1944

NEW ZEALAND

NEW ZEALAND STANDARDS COUNCIL

(DEPARTMENT OF INDUSTRIES AND COMMERCE)

ANNUAL REPORT FOR THE YEAR 1943–44

Presented to both Houses of the General Assembly by Leave

The Hon. D. G. Sullivan, Minister of Industries and Commerce

Sir,—

I have the honour to submit herewith the annual report of the New Zealand Standards Council for the year ended 31st March, 1944.

I have, &c.,

L. J. Schmitt,

Permanent Head, Department of Industries and Commerce.

A. R. Galbraith, M.Inst.C.E., F.R.S.E., Chairman, New Zealand Standards Council.

L. J. McDonald, Secretary, New Zealand Standards Council.

REPORT

In view of the continued need to conserve paper, this report of the Standards Council for the year ending 31st March, 1944, is condensed to a summary of general activities.

MEETINGS OF COMMITTEES

During the year 128 meetings of standing committees have taken place, in addition to 22 formal conferences and approximately 45 informal conferences, a total of 195 meetings.

STANDARD SPECIFICATIONS ISSUED

Regular Standard Specifications.—Thirty-seven Regular Standard Specifications have been adopted during the year. Of these, 14 relate to electrical engineering, 19 to mechanical engineering, 3 to chemistry, and 1 to building materials and construction. Two of the 37 Standard Specifications originated and have been developed in New Zealand. The remaining 35 are British Standards which have been carefully examined by the appropriate committees and affected interests, and have been found suitable for adoption as New Zealand Standard Specifications. In addition, two British Standards, previously adopted as New Zealand Standard Specifications and since revised and issued as Emergency British Standards, have been adopted as New Zealand Emergency Standard Specifications to supersede the two corresponding British Standards previously adopted. Revisions of three British Standards previously adopted as New Zealand Standard Specifications have been endorsed as revisions of the New Zealand Standard Specifications. Three Standard Specifications have been withdrawn during the year, bringing the total of existing Regular Standard Specifications to 421.

Emergency Standard Specifications.—Forty-five War Emergency Standard Specifications have been adopted during the year. Of these, 14 are commodity standards, 16 relate to overseas purchasing, 7 to mechanical engineering, 3 to electrical engineering, 1 to civil engineering, 3 to chemistry, and 1 to paint. Nine of these Emergency Standards are British Standards which have been adopted as New Zealand Emergency Standards. In addition, two original Emergency Standard Specifications have been revised.

The total number of Regular and Emergency Standard Specifications adopted during the year is therefore 82, a list of which appears in the Appendix hereto. The year's work has increased the number of War Emergency Standard Specifications to 163 and the number of Regular Standard Specifications to 421, making a grand total of 584 New Zealand Standard Specifications.

STANDARD MARK

Since the presentation of the last annual report, wherein reference was made to the registration of the Standard Mark, a procedure has been established whereby the Mark, a facsimile of which appears below, is now available to traders under license which may be granted upon application being made to the Minister of Industries and Commerce.

The establishment of this procedure introduces the new and fundamentally important principle of providing a means whereby the relative nature and comparative quality of goods may be defined in a way that is easily discernable by the general public. This will afford an effective protection to the public against the purchase of inferior commodities represented as quality goods, and will also assist purchasers to secure the most suitable commodities for given purposes with due regard to price in relation to their own financial resources. It will thus enable the general public to interpret the value of the goods they purchase on a basis of known quality and known quantity in relation to known price.

The use of the Mark will have the further advantage of providing a valuable facility to trade and commerce by making available an effective and reliable means of certifying the nature and quality of goods in a way that will establish and maintain public confidence. It will also avoid the confusion and conflict that arises from the use of general and ill-defined terms between buyer and seller, and will provide a more equitable basis for competitive trade.

As the use of the Standard Mark is extended, it will fulfil a function similar to that of the King's Hall-mark on gold and silver wares since the fourteenth century. In this way the quality standard of these precious metals has been protected against the unfair competition of counterfeit lines, which simulate quality in appearance and presentation only, thereby enabling people to readily distinguish genuine commodities from cheap imitations. Likewise the purpose of the Standard Mark is to provide a hall-mark of quality and utility for use on commodities which comply with New Zealand Standard Specifications. In each case a similar method is adopted to ensure that these two distinctive Marks shall remain an effective guarantee of the intrinsic quality and true description of the commodities in connection with which they are used.

For the past five hundred years the right to use the Hall-mark on gold and silver wares has been granted by Royal Charter only after competent and independent authority has assayed the precious metals to determine their quality. Similarly, the Standard Mark is registered in New Zealand in the name of His Majesty the King, and its use will be permitted only on commodities which comply with the requirements of New Zealand Standard Specifications as determined by competent opinion representative of producers, distributors, and consumer interests. The use of the Standard Mark, therefore, is based upon the procedure and precedent of the Hall-mark used on gold and silver wares during the past five centuries. Throughout this period, alleged quality or certification marks have been used in various forms by numerous commercial interests. None of these, however, has closely adhered to the principles which govern the use of the King's Hall-mark, and consequently they have proved much less effective. During more recent years the Standards organizations in other countries have adopted Standard Marks which have met this deficiency. In adopting the Standard Mark and making it available for use as a distinctive quality mark, New Zealand, therefore, is moving in accord with a sound, universal development.

When affixed to commodities, or used on invoices, show-cards, price-tickets, or in advertising, the Mark will represent a reliable certification by the supplier concerning the nature and the quality of the goods on which, or in connection with which, it appears.

The use of the Standard Mark will thus establish trade on a basis of fuller mutual confidence and good will. Moreover, it will assist to eliminate the loss and waste that arises from the use of a multiplicity of individual specifications, different only in unimportant details which, as compared with a common specification, necessitate shorter production runs and considerably increased overhead costs. This loss, together with that which results from the waste and handicap of superfluous variations in types, sizes, and grades of commodities, due only to marketing innovations and caprices, substantially increases the cost of production and distribution without yielding any compensating gain.

A further advantage that will accrue from the use of the Mark is the greater stability of the market which will result from the continuity of production made possible through the use of the relevant Standard Specifications which represent a clear statement of the type and class of commodities that will best satisfy any subsequent demand of the respective distributive trades and the consumer public.

The Mark as a symbol of a relevant Standard Specification will provide a common language between buyer and seller. It will not replace other guides to selection, but will supplement these and so make advertising more reliable, labelling more informative, and trade-marks a more efficacious means of maintaining the prestige of the goods and the reputation of the business interests concerned.

In connection with commodities for which no Standard Specification is in existence as a basis for the use of the Mark, a Standard Specification may be developed upon request, with the co-operation of

the affected trading and consumer interests. It should be emphasized that Standard Specifications do not remain static, but are a statement of the soundest trade practice known at a given time, which incorporates advances as these are attained throughout subsequent periods. Contrary to popular misconception, Standard Specifications do not curb inventive genius or fetter the expression of æsthetic values in style, design, or in any other way.

