

1942.
NEW ZEALAND.

NEW ZEALAND STANDARDS COUNCIL.

(DEPARTMENT OF INDUSTRIES AND COMMERCE.)

ANNUAL REPORT FOR THE YEAR 1941-42.

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, 1942.

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 order to conserve paper and resources, in accordance with the general policy that has been adopted to satisfy the exigencies of war conditions, this report of the Standards Council for the year ending 31st March, 1942, appears in condensed form omitting references to personnel of the Council and other than general particulars of activities of the Committees.

THE STANDARDS ACT.

Since the last annual report was presented the Standards Act, 1941, has been enacted and the functions of the standards organization are now carried out in accordance with the provisions of this statute.

MEETINGS OF COMMITTEES.

One hundred and fifty-two (152) meetings of the various committees were held during the year. This exceeds the number that has taken place during any previous year, in addition to which there have been very many conferences and other consultations as alternatives to formal committee meetings. In common with other Empire countries and the United States of America, this procedure has been adopted in order to expedite the formulation of War Emergency Standards, for which there has been heavy and urgent demand, while at the same time preserving the principle of necessary consultation and collaboration with Government authorities and other substantially interested parties.

WAR EMERGENCY STANDARDS.

Seventy (70) War Emergency Standards have been completed. These are listed in detail in a later section of this report. The object and purpose of these Standards is to specify the classes and qualities of material and commodities to be used in the production of essential goods of a defined type. This represents the only effective means of preventing the use of essential materials in proportions, or for purposes, including a wasteful redundancy in types, which would amount to a dissipation of our resources that would impede the war effort.

LOCAL PRODUCTION.

Forty-four (44) of the Emergency Standards relate directly to local production, the purpose of which is to conserve materials and man-power and maximize essential production within the limits imposed by war emergency exigencies. Emergency Standards are also a valuable means of securing the general use of substitute materials where materials normally used are in short supply or are no longer available. Moreover, they effectively eliminate unnecessary varieties in types, patterns, and dimensions, which otherwise would make heavy demands upon man-power and materials and considerably restrict production. Indeed, such Standards are the only effective means of ensuring that productive effort is concentrated upon commodities which will secure the most economic use of the materials and labour employed. This is well exemplified by Henry Ford's definition of a standard, as follows: "Standardization in its true sense is the union of all the best points of commodities with all the best points of production, to the end that the best commodity may be produced in sufficient quantity and at the least cost to the consumer."

The following two examples taken at random soundly evidence the importance and value of this aspect of standards activity:—

Milking-machine Rubberware.—The adoption of a standard specification for milking-machine rubberware will result in a saving of approximately 30 tons, or 25 per cent., of the raw rubber used for this purpose.

Bolts and Nuts.—A manufacturer of bolts and nuts states that the production cost of special lines to individual specifications is increased by 50 to 75 per cent. as compared with the standard lines.

The vital importance of such considerations as a means of securing increased war production is emphasized by Donald M. Nelson, Chairman of the War Production Board, U.S.A., in the following statement reported in *Industrial Standardisation* of August, 1941. He says: "The production capacity of the United States for defence could be increased from 25 to 33½ per cent. through the elimination of unnecessary varieties, sizes, types, grades, qualities, &c., of civilian needs."

Similar stress is given to this aspect of standardization in the following statement by Lessing J. Rosenwald, Chief, Office of Production Management, Bureau of Industrial Conservation, U.S.A., as reported in *Industrial Standardisation* of January, 1942: "The purpose of this Bureau," he states, "is primarily to eliminate waste in its many and varied forms, and to aid in making the 'critical' materials serve their best uses and stretch out as far as possible; as well as to endeavour to find adequate substitutions for them when we can. . . . Simplification, or simplified practice, is one means of bringing this about. . . . In many cases 20 per cent. of the sizes, we will say, will take care of 80 per cent. or more of the demand. . . . I realize the importance of standards and standardization. All of our manufacturing efforts depend on proper standards. We could not get along without them. We need minute and detailed standard measurements and specifications because they are vital."

