



STANDARDS YEARBOOK 1927

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ANNOUNCEMENT

HE STANDARDS YEARBOOK represents an effort T is to present an adequate picture of the diversification and ramification of the standardization movement which has spread throughout the world with aston-

which has spread throughout the world with astonishing vitality during the 25 years that have elapsed since the establishment of the National Bureau of Standards. It contains outlines of the activities and accomplishments of not only this bureau and other agencies of the Federal Government and the States and municipalities, but also of the American societies and associations of which standardization is a major or very important activity. Descriptions and illustrations are presented of all the fundamental national standards of the United States. Moreover, outlines are given of the various foreign national and the several international standardizing agencies.

In a general review of the standardization movement in America attention is directed to the remarkable growth in the activities of the trade associations, the development of "massproduction," method of factory production, and to the vital interest now being shown in standardization by industrial executives. Noteworthy in the trend of the development of standards is the process based on the elimination of excess varieties and sizes which is supplementary to the slower process involving technical consideration. A development of no little importance is the substitution of performance, or service, requirements for composition specifications in certain lines of manufacture.

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Associations. X. Testing and Certification for

the Consumer

To manufacturers, industrial experts, engineers, and purchasing agents, both governmental and general; to all officers and agencies concerned with standardisation, the Standards Yearbook will be most valuable. It will inform the manufacturer of the current standardization movements affecting his industry. It will inform purchasing agents of new standard specifications and will inform the scientist engaged in research as to current research projects which may lead to standardization. To the average reader it will prove a mine of information on the present status and trend of standardization in all fields of industry, commerce, adence, and Government, with references to sources of further information.

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BUREAU OF STANDARDS George K. Burgess, Director

CIRCULAR OF THE BUREAU OF STANDARDS, No. 319 [2d ed. Issued July 21, 1927]

ALPHABETICAL INDEX AND NUMERICAL LIST

OF

UNITED STATES GOVERNMENT MASTER SPECIFICATIONS

PROMULGATED BY THE

FEDERAL SPECIFICATIONS BOARD

(Complete to June 10, 1927) Supersedes Miscellaneous Publication No. 73



UNITED STATES GOVERNMENT PRINTING OFFICE WASHINGTON 1927

FEDERAL SPECIFICATIONS BOARD

In 1921 the Federal Specifications Board was established for the purpose of coordination and economy in the procurement of material and services used by the Government under specifications prepared in the various branches thereof, to avoid duplication of effort, and for the better utilization of resources and industries. To this board was assigned the duty of compiling and adopting standard specifications for materials and services and of bringing the specifications into harmony with the best commercial practice

wherever conditions permit, bearing in mind the desirability of broadening the field of supply.

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number should be given, thus, 243a ("a" indicates a first revision, "b" a second revision, and so on).

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ALPHABETICAL INDEX OF SPECIFICATIONS