The procedure which has been laid down to govern the issue of licenses is simple, but it nevertheless provides adequate safeguards to ensure that the Mark will not be used in a way that will destroy its value as a means of certifying the quality, utility, and performance capacity of the commodities on, or in connection with, which it is used.

TECHNOLOGICAL STANDARDIZATION

Due to the acceleration of standardization activities in other English-speaking countries, arising out of the necessities of war conditions, the technical committees have been called upon to undertake a correspondingly heavier volume of work associated with the examination and review of the increasing number of standard specifications relating to civil, mechanical and electrical engineering, chemistry, building construction, and related subjects. A summary of the review of these specifications appears on page 12 of this report. Some of the overseas specifications recommended for adoption as New Zealand Standard Specifications have not yet been adopted, as the subject-matter of these specifications relates to more than one section of the work and it is necessary to refer them to more than one committee for examination.

The committees have also undertaken a heavier volume of work in connection with the development of original New Zealand Standard Specifications relating in particular to building-materials, constructional methods, and processes by which building-materials are rendered resistant to weathering, fire, insect, and fungoid attack.

Civil Engineering Sectional Committee. The consideration of overseas specifications in order to determine whether they were suitable for adoption here constituted the main activity of this committee and its sub-committees. Five British Standard Specifications have been examined, and of these, two have been recommended for adoption as revisions of existing New Zealand Standard Specifications. Two amendments to British Standards already adopted have been recommended for incorporation in the corresponding New Zealand Standard Specifications. One American Standard has been examined, but found unsuitable for adoption.

Concrete drainage pipes. An Emergency Standard Specification for pre-cast concrete drainage pipes has been completed during the year. This specification will simplify manufacturing problems and will consequently be of advantage to both manufacturers and users in that it will concentrate production on standard lines, sizes, and qualities. Performance requirements, test pressures, ultimate strength, and similar features are covered, together with provisions relating to joints and jointing. This Standard Specification, together with those for Reinforced Concrete and Salt-glazed Ware Pipes, affords a valuable aid to local authorities, engineers, and others concerned with the supply, purchase, and installation of pipe-lines for reticulation and drainage purposes.

Mechanical Sectional Committee.—This committee has undertaken extensive work in connection with the consideration of overseas specifications. It has examined and directed for circulation and comment eleven draft British Standards, the comments received having been transmitted to the British Standards Institution. The committee has also examined sixty-one British, seven Australian, and three American Standard Specifications. Of the British Standard Specifications, seventeen were recommended for adoption as regular New Zealand Standard Specifications, and six as New Zealand Emergency Standard Specifications. Three amendment slips to British Standards already adopted were recommended for incorporation in the corresponding New Zealand Standard Specifications, and one emergency amendment was dealt with similarly. Three revised Emergency Standard Specifications were recommended for adoption to replace the three corresponding Standards previously adopted, while one Regular Standard was recommended for withdrawal.

Soft Solder.—With the object of assisting the urgent necessity to economize in the use of tin during the war emergency, a Standard Specification specifying the composition of seven types of solder has been issued. The specification also stipulates the purposes for which each type of solder should be used in order to prevent the waste that occurs if solder with a high tin content is used for work which can be satisfactorily carried out with solder with a lower tin content.

Gauges.—After careful investigation of the considerations relating to the use of gauges in New Zealand, the British Standard Recommended Designs for Plug, Ring, and Gap Gauges have been adopted with the addition of a local supplement specifying a further design for gap gauges which experience has shown to satisfy a need here over and above what is met by the British Standard. The specification covers all the gauges for pre-set dimensions which are generally used in precision engineering and stipulates the design and degree of accuracy of the gauges in order to eliminate as far as possible variations in the checking and testing of measurements and tolerances and so avoid the loss of production that occurs due to lack of sufficient uniformity in this regard and the further loss caused by corrections and readjustments on this account. The specification will therefore not only be of direct valuable assistance to precision engineering, but will also be of substantial indirect assistance in the production of all commodities which depend upon precision engineering.

Electrical Sectional Committee.—In common with the other engineering sectional committees, this committee's activities have been mainly concerned with specifications received from overseas. Five draft British Standard Specifications were examined and circulated for comment. Twenty-six British and three Australian Standard Specifications were examined. Of these, eight British Standards were recommended for adoption as Regular Standard Specifications, while two were recommended for adoption as Emergency Standard Specifications. Fourteen amendments to British Standards already adopted were recommended for incorporation in the corresponding New Zealand Standard Specifications, while two further amendment slips to British Standard Specifications were also examined by the committee but were found unsuitable for adoption.

Chemical Sectional Committee.—During the year one draft Australian and two draft British Standard Specifications have been considered and circulated for comment. Ten British and three Australian Standard Specifications have been examined, and, of these, two British Standards have been recommended for adoption. The other British Standards and Australian Standards have been referred to affected local interests for review and comment with a view to determining whether they are suitable for adoption. In some cases special committees representative of the affected interests have been set up to examine the relevant specification and to make appropriate recommendations. Three amendment slips to British Standards previously adopted were recommended for incorporation in the corresponding New Zealand Standard Specifications, while one other amendment slip to a British Standard was found unsuitable for adoption.

Lubricating-cup Greases.—This specification, completed during the year, establishes grades for the lubricating value of greases on the basis of requirements in relation to composition, physical properties, freedom from undesirable fillers, and corrosive action.

Analytical Reagents.—Specifications were completed during the year for Sulphuric Acid and Pure Concentrated Ammonia Solution suitable for use in many cases in place of reagents of analytical purity. Owing to war conditions these chemical reagents could no longer be imported, and industries depending on their use for testing purposes were seriously handicapped by having insufficient means of reliably determining the purity of the reagents which they used for ascertaining the nature and quality of materials and processes entering into the production of the related commodities. A further value of these specifications is that to a considerable extent they meet the deficiencies caused by the absence of imported reagents in connection with analytical and testing work which is carried out on a wide scale by the various testing laboratories throughout the Dominion.

Paint for Service Vehicles.—This specification provides for a uniform colour and absence of excessive gloss on camouflage paint for military vehicles. Other factors specified are adhesion, hardness, resistance to oil and water, and protection against corrosion, which, together with the specified methods of test, ensure that the paint is of adequate quality for the purpose required in relation to the price paid. This example soundly evidences that there can be no proper and economic basis for the expenditure of public funds applied to the purchase of commodities unless these are purchased to appropriate Standard Specifications. Otherwise manufacturers are called upon to manufacture to a diversity of specifications commodities required for one and the same purpose. This involves shorter production runs, duplication of stocks of raw material, partly processed, and finished commodities, and the manufacture of small quantity special orders at greatly increased cost instead of the manufacture of major quantities for stock from which all orders for the same type and class of commodities can be supplied on a minimum production cost basis. This consideration has had an important bearing on a number of the projects which have received the attention of the various committees during the year. The generally accepted average reduction in price which results from the acceptance of Standard Specifications as the basis for the supply and purchase of commodities is estimated at 25 per cent. The tremendous cumulative savings capable of being effected by the general application of this principle in relation to public purchasing are of the utmost importance to the economy of the Dominion.