OVERSEAS PURCHASING CO-ORDINATION STANDARDS.

A Specifications Co-ordination Committee has been set up during the year to undertake the co-ordination of Emergency Standards for commodities which now have to be obtained from different overseas sources on account of these supplies being no longer available from the normal sources of supply. The committee consists of representatives of the Ministry of Supply, the Railways, Public Works, and Post and Telegraph Departments, and the Standards Institute. At the end of the period under review twenty-three (23) Emergency Standards and twenty-one (21) Purchasing Directions had been issued.

With a view to facilitating the procurement of commodities vital to the prosecution of the war effort it has become necessary to examine the specifications in use in New Zealand and to correlate these with those in use in the countries whence our requirements of essential commodities must now be secured. Sources of supply of essential materials, equipment, and commodities are undergoing changes which inevitably produce confusion unless something is done to replace individual specifications—some of which are so vague as to be of little value—with national specifications which, as far as practicable, are co-ordinated with the relevant specifications in use in those countries which have become the new sources of supply.

CIVIL DEFENCE.

Twenty-six (26) of the Emergency Standards issued during the period under review relate to civil defence and the emergency precautions services. These include raid shelter, emergency fire-fighting equipment, first aid, protection against flying glass, and other war hazards. Each of these Emergency Standards is based extensively upon reports incorporating the latest experience in Great Britain, modified as necessary to meet New Zealand conditions.

BUILDING BY-LAWS.

Demands made upon committee members and staff by urgent emergency projects has necessarily somewhat arrested progress in connection with the standardization of building by-laws. Attention has, however, been given to Part XIV, "Means of Egress," of the Standard Code of Building By-laws, for which there is an urgent need. The formulation of this Part has been completed, and it is about to be submitted for legal scrutiny. During the year a draft Standard Code of Plumbing and Drainage By-laws was also completed and circulated to interested parties for comment.

COMMODITY STANDARDS.

In accordance with the economic stabilization policy, a comprehensive programme of commodity standardization has been undertaken, embracing essential foodstuffs, clothing, and household commodities. Emergency Standards have been completed for fifteen basic lines of utility footwear; and for

heels for women's footwear. Draft standard specifications for toilet and laundry soaps, soap-powder, and sand-soap have been completed. Emergency Standards are also in course of preparation for grades and definitions of meat for the retail market; bread; toilet, industrial, and household brushware; textiles; clothing and garment sizes.

The work on commodity standards is being carried out under the direction of a Commodity Divisional Council, representative of the appropriate Government authorities, manufacturers, wholesalers, retailer and consumer interests, including women's organizations.

Advantages which result from this activity may be summarized as follows :—

- (a) To relate the factors of quality and utility to the factors of price and quantity, as a means of interpreting value :
- (b) To render price-control effective :
- (c) To discourage the sale of deleterious commodities and goods which are below marginal utility :
- (d) To eliminate the waste of materials and resources arising from the production and distribution of needlessly diversified types of goods.

The active co-operation of other Government authorities and those engaged in industry and commerce, and in the professions, in this work, renders an invaluable service to the country and to the war effort.

EMERGENCY DIVISIONAL COUNCIL.

The development of Emergency Standards is carried out under the authority and supervision of an Emergency Divisional Council appointed by the Standards Council to direct and expedite this work. Appropriate Departments of State, the Manufacturers' Federation, the Emergency Precautions Services, and local authorities are represented on the Emergency Divisional Council.

SPECIFICATIONS ADOPTED AS NEW ZEALAND STANDARDS.

Nine original Standard Specifications and three British Standard Specifications were adopted during the year, which increases the total number of New Zealand Standard Specifications to 357.

NEW ZEALAND EMERGENCY STANDARD SPECIFICATIONS.

