll in such a manner as to ensure random selection. The children between the ages of two and four years are being measured at Plunket clinics, with the co-operation of the Plunket Society and the assistance of its nurses.

Eleven measurements are taken on each foot. Four of these are taken on a device, built especially for the survey, by the Dominion Physical Laboratory, in order to equip the operators with apparatus that would enable them to take these measurements with the most facility and the least degree of error. The four measurements taken on this device are the length of the foot, the length from heel to ball, from heel to little toe, and the width of the ball joint. Five circumference measurements are being taken by tape, these being the toes, the joint, the instep, the waist, and the heel. The depth of the ball is being taken with another instrument built by the Dominion Physical Laboratory, and a caliper is used to measure the width of the heel. An outline of each foot is being drawn, in order to provide a visual basis for determining the shape of the foot.

Progressively, as the information is obtained, it is correlated by the Government Statistician, in order to provide a basis for analysis and graphs, with the object of showing the proportionate relationship of the different measurements. With the completion of the survey a statistical analysis will be made of the data obtained, with a view to ascertaining the groups of measurements which can properly be brought within each size-range. In this way it should be possible to establish a range and gradation of sizes, and the basic measurements for each, which are necessary to ensure correct fitting, this being the object of the survey.

Gum Boots.—Further progress was made with standard specifications for gum boots, women's, girls', and children's city gum boots, lace-up rubber boots, goloshes. Draft standard specifications are at present being circulated to some three hundred affected interests in New Zealand and overseas for comment. They provide for a general service quality and a super quality of rubber footwear.

PRIMARY INDUSTRIES STANDARDS

Butchers' Knives Committee	..	..	..	..	Two meetings.
Bull Chains Committee	..	..	..	..	One meeting.
Produce Sacks Committee	..	..	..	..	One meeting.
Produce Sacks Sub-committee	..	..	..	..	One meeting.
Woolpacks Committee	..	..	..	..	One meeting.

Butchers' and Slaughtermen's Knives.—Manufacturers of butchers' and slaughtermen's knives in New Zealand have requested the preparation of a standard specification for skinning, boning, and steak knives, and have supplied much of the necessary technical information. Generally, the specification will cover the quality of steel, grinding, and polishing of the blade, security of the handle, and the finish of the knife.

Bull Chains.—Following complaints from farmers about the quality of many bull chains on the market, steps have been taken to prepare a standard specification. Some samples of chain have been tested, and the test results have been used to assist the formulation of draft provisions covering the tensile strength and durability of welded rod chains of two strengths. Difficulty experienced in obtaining essential information has delayed further progress.

Garden Tools.—Shovels, spades, rakes, and hoes are covered by standard specifications issued during the year. These specifications set out a range of standard sizes and types, and lay down requirements for materials and manufacture, in addition to the other factors which determine the efficiency and durability of the tools. This project was sponsored, and its development actively assisted, by a manufacturing interest to safeguard the reputation of the industry, by establishing a reliable basis for the certification of its products that would maintain the confidence and goodwill of the buying public.

Vitamin A and D Oils for Animal Feeding.—The standard specification for vitamin A and D oils for animal feeding was completed and issued during the year. Its preparation was undertaken at the request of the New Zealand Farmers' Union, which was concerned at the low quality of much of the oil being marketed, and desired a reliable basis for the purchase of oils according to grade. The standard specification

will ensure that the various preparations which conform to its requirements will be of effective strength. It will thus assist farmers and protect manufacturers of genuine products from unfair competition. The specification also makes provision for a concentrated solution of calciferol in oil which is used for the prevention of rickets in stock, but should only be so used under direct veterinary advice because of its high calciferol content.

Produce Sacks.—A meeting of the Produce Sacks Committee was held to consider representations from primary producers urging that the standard specification be amended to provide for a larger sack than 46 in. by 23 in. The committee found that the jute-supply position would not allow any immediate change to be made, and set up a sub-committee to investigate and explore the possibility of amending the specification to provide for a sack of different dimensions. The sub-committee has decided to have practical trials carried out using 43 in. by 23 in., 46 in. by 24 in., and 44 in. by 25 in. sacks as soon as jute can be released to make up the test sacks.