Ink.—Attention to this project was rendered necessary since imported supplies of ink were unavailable. Consequently, it became necessary to provide a specification for the manufacture of ink in New Zealand of a quality that would not handicap the important and essential work in connection with which it is used. In many cases the proper carrying-out of major undertakings is dependent upon the clarity and permanence of plans and drawings on which they are based.

Rot-proofing.—Consequent upon the adoption of a code of practice for the rot-proofing of sand-bags as an Emergency Standard Specification during the period covered by the last annual report, steps have been taken to establish a special committee to investigate the question of preparing Standard Specifications for rot-proofing of other textile materials. In this connection preliminary tests are at present being undertaken to determine which methods of rot-proofing are most effective to cope with the climatic conditions in this country, and also in the Pacific Islands where textile materials are being extensively used. Reports of similar investigations in other English-speaking countries indicate possibilities of prolonging the life of textile materials to such an extent as to involve economic implications which this Dominion cannot afford to ignore.

Wood-preservation.—The purpose of this project is to provide for a standardized treatment of sap timber that will enable it to be used for purposes which, up to the present, have necessarily made very heavy demands on the limited supplies of heart timber available. Investigations in regard to this project are at present in their initial stages, but its possibilities are of far-reaching significance in relation to the need for the utmost conservation of timber-supplies in order to meet the potential demand of a future comprehensive building programme.

BUILDING STANDARDS

In common with the Standards organizations of the other English-speaking countries, this organization has extended its activities in connection with the formulation of codes of practice and related specifications for building materials in anticipation of a major post-war building construction programme. It is gratifying to be able to report in this connection that the work is as well advanced in New Zealand as in the other countries concerned, and is probably considerably further advanced than it is in most of them. The investigations that are being carried out overseas and the conclusions resulting therefrom have been carefully examined and used in relation to the corresponding work here. Conversely, there is substantial evidence coming to hand from some overseas countries that our work is being used to assist them in the formulation of codes of building practice.

The value and importance of this work is soundly evidenced by the attention that has been given to it in Great Britain, where the Ministry of Works has sponsored a comprehensive programme for the preparation of codes of practice for civil engineering, public works, building, and constructional work to ensure the most effective use of labour and materials consistent with proper regard for safety, public health, durability, and appearance. These codes of practice are being documented and published by the British Standards Institution as British Standard Codes, and are being supplemented by British Standard Specifications for materials and methods of test.

Building Research Committee.—The appointment of the chairman of the Building Code Sectional Committee and the Secretary of the Standards Institute to the Building Research Committee of the Council of Scientific and Industrial Research has provided a close and valuable liaison which will ensure that the results of the research carried out will be taken into account in the preparation of relevant Standard Specifications, and will thus be made available in the most convenient form to all affected interests.

Building Code Sectional Committee.—Three further Parts of the Standard Code of Building By-laws have been issued, bringing the total number of Parts now available to nine, as follows:—

Part I.—Preliminary.
Part II.—Building Permits.
Part III.—General Design and Construction.
Part IV.—Basic Loads and Stresses to be used in Design.
Part V.—Reinforced and Plain Concrete Construction.
Part VI.—Panel Walls in Framed Structures.
Part VII.—Means of Egress. (*Issued this year.*)
Part VIII.—Residential Buildings. (*Issued this year.*)
Part IX.—Light Timber Construction. (*Issued this year.*)

In addition, the original sections concerning masonry buildings and chimneys, appearing in the Standard Model Building By-law, Sections I–X, issued in 1935, are still available for the guidance of local authorities, engineers, architects, Government Departments, and the other affected interests.

Part VII: Means of Egress.—This Part establishes minimum requirements in respect of the means of egress from buildings other than private dwellinghouses and buildings used for public meetings. The requirements apply to all buildings erected after the by-law comes into force, but do not apply to existing buildings except in cases where the means of egress are considered by the local-body engineer and an officer of the local fire brigade to be inadequate for the safety of the occupants. Owing to serious fires experienced in some parts of the Dominion, the responsible local authorities have during the past few years strongly represented the urgent necessity for completing this Code, which evidences that its issue will fulfil a need which has long been felt. While in the past there has been some loss of life in New Zealand owing to inadequate means of egress, this country, fortunately, has been free from disasters of any great magnitude. Nevertheless, overseas experience demonstrates the necessity to adopt safeguards that will minimize and avoid such hazards before rather than after they occur. The appropriate committee has in the course of preparation a separate Standard Specification for Fire Doors and Fire Windows which is required for citation in the Egress Code.

Part VIII: Residential Buildings.—This Part of the Standard Code establishes minimum requirements in respect of dwelling units, relating to such matters as number and size of rooms, lighting, ventilation, and general amenities, including special provisions in respect of apartment buildings and similar premises. It will therefore provide uniform, minimum, essential requirements necessary to ensure adherence to sound principles of housing construction, which will mean that the thousands of homes built to these requirements in the future will be so planned as to afford good living conditions.

Part IX: Light Timber Construction.—This Part of the Standard Code establishes minimum constructional requirements for the type of building construction commonly known as "stud framing"—*i.e.*, in which the structural parts are of relatively small dimensions arbitrarily determined and not specially computed. It will therefore apply to the great majority of residential and other small buildings erected in the Dominion. In addition to the necessary general provisions and minimum requirements in respect of timber and other materials, this Part of the Code covers the essential aspects of foundation and floor-construction, wall-framing, roof-construction, and wall-coverings. This Part of the Code, in common with several other parts, will assist to eliminate the wasteful use of timber and other materials, the only effect of which is to hasten the exhaustion of our essential supplies. At the same time the most economic use of these materials consistent with adequate structural strength will be ensured.

Dwellinghouse Construction Specification.—Parts VIII and IX of the Standard Code of Building By-laws have been most usefully supplemented by a separate comprehensive Standard Specification for Dwellinghouse Construction. The object of this specification is to ensure that the resources applied to housing construction will be employed to the best advantage on the most economic cost basis, having regard for the maintenance of sound standards of construction, hygiene, and general conditions. Whereas the Code of Building By-laws is confined to minimum requirements in respect of structural stability, public health, and other matters concerning which local authorities are vested with by-law-making powers, this specification establishes requirements in relation to the more detailed aspects relating to the actual materials and the methods that shall be employed in the construction of a dwellinghouse. These requirements, when read together with those contained in the relevant parts of the Standard Code of Building By-laws, should prove of valuable assistance to architects, builders, local authorities, and to Government Departments and to individuals who contemplate entering into contracts for the construction of dwellinghouses. Occupiers, whether owners or tenants, will also be assured concerning the essential considerations relating to materials, workmanship, and design in relation to houses constructed in accordance with the requirements of the specification and the Code. As a corollary to the preparation of the Standard Specification for Dwellinghouse Construction, a separate specification for the Installation of Radios is in the course of preparation.