Seventy (70) Emergency Standards have been adopted, as follows :—

Original New Zealand War Emergency Standards	49
British War Emergency Standard Specifications	3
British Standard A.R.P. Specifications	18
Total	70

SPECIFICATIONS RECEIVED FROM OTHER COUNTRIES.

	Standard Specifications.	Draft Specifications.	War Emergency Specifications.	War Emergency Draft Specifications.
British Standards Institution	60	38	85	9
Standards Association of Australia	10	4	149	..
Canadian Engineering Standards Association	10	Nil	..	..
South African Standards Institution	Nil	Nil	..	..
American Standards Association	2	1	..	..
American Society for Testing Materials	376	..	..	..
U.S. Treasury Department (Federal Standards)	43	..	..	..
U.S. Department of Commerce (National Bureau of Standards)	7	..	..	..
National Electrical Manufacturers' Association (U.S.A.)	3	..	..	..
Society of Automotive Engineers (U.S.A.)	47	..	..	..
Totals	558	43	234	9
Grand total	844			

Other publications received, including reports and data relating to standardization, number 385, which, together with 844 Standard Specifications, total 1,279 documents received.

CIRCULATION AND EXCHANGE OF SPECIFICATIONS AND RELATED DOCUMENTS.

The regular machinery for the exchange of specifications and related information makes the results of the investigations and work of each country available to the others. This avoids much wasteful

duplication of effort which otherwise would quite unnecessarily absorb the time and effort of competent people in the different spheres and activities covered by these documents.

Pertinent to this aspect of Standards activity are the recommendations contained in a report by Sir Alexander Roger on the findings of the British Supply Mission which, early in 1941, made an exhaustive investigation of Australia's war effort. These recommendations are recorded in the *Australian Manufacturer* of 20th September, 1941, as follows :—

“ (1) Closer relationship between design, which is the responsibility of the Army ; and production, which is in the hands of engineers.

* * * * *

“ (4) Interchange of ideas, processes, drawings, and specifications between manufacturers of munitions in countries within the Empire.

“ (5) Substitution of materials more readily available for those in short supply.

“ (6) The adoption of the simplest processes to obtain maximum production.”

These recommendations could be effectively carried out only with the aid of standards procedure.

The valued co-operation and assistance which has characterized relationships with overseas standards organizations during previous years has continued. Full appreciation and acknowledgment should be recorded in recognition of the valuable assistance obtained from the various documents, publications, and general information received from the following organizations :—

- British Standards Institution.
- Canadian Engineering Standards Association.
- Standards Association of Australia.
- South African Standards Institution.
- Council of Scientific and Industrial Research (Australia).
- American Standards Association.
- American Society for Testing Materials.
- U.S. Department of Agriculture (Consumers' Counsel Division).
- U.S. Treasury (Procurement Division).
- National Electrical Manufacturers' Association (U.S.A.)
- Pacific Coast Building Officials Conference.
- Society of Automotive Engineers (U.S.A.).

British, Australian, and United States Draft, Standard, and War Emergency Specifications to a total number of three hundred and forty-seven (347) were received during the year, as shown in the following tables :—

Draft Standard Specifications.

—	Great Britain.	Australia.	American Standards Association.	Totals.
Draft Standards received	38	4	1	43
Draft Standards circulated for comment by affected interests	30	4	1	34
Considered unsuitable for adoption as New Zealand Standards	1	..	..	1
Still under consideration	37	4	1	42

Standard Specifications.

—	Great Britain.	Australia.	Totals.
Standards received	60	10	70
Standards circulated for comment by affected interests	53	5	58
Unsuitable for New Zealand	1	4	5
Still under consideration	59	6	65

War Emergency Standard Specifications.

—	Great Britain.	Australia.	American Standards Association.	Totals.
Standards received	85	149*	2	236
Circulated for comment by affected interests	85	14	2	101
Adopted as New Zealand Standards	21	..	..	21
Considered unsuitable for New Zealand	25	..	..	25
Still under consideration	39	135	2	176

* Mostly British Standards adopted as Australian Standards.