Woolpacks.—Following a recommendation of the Waterfront Industry Control Commission that the size and weave of woolpacks should be standardized, the Woolpacks Committee held a meeting to consider the resumption of work on a standard specification, but it was decided to defer the project indefinitely in view of the critical jute-supply position.

Dairy Sectional Committee

Dairy Products and Requisites Committee	Three meetings.
Milking-machine Committee	One meeting.
Milk-bottles Committee	One meeting.

The importance and value of this work in the estimation of British Commonwealth dairying authorities was again evidenced at the British Commonwealth Standards Conference held in 1946, in connection with which special meetings of the Dairying Committees of the British Standards Institution were held. The conference endorsed previous recommendations relating to the importance of maintaining active intra-Imperial collaboration in connection with development of dairy standards. The gratifying progress that has been made in the development of dairying standards in New Zealand is shown by the fact that all the projects which the Conference listed for prior attention are in course of development here, while many of them have already been well advanced.

Dairy Products and Requisites Committee.—The work of this committee, which was necessarily deferred during the war years, has been resumed. It is concerned essentially with the bacteriology and chemistry of dairy products and requisites, and is therefore vitally important to assist in attaining and maintaining the high-quality standards necessary for our products to hold preference on the world market. By special arrangement, it works in the closest collaboration with the corresponding British committees with a view to ensuring, as far as practicable, that the standards adhered to by producers in New Zealand coincide with the standards of quality required to afford fullest satisfaction to the British market. Conversely, this close collaboration enables the Dominion to import supplies of dairy requisites from Great Britain, to mutually agreed standards, adequate to the production of butter and cheese, to the necessary high standard of quality.

During the year the Dairy Products and Requisites Committee examined 7 proposed New Zealand, 3 draft British, and 6 British standard specifications. It also perused and commented on 71 sets of British committee minutes and preliminary drafts, and has prepared comments on other topics in response to special requests from the British Standards Institution.

Sampling and Chemical Analysis of Butter.—A draft standard specification for the sampling and chemical analysis of butter has been recommended by the Dairy Products and Requisites Committee for circulation to affected interests overseas and in New Zealand. It establishes standard methods for sampling and analysis of butter

both for routine commercial testing in dairy factories and grading stores, and for analytical work in laboratories generally.

Sampling and Chemical Analysis of Cheese.—The foregoing report relating to sampling and chemical analysis of butter applies equally to a similar draft standard specification for the sampling and chemical analysis of cheese.

Acidity in Cream, Milk, and Whey.—A standard specification for solutions and methods for the estimation of acidity in cream, milk, and whey was completed and printed in 1940, but its issue was held in abeyance on account of the difficulty in obtaining supplies of phenolphthalein for making up the stronger solution, which was specified in order to obtain more accurate test results. With some minor amendments, the standard specification has now been issued, and, since the determination and control of acidity is a primary factor affecting the quality of both butter and cheese, it will be of paramount importance in that it will serve virtually as a text-book which, within practical limits, will eliminate variation in testing methods and practice followed by different operators in dairy factories and elsewhere.

Gerber Method for determining Fat in Milk.—Following a detailed investigation, the Dairy Products and Requisites Committee has recommended the British standard for this test for adoption as a New Zealand standard specification, subject to local amendments. The adoption of the standard will ensure that accurate and comparable results are obtained by analysts, dairy instructors, factory-managers, and herd-testers, to whom it will be a valuable text-book.

Babcock Method for determining Fat in Milk.—Experience in New Zealand has shown that the British standard for this test is not entirely satisfactory for New Zealand requirements. Research has therefore been carried out by the members of the Dairy Products and Requisites Committee to establish the requirements relating to the technique and apparatus for the Babcock test that will satisfy New Zealand conditions, and the committee is collaborating with the American Dairy Science Association in long-range research on this subject. It has drafted an extensive amendment and addendum to the British standard which, subject to these amendments, has been recommended for adoption in New Zealand.