Further Parts of Standard Code of Building By-laws in course of Preparation. In addition to the three parts mentioned above, which have been issued during the past year, work has proceeded on the following parts:—

Steelwork.—The formulation of this Part, which deals with the design and workmanship of steel-framed buildings, whether riveted, bolted, or welded, is now complete, and as soon as the final editing and legal scrutiny of these provisions have been carried out they will be published as a further Part of the Standard Code of Building By-laws. In view of the rapid advances in the use of welding as a means of connection during recent years and the advantages of this method in economy, speed, and quietness, special provision has been made for the use of welding in this Part of the Standard Code. This has entailed preparation of a separate Code of practice for the Workmanship of the Metallic Arc-welding of Mild Steel which has been completed and will be issued as a separate Code of practice. Not only will this separate Code enable welding to be employed on steel-framed structures with safety, but it will also provide a reliable basis for the use of welding in other major structures such as bridges, bulk petrol-storage tanks, and the like.

Masonry Buildings of Bearing Wall Construction.—Work is now proceeding on the revision of Section IV of the original Standard Model Building By-law, Sections I–X. The revised section will provide for all buildings constructed of unit masonry, whether brick, stone, or concrete, including hollow concrete blocks.

Monolithic Concrete Construction.—Arising out of the revision of the masonry section of the original Standard Model Building By-law, work has begun on the preparation of a separate Part of the Standard Code of Building By-laws to deal with monolithic buildings with concrete bearing walls arbitrarily reinforced.

Concrete Water Retaining Structures.—Preliminary attention has been given to the formulation of a separate part of the Standard Code of Building By-laws covering the erection of concrete water-retaining structures.

Standard Code of Plumbing and Drainage By-laws.—During the year the relevant committee commenced its review of the draft Standard Code of Plumbing and Drainage By-laws in the light of the comments received as a result of its circulation to the affected interests for comment. This will prove a lengthy undertaking in view of the large number of valuable, detailed comments received, which evidence a serious need for the completion and issue of the Standard Code at the earliest opportunity.

Building Materials Sectional Committee.—In view of the large volume of work which it has been necessary to undertake in connection with the preparation of Standard Specifications for Building Materials for citation in the standard by-laws, and the Standard Specification for Dwellinghouse Construction, a separate Building Materials Sectional Committee has been established during the year with appropriate sub-committees to deal with the various materials.

Asbestos-cement Roofing-sheets.—As a result of several accidents, some of which were fatal, involving workmen falling through roofs constructed of asbestos-cement sheets, the Standard Specification for these sheets has been supplemented by an additional part providing for adequate safeguards in the form of supports placed under the sheets. A further part to the Standard Specification, incorporating a code of practice for the fixing of asbestos-cement roofs, is also in the course of preparation.

Earthenware Roofing-tiles.—A Standard Specification for earthenware roofing-tiles is nearing completion. This specification will provide for two types of tiles, each of which will be uniform in basic dimensions and design. One of these types will be manufactured and used in the North Island, and the other in the South Island, so that adherence to the specification will avoid the serious difficulty of finding tile replacements when a diversity of types and dimensions is involved. The specification will also include minimum requirements in respect of breaking-strength, porosity, and the other factors which determine the durability and efficacy of the tiles.

Concrete Roofing-tiles.—A Standard Specification for concrete roofing-tiles is also in the course of preparation with the object of ensuring that these tiles will be manufactured to a satisfactory quality and service standard.

Code of Practice for Fixing Roofing-tiles.—A further specification establishing a code of practice for the fixing of both concrete and earthenware roofing-tiles is under consideration. This code will minimize the inconvenience and risk to householders which result from tiles becoming displaced through having been improperly fitted.

Building-boards.—In view of the growing use of building-boards, a Standard Specification for these materials is in the course of preparation. Provisions in respect of each type of board will specify minimum requirements in relation to transverse strength, density, fire-resistance, and other factors which determine the suitability of the boards for various uses.

Fire-resistance Ratings.—In view of the importance of accurately determining the fire-resistance ratings of various building materials and methods of construction, this matter has received close attention during the year with the object of formulating standard methods of test which can be used by the Dominion laboratories. The basis for this work has been provided by the relevant British Standards, one of which has already been recommended for adoption as a New Zealand Standard Specification.

Ceramics.—With the increasing demand for porcelain and enamelled fireclay ware a Simplified Practice Specification has been issued with the object of eliminating, for the time being, the production of non-essential articles. The Simplified Practice Specification will be followed by Regular Standard Specifications for the various items specified therein.

Doors.—The Emergency Standard Specification for Doors, referred to in the previous report, has been revised in the light of the comments received during the period of its initial application. The responsible committee proposes to review the specification further at a later date.

The value of standardization that has been carried out in the building industry is soundly evidenced by competent opinion, which estimates that the cost of standard doors, for example, is from 20 to 60 per cent. less than that of special doors ordered to individual specifications differing from normal trade standards, and that the general reduction averages from 10 to 15 per cent., which substantially absorbs the increased costs due to war conditions. The latter estimate is supported by analysis of the actual increase in the cost of doors compared with the minimum overall increase in timber-construction costs. This is in accord with a statement by Mr. James Byrnes, Director of Economic Stabilization, U.S.A., in the course of a general instruction to Government agencies, in which he stated that standardization effectively carried through can combat the rising cost that threatens price ceilings, maintain at maximum the output of civilian goods that is possible, and bring the prices of some essentials down. That this is generally appreciated is evidenced by the work being carried out in Great Britain, to which reference has been previously made, and is further supported by the following statement in this connection recently received from Australia:—

> "*Standardization is a Solution.*—Standardization and mass production are obviously the solution to reducing the present high costs of building in Australia. The popular conception of standardization is, of course, a fallacious one. It does not imply sameness, lack of variety, and monotony. It simply denotes large-scale use of the best method of producing any given product. By standardization we mean the standardization of various parts of a house without standardizing the appearance of the completed house. For instance, doors and window frames can be standardized and produced by modern factory methods. Similarly with kitchen and bathroom units. Linked with mass production, standardization of this nature can give a tremendous boost to the output of the building industry. And—most important—mass production, plus a reduction in the number of designs, means lower costs."