ORIGINAL DRAFT NEW ZEALAND STANDARDS.

Eight (8) original draft New Zealand Standard Specifications were circulated for comment. Of these, one has been adopted as a New Zealand Standard, while the adoption of another has been deferred and an Emergency Standard has been issued meanwhile. Work on the remainder is proceeding.

SALES OF STANDARD SPECIFICATIONS.

Standard Specifications to a value of £931 11s. 5d. were sold during the year, as detailed in the following table :—

	Copies.	Amounts.		
		£	s.	d.
Original New Zealand Standards	470	63	5	0
New Zealand Emergency Standards	9,688	484	8	0
New Zealand Standards (being British Standards adopted)	647	97	0	6
Total sales, New Zealand Standards	10,805	644	13	6
British Standard Specifications (not adopted as New Zealand Standards) 1,800		268	16	0
British Standard Aircraft Specifications	100	6	5	9
British Standard A.R.P. Specifications	189	4	2	2
Australian Standard Specifications	106	7	14	0
Total sales	13,000	931	11	5

PROJECTS IN HAND.

The following projects are under consideration :—

(a) *Active*—

(i) Regular Standards—

- Building Bricks.
- Salt Glazed-ware Pipes.
- Earthenware Roofing Tiles and Code of Practice for Fixing.
- Concrete Roofing Tiles and Code of Practice for Fixing.
- Ratings and Methods of Test for Heating Elements for Hot Water Containers.
- Toilet and Laundry Soaps, Soap-powders and Sand-soap.
- New Zealand Standard Code of Building By-laws. (Parts I–VI already issued).
- New Zealand Standard Code of Plumbing and Drainage By-laws.

(ii) Emergency Standards—

- Chemical Reagents.
- Ready-mixed Paints.
- White Traffic Paint.
- Grades of Meat for Sale on the Local Market.
- Bread.
- Toilet Brushware.
- Household and Industrial Brushware.
- Toilet Paper.
- Footwear.
- Textiles.
- Garment Sizes.
- Milking Machine Rubberware.
- Army Stretchers.

(b) *Temporarily in Abeyance*—

- Standard Code of Cost Accounting Terminology.
- Office Furniture for Government Departments.
- Deaf Hearing-aid Equipment and Batteries.
- Timber Insecticides.
- Drum Plugs.
- Water Closet Pans.

(c) *Deferred*—

- Fibrous Plaster Products.
- Milking Machine Parts.

ACKNOWLEDGMENTS TO MEMBERS OF COMMITTEES.

In conclusion, it is desired to acknowledge and place on record appreciation of the valuable service rendered by the members of the committees and by the many other persons representing Government Departments, local authorities, the professions, trades, and industries, including the executive officers of commercial, industrial, and professional organizations, all of whom have contributed so generously in time and effort towards the work reviewed in this report. Although exigencies arising out of war conditions have made onerous demands upon their time and services 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, 1942.

N.Z.S.S.	
351	Regenerated Lubricating Oil.
352	Code of Practice for Road Traffic Control Signals.
353	Reinforced Concrete Pressure Pipes.
354	Ceiling Roses made of Synthetic Resin Mouldings, for Use on 250 Volt Circuits.
355	Portable Chemical Fire-extinguishers of the Foam Type.
356	Portable Chemical Fire-extinguishers of the Carbon Tetrachloride Type (One Quart Capacity).
357	(Deferred.)
358	Pale Boiled Linseed Oil.
359-360	Leaded Gunmetal Castings and Ingots—
(1 vol.)	359. 87/9/3/1. Leaded Gunmetal Ingots ; being B.S.S. 900-1940.
	360. 87/9/3/1. Leaded Gunmetal Castings ; being B.S.S. 901-1940.
361	Rubber Hose with Woven Fabric Reinforcement ; being B.S.S. 924-1940.
362	School Paper Stationery.
363	Domestic Electrical Refrigerators.

NEW ZEALAND EMERGENCY STANDARD SPECIFICATIONS.