Reductase Test on Milk.—The draft New Zealand standard specification for the reductase test on milk, which is used to determine its keeping and hygienic quality, has been circulated to the affected interests, and their comments have been assembled for consideration by the Dairy Products and Requisites Committee.

Alkaline Cleaners.—The proposed New Zealand standard specification for alkaline cleaners (excluding soaps) is nearing the draft stage. The initial drafting of the specification was carried out by a joint panel of the Dairy Products and Requisites Committee and the Chemical Sectional Committee. It will provide a basis for the sale and purchase of dairy detergents on the basis of their efficacy in relation to price and in relation to their suitability for the different purposes for which they are required, which the experience of factory-managers has shown to be necessary. For example, investigation has shown that the use of corrosive detergents is frequently the cause of premature rusting of dairy tinware and milk-cans.

Other Projects.—The committee is also giving attention to coated tinfoil; anatto and other dyes; cheese-cloth, butter-muslin, cheese-bandages, and cheese-caps; quality of casein for different purposes; estimation of visible dirt in milk; sampling of all dairy products; bacteriological analysis of dairy products; butter-wrappings; coagulating strength of rennet; acid and rennet casein; salt for dairy purposes; and floating protected dairy thermometers.

Milking-machine Rubberware.—The emergency standard specification for Milking-machine Rubberware has been revised and will be reissued as a regular standard specification.

Milk-bottles.—A committee was instituted to formulate a standard specification for milk-bottles, which will establish uniform requirements in respect of essential

dimensions, capacities, and quality of glass. Some attention is also being given to a type of closure, with particular reference to hygiene. Representations concerning the need for this standard have stressed that, as much new plant is likely to be installed in the near future, the time is opportune for standardization, which would yield substantial economies through reduced breakages, lower manufacturing and transport costs, and the great facility and convenience which would result particularly in the use of filling and washing machines and processes.

BRITISH COMMONWEALTH STANDARDS CONFERENCE, 1946

As a result of the discussions held in London in 1945, referred to in the last report, a British Commonwealth Standards Conference was held in London from 30th September to 12th October, 1946, and was attended by representatives from the United Kingdom, Canada, Australia, South Africa, India, Palestine, Eire, and New Zealand. It was not possible to send special delegates from New Zealand, but the Dominion was formally represented by Mr. D. M. Jervis, of the High Commissioner's Office, London, and Messrs. F. H. Taylor and M. Wallace, of the London staff of the Dairy Division of the Department of Agriculture.

INTERNATIONAL STANDARDIZATION

The establishment of the International Organization for Standardization on a permanent basis was achieved by a conference of the member bodies of the United Nations Standards Co-ordinating Committee and the member bodies of the International Federation of National Standardizing Bodies, frequently referred to as the International Standards Association (I.S.A.), which was in existence before the war, but was active mainly in continental Europe. The new organization has a wider membership of national standards bodies than any previous international organization for standardization, having been formed by the ratification of its constitution and rules of procedure by twenty-five national standards bodies, including the American Standards Association, the All-Union Standards Committee of the U.S.S.R., and the British Standards Institution.

The New Zealand Standards Institute has become a member of the International Standards Organization, and is thus contributing towards the effective co-ordination of various national standard specifications which, by promoting international standardization, will facilitate trade without interfering with national standards necessary to the special conditions and requirements of individual countries. New Zealand will benefit from the development of international standards quite apart from the aspect of international trade, since the development of standards by agreement between industrially advanced countries will make available the advantages of the latest scientific research and technological practice.