COMMERCIAL STANDARDIZATION

Overseas Purchasing.—The Specifications Co-ordination Committee has continued its functions of co-ordinating the Dominion's requirements in respect of supplies ordered from overseas and correlating these with the Standard Specifications of the countries of supply. In appropriate cases New Zealand Emergency Standard Specifications have been issued for the guidance of purchasers in New Zealand and suppliers overseas. Sixteen such specifications were completed during the year, bringing the total number of Emergency Co-ordination Specifications to forty-nine. In addition, the Committee has reviewed more than five hundred orders, varying from one to sixteen thousand items, with a view to ensuring that the descriptions and specification items were in a form that was readily understandable to the suppliers, and that the commodities ordered could, wherever possible, be supplied from the current production of the countries concerned.

Cost Accounting Terminology.—Further good progress has been made with the work of preparing the proposed New Zealand Standard Code of Cost Accounting Terminology, which, it is hoped, will be completed during the ensuing year. By establishing generally accepted definitions of the terms used in cost accounting, the Standard Code will avoid the confusion that arises through the use of terms which convey different meanings to different people, and which, up to the present, have seriously handicapped cost accountants and students. The committee recognizes that it is engaged upon a very comprehensive and difficult work which is fundamental to a proper understanding and

effective control of production, distribution, and administration costs. In view of the importance of these considerations and the facility and assistance the Code will thus afford to commercial and industrial executives in connection therewith, the committee has persevered with the project, despite the onerous and exacting nature of the work involved.

Produce Sacks.—At the request of the Price Tribunal a Standard Specification for second-hand sacks has been issued. This specification classifies the sacks into classes and grades according to their type and condition, in a way that will permit the selection of sacks according to the purposes for which they are required at prices that are easily comparable according to their condition, and so greatly facilitate commercial transactions in this connection. Good progress has also been made with the preparation of a Standard Specification for new produce sacks.

DOMESTIC COMMODITY STANDARDIZATION

Considerable progress has been made in the preparation of Standard Specifications for general household commodities. The primary object of this phase of standardization is to relate quality and utility to price and quantity in order to interpret value, render price-control effective, and eliminate the waste of resources which results from the production and distribution of needlessly diversified types of commodities.

Standard Grades for Meat.—The grading of meat was commenced in the Wellington district in November, 1943. The basis for the grading is the New Zealand Emergency Standard Specification for Grades of Meat for Sale on the Local Market and Definitions of Joints and Cuts, while the Board of Trade (Meat Grading) Regulations 1943 provide the machinery for the operation of the scheme. The citation of the Specification in the relevant Price Order ensures that consumers will obtain meat in accordance with the price fixed for the respective quality grades. Without such grading there is no effective means of ensuring that the consumer will not pay first-grade price for second- or even third-grade meat, which would amount to a charge of 25 per cent. or 56 per cent. respectively in excess of the proper price.

With the introduction of meat rationing on a value basis, the grading also ensures that consumers will obtain the full quantity of meat to which their coupon value entitles them, according to the grade they purchase. For example, taking the average price of first-grade meat at 8d. per pound, the weekly coupon value of 1s. 9d. entitles the customer to $2\frac{5}{8}$ lb. of first-grade meat, compared with over $3\frac{1}{4}$ lb. of second-grade, or over 4 lb. of third-grade.

Vegetable Grades.—During the year seven Standard Specifications were issued establishing grades for table swedes, table carrots, table parsnips, kumaras, pumpkin, cabbages, and silver beet. These Standard grades are available for use in contract purchasing by the Government and other public authorities and institutions. It is hoped that later it will be found possible to relate Standard grades to the marketing of these and other vegetables in a way that will provide a basis for their sale and purchase between grower and wholesale merchant, wholesaler and retailer, and retailer and ultimate consumer.

The use of Standard grades for fruit and vegetables in this way to facilitate the orderly distribution of these commodities was strongly recommended by the United Nations Food Conference which met at Hot Springs, Virginia, U.S.A., in May and June, 1943. The Conference recommended, *inter alia*, that—

> "The governments and authorities here represented take steps to ensure that producers and consumers are adequately protected against trade malpractices and against exploitation in the purchase and sale of food and other products of agricultural or marine origin and commend general and specific measures to prevent confusion as to quality and country of origin; and that the permanent organization above mentioned assist, if requested, governments and authorities to this end, and, if appropriate, formulate international codes of trade practices . . . "

The advantages of Standard grades as set out by the Conference are as follows:—

> "The primary purpose of grade standards is to improve the quality and permit the purchase and sale of commodities by description rather than by inspection of each lot by buyers and sellers. Such standards (1) supply the basis for a common language for describing the product marketed; (2) facilitate trading by minimizing misunderstandings concerning the quality of the products; (3) reduce losses from rejections and costs of arbitration; (4) facilitate price quotations and other market information on the basis of quality; (5) reduce or eliminate the costs of resampling or inspection in various stages of marketing; (6) improve the collateral value of warehouse receipts and thus reduce financing costs; (7) help buyers to obtain the qualities of products they need; (8) permit the distribution of the various qualities on the basis of their most advantageous outlets; and (9) facilitate payments to producers on the basis of quality, which, in turn, would encourage adjustments in the qualities produced on the basis of consumer demand."

Other Foodstuffs.—The Standards organization has maintained full collaboration with the Price Tribunal in making investigations in respect of other foodstuffs with the object of having suitable provisions relating to quality and utility included in the appropriate Price Orders when no regular Standard Specifications have been available for this purpose. The items of food to which attention has been given in this way include New-Zealand-grown citrus fruits, other fresh fruits, canned vegetables, rice, New Zealand wines, mineral waters, cordials, New-Zealand-grown walnuts and light meals.

Soap.—An Emergency Standard Specification establishing requirements in relation to laundry soaps, soap-powders, toilet soaps, and sand-soap was completed and issued during the year. This specification cites the relevant provisions of the Regulations under the Sale of Foods and Drugs Act, 1908, in respect of toilet and laundry soaps, and supplements these with requirements relating to sampling and testing and, in the case of laundry soap, the sizes of bars. The specification also establishes essential requirements and values in respect of the basic factors which determine the utility and suitability of sand-soap and soap-powder in relation to the various purposes for which they are used.

Clothing.—Three Emergency Standard Specifications have been completed for Men's Working Garments, Women's Full-length Circular Knit Hosiery, and Leather Dress Gloves. The Specification for Men's Working Garments defines the type of material from which they are to be manufactured and establishes uniform basic measurements for each garment size, thus avoiding variations which cause much inconvenience and loss of service life through inadequate measurements, or, alternatively, involve ill-fitting and waste of material through excessive measurements in relation to the given sizes. The same basic factors are covered by the specifications for Women's Full-length Circular Knit Hosiery and Leather Dress Gloves.

Standard basic measurements in relation to the size designations of other garments are being developed in response to the many representations that have been received from organizations representing consumers and, in particular, from the various women's organizations. It is hoped that it will be found possible to proceed with this work with the full co-operation of the manufacturing and trading interests concerned.

Footwear.—The fifteen Emergency Standard Specifications for Footwear have been revised during the year and supplemented by a specification establishing similar requirements relating to the basic factors which determine the quality and utility of men's and women's sandals. Work on the preparation of a specification for infants' footwear below size seven is proceeding.