N.Z.S.S.	
E. 1	Stretchers for Ambulance Purposes.
E. 2	Domestic Raid Shelters.
E. 3	Galvanized Iron or Steel Binding Wire.
E. 4	Steel Sheets for Transformers.
E. 5	Tinplate.
E. 6	Galvanized Barbed Steel Fencing Wire.
E. 8	Black and Hot Dipped Zinc-coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses.
E. 9	Seamless Steel Boiler Tubes for High Pressure Service.
E. 10	Lap-welded and Seamless Steel and Lap-welded Iron Boiler Tubes.
E. 11	Stranded Galvanized Steel Guy and Messenger Wire.
E. 12	Hard-drawn Copper Wire.
E. 13	Zinc-coated (Galvanized) Iron or Steel Telephone and Telegraph Line Wire.
E. 15	Plain Galvanized Steel Fencing Wire.
E. 16	Tempered Steel Spring Wire.
E. 17	Heels for Women's Footwear.
E. 18	Rolled Steel Bars for Concrete Reinforcement.
E. 19	Cold Drawn Steel Wire for Concrete Reinforcement.
E. 20	Structural Steel for Shipbuilding.
E. 21	Structural Steel for Bridges and General Building.
E. 22	Cold Rolled Mild Steel Strip.
E. 23	Copper Tape (Annealed).
E. 24	Copper Wire (Annealed).
E. 25	Cadmium-copper Wire (Hard Drawn or Annealed).
E. 26	Cadmium-copper Tape (Annealed).
E. 28	Standard Code for Raid Shelter.
E. 28/1	Supplement No. 1 to Code for Raid Shelter: Review and Discussion in the Light of Recent Information, together with Notes on the Protection of Window Openings.
E. 29	Naval Brass Die Castings ; being B.S.S. 924-1940 (War Emergency).
E. 30	Steel Tubes and Tubulars, Light and Heavy Weight Qualities (Revised Weights) ; being B.S.S. 789A-1940 (War Emergency).
E. 31	Stirrup Pump Fire-extinguishers.
E. 32	Ready-mixed Paints for Finishing Coats for Woodwork (White and Light Tints).
E. 33	Code of Practice for Protection against Flying Glass.
E. 34	Girls' and Maids' Black Chrome Yearling Lace Shoes.
E. 35	Girls' and Maids' Black Chrome 1-bar Shoes.
E. 36	Boys' and Youths' Black Chrome Lace Boots.
E. 37	Boys' and Youths' Black Chrome Lace Shoes.
E. 38	Men's Black Chrome Lace Boots.
E. 39	Men's Black Chrome Lace Shoes.
E. 40	Men's Water-proofed Printed and Plain Chrome Lace Boots.
E. 41	Men's Black or Brown Yearling Lace Shoes.
E. 42	Men's and Youths' Black or Brown Chrome Albert Slippers.
E. 43	Men's Split and Kip Working Boots.
E. 44	Women's Calf Gusset Court Shoes (Black, Brown, or Blue).
E. 45	Women's Calf Tie Shoes (Black, Brown, or Blue).
E. 46	Women's Yearling Lace Shoes.

NEW ZEALAND EMERGENCY STANDARD SPECIFICATIONS—*continued*.

N.Z.S.S.