The following projects have been referred to the International Organization for Standardization :—

- Terms and Definitions for the Heat Treatment of Steel.
- Moisture Regain of Wool.
- Gauges for Sheet Metal and Wire.
- Pallets for the Unit Load Method of Materials handling.
- Pressure Ratios, Valve Outlets, and Identification Colours for Gas-cylinders.
- Definition of Rayon.
- Machine Tools.
- Unification of Boiler Construction Codes.
- Metal Food-containers.
- Co-ordination of Building Standards.
- Textiles Testing Methods.
- Essential Oils.
- Extra High Voltages for Electrical Transmission.
- Measurement of Radio Interference.
- Universal Decimal Classification.

Grades of Shellac, and Methods of Test.
 Terminology used in the Plastics Industry.
 Testing Methods and Classification of Plastics.
 Manganese Ore.
 Automobile Standards.
 Screw Threads and Ball and Roller Bearings.

EXCHANGE OF STANDARD SPECIFICATIONS

Under the reciprocal exchange arrangement, copies of all specifications formulated in New Zealand have been sent to the standardizing bodies in English-speaking and other countries which adhere to this arrangement. In return, during the year under review, New Zealand has received 1,007 similar documents from 17 standards organizations, as set out in Table A hereunder. This reciprocal arrangement assists to ensure that, in so far as practicable and desirable, uniform standard specifications will be adopted by the countries concerned.

Table A

Source of Supply.	New and Revised Standards.	Draft Standards.	Emergency Standards.	Totals.
<i>National Standardizing Bodies</i>				
British Standards Institution	61	224	..	285
Standards Association of Australia	19	20	2	41
Canadian Standards Association	30	..	..	30
South African Standards Institution	2	..	..	2
American Standards Association	82	..	..	82
Association Francaise de Normalisation (France)	133	..	..	133
Instituto Uruguayo de Normas Technicas (Uruguay)	1	..	..	1
Norges Standardiserings-Forbund (Norway) ..	18	..	..	18
Schweizerische Normen-Vereinigung VSM-Normalienbureau (Switzerland)	29	..	..	29
Sveriges Standardiseringskommission (Sweden)	36	..	..	36
<i>Other Organizations</i>				
Australian Department of Commerce and Agriculture (Commonwealth Food Control)	30	..	..	30
American Society for Testing Materials	45	..	..	45
Canadian Government Purchasing Standards Committee	29	..	..	29
Indian Railway Board	8	..	..	8
Society of Automotive Engineers	47	..	..	47
U. S. Department of Commerce (National Bureau of Standards)	67	..	..	67
U.S. Treasury Department (Federal Standard Stock Catalogue)	124	..	..	124
Totals	761	244	2	1,007

SALES OF STANDARD SPECIFICATIONS

Sales of standard specifications totalled 20,719 volumes, representing some 35,000 individual specifications, to a value of £1,927 17s. 1d.

ACKNOWLEDGMENTS TO MEMBERS OF COMMITTEES AND ORGANIZATIONS

It is desired to acknowledge and record appreciation of the valuable service rendered gratuitously by the members of the various committees of the Standards Council and by the many other persons representing Government Departments, local authorities, and professional, commercial, trading, and industrial interests, including the executives of their various organizations, all of whom have contributed so generously in time and effort towards the work reviewed in this report.

A. R. GALBRAITH, F.R.S.E., M.Inst.C.E.,
 Chairman, Standards Council.

APPENDIX

NEW ZEALAND STANDARD SPECIFICATIONS ADOPTED, REVISED,
AMENDED, AND WITHDRAWN DURING THE YEAR

1. New Zealand Standard Specifications Adopted

Building Construction

- N.Z.S.S.
495 Profiles of Weatherboards, Flooring, and Matchlining.
496 Profiles of Mouldings and Joinery.

Chemistry

- 497 Methods for the Analysis and Testing of Coal and Coke; being B.S. 1016-1942.
498 Methods for the Sampling of Coal and Coke; being B.S. 1017-1942.
499 Methyl Alcohol (Methanol); being B.S. 506-1933.
500 Whale Oil; being B.S. 836-1939.