Footwear Lasts.—With the fullest co-operation and assistance of the footwear industry, which is sound evidence of its earnest desire to give the best possible service to the general public, progress has been made in the development of a specification for footwear lasts. This matter is one of vital importance from the point of view of the health and physique of our people, in addition to which ill-fitting footwear is a source of serious annoyance to parents and others concerned with this problem. Also, from the economic viewpoint, ill-fitting footwear has not the same service life as correctly-fitting footwear.

The production of correctly-fitting footwear depends essentially upon the use of an adequate range of lasts which conform to correct, uniform, basic measurements. At present, in the absence of standardization, these basic measurements may, and often do unavoidably, differ as between one manufacturer and another, with the result that shoes designated the same size are not infrequently made to different basic measurements. The Standard Specifications, when completed, will incorporate a sufficient range of lasts, of varying widths in each size, to provide an adequate gradation of these basic measurements in relation to sizes to fit the wide range of differing feet measurements.

Household Furniture.—At the instigation of the Rehabilitation authorities, preliminary attention has been given to the formulation of a Standard Specification for household furniture which will provide a basis for the advancing of moneys to returned servicemen as part of the Government's rehabilitation programme. The initial work on this project has proceeded satisfactorily, and it is anticipated that it will be completed early during the ensuing year. The specification will establish minimum requirements in respect of the factors which determine the quality, utility, and suitability of the furniture for the purpose for which it is required, including such factors as the class and grade of timber, upholstery and other materials, features of basic construction such as timber dimensions and methods of jointing, and workmanship and finish. Care is being taken to formulate the specification in a way that will preserve freedom in design, style, and the expression of other aesthetic values. Both the workers' and the manufacturers' representatives are fully co-operating in this work, and are displaying a full appreciation of the benefit that will accrue to the industry from the development of a Standard Specification that will enable manufacturers to certify the quality of their products under the ægis of the Standard mark.

Miscellaneous Commodities.—A Simplified Practice for the Manufacture of Brushware and an Emergency Standard Specification for Flock have been issued. The development of specifications has also been undertaken for other items, including boot-polish, beeswax, starch, bags, and cotton and rayon textiles.

STANDARDIZATION AND POST-WAR RECONSTRUCTION

The work reported herein, together with similar work carried out in previous war years, in addition to having assisted the war effort through conservation of materials, man-power, and plant capacity—thus resulting in better organization of production and distribution—has established a basis that will similarly assist reconstruction in the post-war period. The co-ordination of specifications facilitates the concentration of production and distribution on the fewest types of commodities, consistent with

full satisfaction of legitimate needs and preferences. It therefore correspondingly reduces the production and distribution costs of the commodities and the related services, to which this principle is applied. This view of the value of the standardization activity that has been carried out under wartime necessity is soundly supported by most responsible, authoritative statements from overseas.

Reduced Production Costs

Some impressive examples of greatly reduced production-costs resulting from standardization are quoted by the British Institution of Production Engineers in support of the conclusions of this body, published in the *Economist*, 18th July, 1942, concerning the significant influence that standardization must have upon the post-war reconstruction, on the basis of what has been achieved in connection with war production. Six examples are quoted, relating to parts used in the manufacture of guns and the production of munitions and aircraft. According to the figures quoted, each £100 of production cost was reduced to £4 16s., £22 8s., £22 12s., £33 12s., £36, and £66 14s. respectively. Commenting on these conclusions, the Institution of Production Engineers draws attention to the substantial reductions in production-costs that are gained by the higher degree of specialization, facilitated by standardization, through a reduction in the redundant variety of products, only immaterially different, produced by individual firms.

In the same report Mr. Oliver Lyttelton, Minister of Production, is reported as having quoted six further examples showing similar reductions in production-costs, two of which amounted to 95 and 96 per cent. There seems to be no reason why similar reductions cannot be achieved in the production-cost of mechanized apparatus and equipment which will be required on a growing scale to satisfy normal peacetime requirements in relation to farm machinery, capital productive equipment, and domestic apparatus, including, for example, sewing-machines, vacuum-cleaners, and refrigerators.

That similar reductions in production-costs can be secured in the production of civilian goods such as clothing and footwear is established by a statement recently published in *The Times*, London, which reported an average increase in production, resulting from standardization and simplification estimated at some 20 to 30 per cent., while, in particular cases, such as certain types of men's underwear, it had amounted to from 200 to 300 per cent. This article also made it clear that, due to these results, a considerable amount of thought and attention was being devoted to the application of the same principles to peacetime production in the post-war period.

The importance of this aspect of standardization is further emphasized by Sir Thomas D. Barlow, Director-General of Civilian Clothing, who is reported to have stated: "Control and standardization are not synonomous. A minimum standard of quality, without any maximum, could," he said, "safeguard old and reputable manufacturing firms from the unjust criticisms cast upon them in pre-war days when they were the victims of unscrupulous competitors who produced rubbishy but cleverly presented goods, the wearing and other qualities of which were so bad that they reflected upon our textile industry in general. Control to the extent of fixing a minimum standard of fabric-construction," he continued, "should eliminate this, guarantee to the public a reliable investment for money spent, and yet permit every one to indulge in his or her tastes."

Still further endorsement of this view is contained in the *Times Trade and Engineering Supplement*, March, 1942, which states: "Distributors who know something about costing are admittedly surprised that these goods [*i.e.*, standardized underwear] can be sold at the regulated prices even in the light of the slender margin of profit allowed to everybody concerned. The explanation lies in standardization without uniformity. In this factor," the statement continues, "lies the lesson for post-war trade as well as for the present emergency, for it shows what extensive economies were practicable."

There is, therefore, cumulative evidence that standardization will exert an important influence on post-war production and competitive trade, in that the countries which apply this principle most extensively and successfully will enjoy the competitive advantage of correspondingly reduced production-costs and lower prices. One authority from the United States of America refers to this aspect of the post-war position in the following pertinent terms: "In winning this war through simplifying our industries, we shall enter the peace with a production and distribution system geared to the very highest point of efficiency for whatever competition we may face. Our present necessity may well prove to be our future security."

Assistance to Manufacturing Industries

The deduction is clear that the sound maintenance and expansion of the manufacturing industries within this Dominion during the post-war period, and the consequent opportunity for useful employment and rehabilitation, will depend upon the extent to which our internal market can be held against overseas competition, based on low-cost production. This position can be met only if our local manufacturers adopt the principle of standardization to the same extent as their overseas competitors, in order that they may derive the same competitive advantage of low-cost production. Moreover, there are many demands for apparatus, equipment, and commodities which in the past it has been necessary to import, but which could be economically manufactured here, were it not for the multiplicity of specifications to which these goods are ordered, only because the more sensible procedure of co-ordinating such specifications has not been instituted.