- E. 47 Women's Black Chrome 1-bar Ward Shoes.
- E. 48 Children's Sandals.
- E. 49 Wrought Steels ; being B.S.S. 970-1941 (War Emergency).
- E. 50 Bucket Pumps.
- E. 51 Ready-mixed Paint for Priming Coats for Woodwork, excluding Totara
- E. 52 Ready-mixed Paints for Undercoats for Woodwork.
- E. 53 Bituminous Paint and Bituminous Compound for the Protection of Steelwork ; being B.S.S./ARP. 2.
- E. 54 A Fitted Cistern for the Decontamination of Anti-gas Oilskin Clothing ; being B.S.S./ARP. 4.
- E. 55 Chemical Closets for Use in Shelter Accommodation ; being B.S.S./ARP. 5.
- E. 56 Rubber Gaskets for Rendering Doors and Windows Gastight ; being B.S.S./ARP. 10.
- E. 57 Petroleum Jelly for Sealing Gastight Doors, &c. ; being B.S.S./ARP. 12.
- E. 58 Adjustable Hinge ; being B.S.S./ARP. 19.
- E. 59 Obscuration Value for Textile Material for Curtains and Method of Testing ; being B.S.S./ARP. 23.
- E. 60 Testing Incombustible Material Resistant to Incendiary Bombs ; being B.S.S./ARP. 27.
- E. 61 Ventilation for Buildings in Conditions of Black-out, General ; being B.S.S./ARP. 31.
- E. 62 A Closet for Use in Air Raid Shelters ; being B.S.S./ARP. 43.
- E. 63 Testing Incombustible Material to Provide a Minimum Standard of Protection Against Incendiary Bombs ; being B.S.S./ARP. 47.
- E. 64 A Simple Portable Standard of Brightness (including notes on the measurement of low values of brightness) ; being B.S.S./ARP. 52.
- E. 65 Adhesive Tape for Repairing Gasproofing Material, Repairing Damaged Material, Sealing Apertures and Cracks, &c. ; being B.S.S./ARP. 11.
- E. 66 Window Blind Material (Paper) ; being B.S.S./ARP. 14.
- E. 67 Traffic Paints ; being B.S.S./ARP. 38.
- E. 68 Testing Fire Retardent Timber Treatment by Exposure to Action of Incendiary Bomb ; being B.S.S./ARP. 39.
- E. 69 Methods of Providing for Even Illumination of Low Intensity (0.2 foot-candles) ; being B.S.S./ARP. 21.
- E. 70 Fluorescent and Phosphorescent Paint (excluding Radio-active Materials) for A.R.P. Purposes ; being B.S.S./ARP. 18.
- E. 71 Black Nuts and Bolts.
- E. 72 Recommendations for the Installation, Maintenance, and Operation of First-aid Fire-extinguishers.

NEW ZEALAND STANDARD WAR EMERGENCY PURCHASING DIRECTIONS.

N.Z.S.S.

- P.D. 1 (Withdrawn.)
- P.D. 2 (Withdrawn.)
- P.D. 3 (Superseded by N.Z.S.S. E. 22.)
- P.D. 4 (Superseded by N.Z.S.S. E. 19.)
- *P.D. 5 Steel for Heel Tips for Army Boots.
- *P.D. 6 Hollow Drill Steel for Use in Metalliferous Mines.
- *P.D. 7 Steel Bars for the Manufacture of Collars for Shafting.
- *P.D. 8 " Monel " Metal Sheets for the Manufacture of Hospital Sterilizers.
- P.D. 9 (Superseded by N.Z.S.S. 23.)
- *P.D. 10 Galvanized Corrugated Roofing Sheets and Plain Galvanized Sheet.
- *P.D. 11 Soft Brass Rod for Riveting.
- *P.D. 12 Antimony Ingots.
- *P.D. 13 3% Nickel-steel Round Bars (Annealed).
- *P.D. 14 Special Self-hardening Tool Steel (Armstrong).
- P.D. 15 (Superseded by N.Z.S.S. E. 22.)
- *P.D. 16 Enamelling Quality Steel Sheets.
- *P.D. 17 Stainless Steel Sheets.
- *P.D. 18 Cast Steel for the Manufacture of Cutlery.
- *P.D. 19 Black Steel Bars.
- *P.D. 20 Bright Steel Shafting.
- *P.D. 21 Hot Rolled Black Steel Sheets.

* Purchasing directions covering orders placed in North America.

Approximate Cost of Paper.—Preparation, not given ; printing (957 copies), £12 10s.

By Authority: E. V. PAUL, Government Printer, Wellington.—1942.

Price 6d.]