Household Commodities

- 514 Writing, Fountain Pen and Record Inks and Ink Powder. (*Superseding* N.Z.S.S. E.188.)
515 Stamp-pad Ink. (*Superseding* N.Z.S.S. E.189.)
516 Marking Ink. (*Superseding* N.Z.S.S. E.190.)
517 Black Waterproof Drawing Ink. (*Superseding* N.Z.S.S. E.191.)
518 Coloured Waterproof Drawing Ink. (*Superseding* N.Z.S.S. E.192.)

Dairy Industry

- 494 Sampling and Analysis of Cheese.
519 Milking-machine Rubberware. (*Superseding* N.Z.S.S. E.74.)
501 Standard Apparatus for determining the Percentage of Fat in Milk and Milk Products by the Gerber Method; being B.S. 696, Part I-1936, *amended to suit New Zealand requirements.*
502, Pt. 1 Apparatus for the Determination of the Percentage of Fat in Milk and Milk Products by the Babcock Method; being B.S. 755, Part I-1937, *amended to suit New Zealand requirements.*
502, Pt. 2 Methods for the Determination of the Percentage of Fat in Milk and Milk Products by the Babcock Method; being B.S. 755, Part 2-1937, *amended to suit New Zealand requirements.*

Electrical Engineering

- 486 Hearing-aid Equipment (Valve Type). (*Superseding* N.Z.S.S. E.83.)
504 Dimensions of Edison-type Screw Lamp Caps and Lampholders; being B.S. 98-1934.
505 Trolley and Contact Wire and Trolley Wheel Groove for Electric Traction; being B.S. 23-1933.
506 Glossary of Terms used in Telecommunication; being B.S. 204-1943.
507 Finishing Air-drying Insulating Varnish for Electrical Purposes; being B.S. 634-1935.

Mechanical Engineering

- 487 Code of Practice for Metal Arc Welding of Mild Steel for Use in General Building Construction (Workmanship).
508 British Standard Code for Flow Measurement; being B.S. 1042-1942.
509 Non-ferrous Thimbles (Spigot and Socket) and Ferrules (Sleeve); being B.S. 1182-1944.
510 Cast-iron Boilers for Central Heating and Hot-water Supply; being B.S. 779-1938.
511 Riveted Steel Boilers for Hot-water Central Heating and Hot-water Supply; being B.S. 780-1938.

Plumbing

- 512 Cast-iron Spigot and Socket Soil Waste and Ventilating Pipes, Fittings, and Accessories; being B.S. 416-1944.
513 Cast-iron Gutters, Fittings, and Accessories: Half-round Gutters; being B.S. 1205, Part I-1945.
493 Ceramic Washdown W.C. Pans (Dimensions and Workmanship); being B.S. 1213-1945, *amended to suit New Zealand requirements.*

Miscellaneous

N.Z.S.S.

- 390 By-law for the Control and Licensing of Boardinghouses and similar Premises.
520 Code of Cost Accounting Terminology.

2. Revised New Zealand Standard Specifications

- 126 Glossary of Terms used in Electrical Engineering ; being B.S. 205-1943.
134 Testing of the Zinc Coating on Galvanized Wires ; being B.S. 443-1939.
158 Tungsten Filament General Service Electric Lamps ; being B.S. 161-1940.
196 Test Sieves ; being B.S. 410-1943, *amended to suit New Zealand requirements*.
208 Methods of Sampling Gelatine ; being B.S. 757-1944.

3. Amendments to New Zealand Standard Specifications

- 169 Classification and Grading of New Zealand Building Timber (National Grading Rules).
(Amendment No. 1, dated April, 1946.)
245 Water Closet Flushing Cisterns. (Amendment No. 1, dated February, 1946.)
247 Solutions and Methods for the Estimation of Acidity in Cream, Milk, and Whey.
(Amendment No. 1, dated May, 1946.)
282 Asbestos Cement Unreinforced Flat Sheets and Corrugated Sheets. (Amendment No. 2,
dated November, 1946.)
468 Household Furniture. (Amendments No. 1, dated March, 1946, and No. 2, dated
September, 1946.)