It is certain that, unless such specifications are drawn up in advance, the various producers, consumers, and other affected interests, including public authorities and other large-scale purchasers, will lay down their own requirements independently in respect of each commodity, with the result that there will be immaterial variations in specifications for the same commodities, the only effect of which will be

to reduce production, increase production costs, increase demands upon exchange funds, and handicap local manufacturers in meeting competition from overseas. The total effect would be to hamper and restrict the full realization of reconstruction and rehabilitation objectives.

The change-over to peacetime production and activity will be facilitated to the extent that we have determined in advance the classes and types of materials, apparatus, and general commodities upon which production should be concentrated during the reconstruction period. This can be effected only by the formulation of standard specifications, approved by all the interests concerned, which will ensure the most economic utilization of materials and productive capacity, consistent with proper regard for utility, durability, efficiency, and the general suitability of the commodities for the purposes for which they are required.

International Standardization

The same degree of co-operation and collaboration among the English-speaking countries with which standardization activity has been carried out during the war period will be necessary to enable all the countries concerned to derive its full value and advantage in the post-war period. To meet this position the British Standards Institution and the American Standards Association have initiated the establishment of a United Nations Standards Co-ordinating Committee, which, it is intended, should later become an international standards organization. Australia, Canada, China, Great Britain, New Zealand, South Africa, the Union of Soviet Socialist Republics, and the United States of America have been invited to become members of this body. At the time of writing it appears that all the countries, including New Zealand, have agreed to become members, although official confirmation has not yet been received in respect of China and the Union of Soviet Socialist Republics.

The functions of the United Nations Standards Co-ordinating Committee will be to maintain the co-operation and reciprocity among the standards organizations of the respective countries in order that each may derive the fullest assistance and value from the work carried out by the others. It will also give attention to the co-ordination of the specifications of the various countries concerned, with the object of simplifying and facilitating trade and commerce.

The foregoing statement appears to justify completely the conclusion that the wartime standardization activity of this Dominion, as the counterpart of the similar work carried out in the other English-speaking countries, is of vital importance in relation to the needs of the post-war period.

EXCHANGE OF SPECIFICATIONS AND RELATED DOCUMENTS

A regular exchange of Draft and Standard Specifications has been continued during the year. As a result of this exchange each country concerned has benefited from investigation and research carried out in the several other countries. Thus each individual country avoids the necessity of finding its own solutions to problems that have already been disposed of by the corresponding authorities overseas. In other words, the work associated with the war-production effort of each country not only makes its contribution within the country concerned, but contributes to a more effective war effort on the part of all the associated nations. This result is achieved because each national Standards organization is an integral part of a world-wide organization which has established procedure and machinery necessary to afford such reciprocal advantage and assistance. The generous co-operation and assistance which has at all times been received from overseas organizations, together with valuable information obtained from their various publications and documents, deserves the fullest appreciation.

Specifications received from other Countries

—	Standard Specifications.	Draft Specifications.	War Emergency Specifications.	Draft War Emergency Specifications.
British Standards Institution	68	24	62	20
Standards Association of Australia ..	40	7	36	..
Canadian Engineering Standards Association	6	..	2	..
South African Standards Institution ..	3	..	..	..
American Standards Association ..	120	..	38	..
U.S. Department of Commerce (National Bureau of Standards)	9	..	..	..
U.S. Treasury Department (Federal Standards)	269	..	119	..
Totals	515	31	257	20
Grand total	823			

CIRCULATION OF DRAFT AND STANDARD SPECIFICATIONS

Draft Standard Specifications

—	Great Britain.	Australia.	American Standards Association.	Totals.
Draft Standards received	44	7	..	51
Draft Standards circulated for comment by affected interests	18	..	..	18
Deferred pending receipt of final Standard	6	..	..	6
Still under consideration	38	7	..	45

Standard Specifications

—	Great Britain.	Australia.	American Standards Association.	Totals.
Standards received	68	29	120	217
Standards circulated for comment by affected interests	22	6	1	29
Unsuitable for New Zealand	2	..	..	2
Adopted as New Zealand Standard Specifications	6	..	..	6
Still under consideration	60	29	120	209

War Emergency Standard Specifications

—	Great Britain.	Australia.	American Standards Association.	Totals.
Standards received	62	36*	38	136
Circulated for comment by affected interests	30	..	..	30
Adopted as New Zealand Standards	5	..	..	5
Considered unsuitable for New Zealand	2	..	..	2
Still under consideration	55	36	38	129

* Mostly British Standards adopted as Australian Standards.

SALES OF STANDARD SPECIFICATIONS

Standard Specifications to a value of £928 3s. were sold during the year, as detailed in the following table :—

	Copies.	Amount. £	s.	d.
Original New Zealand Standard Specifications	2,608	262	14	0
New Zealand Emergency Specifications	7,715	158	8	6
New Zealand Emergency Specifications (being British A.R.P. Standards adopted)	34	0	14	6
New Zealand Standard Specifications (being British Standards adopted)	601	86	16	2
Total sales of New Zealand Standard Specifications	10,958	£508	13	2
Ordinary British Standards	2,184	329	10	0
British Standard A.R.P. Specifications	11	0	12	1
British Standard Aircraft Specifications	218	13	13	0
Australian Standard Specifications	189	23	14	0
Australian Reprints of D.T.D. Specifications	917	34	18	8
S.B.A.C. Standard sheets	1,088	14	13	9
Miscellaneous publications	7	2	8	4
Total	15,572	£928	3	0

ACKNOWLEDGMENTS TO MEMBERS OF COMMITTEES AND ORGANIZATIONS

In conclusion it is desired to acknowledge the valuable service, so generously given, by the committee members, and by many other persons representing Government Departments, local authorities, and industries, including the executive officers of commercial, industrial, and professional organizations. Although needs arising out of wartime conditions have made heavy demands upon their service and time, they have nevertheless continued to extend an unstinted measure of co-operation.