4. New Zealand Standard Specification withdrawn

- 184 Joiners' Glue (Cake or Powder, Jelly or Liquid, and Casein Glue) ; being B.S. 745-1937.
(*Superseded by N.Z.S.S. E.205.*)

5. New Zealand Emergency Standard Specifications adopted**Automotive**

- E.220 Definitions for Use in Motor-car Cleaning, Lubrication, and Allied Servicing.

Building Construction and Materials

- E.205 Joiners' Glue. (*Superseding N.Z.S.S. 184.*)
E.207 Protective Metal Finishes primarily for use Indoors.
E.217 Concrete Roofing-tiles.
E.221 Code of Practice for Terrazzo Work.
E.222 Building-boards.
E.229 Ready-mixed Paint for Finishing Coats for Woodwork (White and Light Tints). (*Super-
seding N.Z.S.S. E.32.*)
E.236 Recommended Code of Practice for the Fixing of Concrete and Earthenware Roofing-tiles.
E.237 Gypsum Casting Plaster.

Household Commodities

- E.193 Second-hand Fruit and Vegetable Cases.
E.216 Fish-liver Oils.
E.218 Paua-shell Jewellery and Ornaments.
E.231 Oily Canvas Clothes.
E.232 Household Tinware Utensils.
E.233 Garden Rakes (excluding Inserted Tooth Type).
E.234 Garden Hoes.
E.235 Shovels and Spades of the Hollowback Socket Pattern.

Primary Industry

- E.228 Vitamins A and D Oils for Animal Feeding.
E.230 Cow Covers.

6. Revised New Zealand Emergency Standard Specifications

- E.106 Doors.
E.160 Commercial Plywoods,

7. Amendments to New Zealand Emergency Standard Specifications

N.Z.S.S.

- E.32 Ready-mixed Paints for Finishing Coats for Woodwork (White and Light Tints). (Amendment No. 1, dated April, 1946.)
- E.50 Bucket-pump Fire-extinguishers. (Amendment No. 1, dated July, 1945.)
- E.51 Ready-mixed Paint for Priming Coats for Woodwork (*excluding* Totara). (Amendment No. 1, dated April, 1946.)
- E.52 Ready-mixed Paints for Undercoats for Woodwork. (Amendment No. 1, dated April, 1946.)
- E.79 Grades of Meat for Sale on the Local Market, and Definitions of Joints and Cuts. (Amendments No. 2, dated December, 1945, and No. 3, dated October, 1946.)
- E.112 Precast Concrete Drainage Pipes. (Amendment No. 1, dated May, 1946.)
- E.222 Building-boards. (Amendment No. 1, dated November, 1946.)

8. New Zealand Emergency Standard Specifications withdrawn

- E.32 Ready-mixed Paints for Finishing Coats for Woodwork (White and Light Tints). (*Superseded by N.Z.S.S. E.229.*)
- E.43 Men's Split and Kip Working Boots.
- E.74 Milking-machine Rubberware. (*Superseded by N.Z.S.S. 519.*)
- E.83 Hearing-aid Equipment (Valve Type). (*Superseded by N.Z.S.S. 486.*)
- E.108 Water-closet Pans. (*Superseded by N.Z.S.S. 493; being B.S. 1213, amended to suit New Zealand requirements.*)
- E.188 Writing, Fountain Pen and Record Inks and Ink Powder. (*Superseded by N.Z.S.S. 514.*)
- E.189 Stamp-pad Ink. (*Superseded by N.Z.S.S. 515.*)
- E.190 Marking Ink. (*Superseded by N.Z.S.S. 516.*)
- E.191 Black Waterproof Drawing Ink. (*Superseded by N.Z.S.S. 517.*)
- E.192 Coloured Waterproof Drawing Ink. (*Superseded by N.Z.S.S. 518.*)

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