A. R. GALBRAITH, Chairman,
Standards Council.

APPENDIX

LIST OF NEW ZEALAND STANDARD SPECIFICATIONS ADOPTED DURING THE YEAR ENDING 31st MARCH, 1944

New Zealand Standard Specifications.		
95	New Zealand Standard Code of Building By-laws, Part IX: Light Timber Construction.	
401	Coal Tar Creosote for the Preservation of Timber.	
402	Fixed Capacitors; being B.S. 1082–1942.	
403	Short-time Testing of Light Alloys at Elevated Temperatures; being B.S. 1094–1943.	
404	Workhead Spindles for Internal and Universal Grinding Machines, including Plain Grinding Machines with Live Spindles; being B.S. 1089–1942.	
405	Sockets for Wire Ropes for General Engineering Purposes; being B.S. 463–1943.	
406	Cold Forged Mild Steel Rivets for Cold Closing; being B.S. 1109–1943.	
407	Aluminium Bronze Ingots; being B.S. 1031–1942.	
408	Aluminium Bronze Castings; being B.S. 1032–1942.	
409	High Tensile Aluminium Bronze Ingots; being B.S. 1072–1942.	
410	High Tensile Aluminium Bronze Castings; being B.S. 1073–1942.	
411	Radio-interference Suppression for Automobiles and Stationery Internal-combustion Engines (Limits and Methods of Suppression); being B.S. 833–1939.	
412	Traction Lamps (Series Burning), (Original Text of N.Z.S.S. 123—B.S. 555–1935); being B.S. 867–1939.	
413	Method of Testing Dust Extraction Plant and the Emission of Solids from Chimneys of Electric-power Stations (including Amendment No. 1 P.D. 26); being B.S. 893–1940.	
414	Electric Lamp Bulbs for Automobiles (6 V. and 12 V. Bulbs for Head, Side, and Rear Lamps), (including War Emergency Amendment No. 1 P.D. 16); being B.S. 941–1941.	
415	Leaded Bronze Ingots 85/10/0/5; being B.S. 960–1941.	1 volume.
416	Leaded Bronze Castings 85/10/0/5; being B.S. 961–1941.	
417	Leaded Bronze Ingots 80/10/0/10; being B.S. 962–1941.	
418	Leaded Bronze Castings 80/10/0/10; being B.S. 963–1941.	
419	Leaded Bronze Ingots 76/9/0/15; being B.S. 964–1941.	
420	Leaded Bronze Castings 76/9/0/15; being B.S. 965–1941.	
421	Hard-drawn Phosphor Bronze Wire; being B.S. 38–1941.	
422	Cast Iron, Data on; being B.S. 991–1941.	
423	Fastness to Light of Textiles—Part 1: Method of Test. Part 2: Fastness to Light of Coloured Textiles (Reference Standard); B.S. 1006–1942.	
424	Exciter Lamps for 35 mm. Projectors; being B.S. 1015–1942.	
425	Cathode Copper; being B.S. 1035–1942.	
426	Electrolytic Tough Pitch High Conductivity Copper; being B.S. 1036–1942.	
427	Fire Refined Tough Pitch High Conductivity Copper; being B.S. 1037–1942.	
428	99·85 per cent. Tough Pitch Copper (Conductivity not specified); being B.S. 1038–1942.	
429	99·75 per cent. Tough Pitch Copper (Conductivity not specified); being B.S. 1039–1942.	
430	99·50 per cent. Tough Pitch Copper (Conductivity not specified); being B.S. 1040–1942.	
431	Visual Indicator Lamps for Use on Telephone and Telegraph Switchboards and for Allied Purposes; being B.S. 1050–1942.	
432	Engineers' Comparators for External Measurement; being B.S. 1054–1942.	
433	Welded Joints in Copper Vessels; being B.S. 1077–1942.	
434	Round Strand Galvanized Steel Wire Ropes for Shipping Purposes; being B.S. 365–1942.	
435	The Determination of the Flow and Drop Points of Fats and Allied Substances Apparatus and Methods of Use; being B.S. 894–1940.	
436	Manganese Steel Gas Cylinders for Atmospheric Gases; being B.S. 1045–1942.	

NEW ZEALAND EMERGENCY STANDARD SPECIFICATIONS

New Zealand Standard Specifications.	
E. 79	Grades of Meat for Sale on the Local Market and Definitions of Joints and Cuts.
E. 109	Pure Concentrated Ammonia Solution.
E. 110	Single Loop Bale Wires.
E. 111	Safety Matches.
E. 112	Pre-cast Concrete Drainage Pipes.
E. 113	Recommended Designs for Gauges; being B.S. 1044–1942.
E. 114	Soft Solder.
E. 115	Calcium Carbide.
E. 116	Zinc Base Alloys for Die-casting.
E. 117	Brass Rods for Cold Riveting.
E. 118	Soaps.
E. 119	Vegetable Parchment for Butter Wrapping.
E. 120	Simplified Practice for the Manufacture of Brooms, Brushes, and Mops.
E. 121	Table Swedes.
E. 122	Table Carrots.
E. 123	Table Parsnips.
E. 124	Kumaras.
E. 125	Pumpkins.
E. 126	Cabbages.
E. 127	Silver-beet.
E. 128	Oxalic Acid (Technical Grade).
E. 129	Turpentine.
E. 130	Hydroquinone (Paradihydroxybenzene).
E. 131	Aluminium Alloy (" Y " Alloy).
E. 132	Aluminium Powder (Aluminium-bronze powder).
E. 133	Metol (mono-methyl-paraminophenol sulphate).
E. 134	Brass Gravity Die Castings; being B.S. 932–1940.
E. 135	Centrifugal and Axial Flow Pump Specifications and Data required for Estimates and Orders; being B.S. 994–1941.
E. 136	Book Papers, Fine Writing-papers, Chemical Wood Pulp Tablet Paper, White Wove Envelope Paper (excluding Extra Strong Sulphate).
E. 137	Cotton Mops.
E. 138	Paper Insulated 250 Volt Cables for Internal Wiring; being B.S. 1068–1942.
E. 139	Men's Working Garments.
E. 140	Paint for Use on Service Vehicles.
E. 141	Paraffin Wax.
E. 142	Ingot Tin.
E. 143	Terne Plate (Long Ternes).
E. 144	Lubricating-cup Greases of the Lime Base Type.
E. 145	Sulphuric Acid.
E. 146	Insulated Cleat Wire; being B.S. 1096–1943.
E. 147	Flock.
E. 148	Men's and Women's Sandals.
E. 149	Rubber Conveyer and Elevator Belting; being B.S. 490–1943.
E. 150	Dimensions of Drilling Jig Bushes; being B.S. 1098–1943.
E. 151	Rubber Joint Rings for Gas Mains; being B.S. 772–1942 (superseding B.S. 772–1938, N.Z.S.S. 200).
E. 152	Rubber Joint Rings for Water-mains and Sewers; being B.S. 674–1942 (superseding B.S. 674–1936, N.Z.S.S. 110).

REVISED NEW ZEALAND STANDARD SPECIFICATIONS

N.Z.S.S. 80 B.S. 173–1941	Traction Motors and Associated Rotating Electrical Machines for Use on Rail or Road Vehicles.
N.Z.S.S. 160 B.S. 88 1939	Electric Fuses up to 800 Amperes and 250 Volts to Earth.
N.Z.S.S. 158 B.S. 161–1940	Tungsten Filament General Service Electric Lamps.

REVISED NEW ZEALAND WAR EMERGENCY STANDARD SPECIFICATIONS

N.Z.S.S. E. 84 Nylon Tooth-brushes.
N.Z.S.S. E. 104 Simplified Practice for the Manufacture of Household Furniture.

Approximate Cost of Paper.—Preparation, not given; printing (1,200 copies), £28.

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