Title	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.
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Aggregate, coarse, for Portland cement concrete pavement or	454		dampproofingAsphalt varnish	85 19	C160 C104
base (stone, slag, and gravel) Aggregate, fine, for Portland ce- ment concrete pavement or base (sand, etc.)			*Bacon (meat and meat food products)	267	
base (sand, etc.)	464		Bag, ice, helmet shaped Bags, ice, rubber Bags, Politzer	$216 \\ 217 \\ 218$	C228 C227 C222
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Aluminum ingot Amalgam, dental, alloy Ammonium chloride (sal ammo-	$\begin{array}{c} 134 \\ 356 \end{array}$		Bands, rubber Barley (feeds and forage)	64a 25b	C284
niac) *Apples, fresh, canned, evapo- rated, butter, and sauce (fruits	446		*Barley, pearl (cereals and cereal products) Bars, chisel, crow and pinch	317	
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Asbestos and asphalt roofing, prepared, slate-surfaced Asbestos copper gaskets, corru-	423		plates, sheets, and strips (Ger- man silver) Bases, cutout	468 55	
gatedAsbestos high-pressure rod pack- ing	93 103a	 C238	Bases, cutout Bathubs (plumbing fixtures for land use) (price, 15 cents) *Beans, dry and canned (miscel-	448	C310
Asbestos metallic cloth gaskets Asbestos metallic cloth sheet	97b 94b	C242 C243	*Beans, lima, green or wax; string	389	
Asbestos millboard	54		(vegetables) Bed, general service	271 185	
Asbestos plaster, magnesia Asbestos sheet packing, com- pressed	211 96b	 C241	Bed, hospital, standard Beds, surgical *Beef, fresh, corned and dried	186 187a	
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Asphalt for mineral surfaced roofing	84	C159	gooseberries, strawberries, rasp- berries, cranberries, and logan- berries (fruits and fruit prod-		
Asphalt, petroleum, for joint filler (squeegee or pouring method) type PAF-1-25	277		ucts) Bibbs (plumbing fixtures for land use) (price, 15 cents)	270 448	 C310
Asphalt plastic cement Asphalt prepared roofing	380 214	C192	*Biscuit (cereals and cereal prod-		0310
Asphalt prepared roofing and shingles, slate-surfaced	,296	C285	ucts) Bituminous built-up roofing, sur- facing materials for	317 82	 C158
Asphalt primer for roofing and waterproofing. Asphalt-saturated rag felt for	87	C162	Blades, hacksaw Board, gypsum plaster Board, gypsum wall	415 285 284	C210 C211
flashings Asphalt-saturated rag felt for	295	C286 C161	Boats, gravy (tableware, silver-		0211
roofing and waterproofing Asphalt-saturated woven cotton fabric for waterproofing	86 294	C161 C287	plated) Bolts (builders' hardware) (price, 15 cents)	411 336	C275
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Bottles, hot-water, rubber Bowls, gravy (tableware, silver- plated)	221a 411		Cabinets and trays, office sec- tional furniture (wood) Cables, wires and, rubber covered,	359a	
Braces, ratchet	416		for ordinary purposes*Cacao products, coffee, tea and	65 161	
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cial Brass castings to be brazed Brass pipe, seamless, iron pipe	286		Calcium carbide Calendar stands and pads *Cantaloupe (fruits and fruit products)	270	
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Brass rods, bars, shapes, plates, sheets, and strips, commercial Brass tubing, seamless Brick, clay, fire	392 427 268a	 C299	Carbon paper, black, lightweight (for typewriter use)	425	
Brick, clay, fire Bronze, aluminum, ingots (for re- melting)	173a		weight (for typewriter use) Carbonate, sodium, granular	426	
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cents) Bunting, wool		0215	Cheesecloth remnants for wiping	253a	C257
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Butts (builders' hardware) (price,	336	C275	*Cherries, fresh and canned (fruits and fruit products) *Chickens, roasting, fresh (meat	270	
*Cabbage (vegetables). Cabinet locks (builders' hard- ware) (price, 15 cents).	271	C275	and meat food products) Chimneys, lamp, and glass lan- tern globes	267 122	

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Chinaware, vitrified Chisel bars, crow and pinch Chisels request and slicks wood	243a 434		*Cornstarch (cereals and cereal products)	317	
Chisels, gouges, and slicks, wood- workers' Chloride, ammonium (sal am-	438		Cot, folding, canvas Cot, hospital, folding Cot, liberty, steel	240 188 190	
moniac) *Chocolate, plain and vanilla, sweetened (coffee, tea and	445		Cots, rubber finger Cotton, absorbent	224 288	C226
cacao products)	161 139		Cotton airplane cloth, mcrcer- ized, grade A Cotton duck, numbered	258a 53	C270 C136
Chrome, ferro Chrome, ore, ground Chrome yellow (lemon, medium and orange, dry, paste in oil,	125		Cotton fabric for waterproofing asphalt saturated woven Cotton pillowcases, bleached	294 305	C287
paste in japan) *Cinnamon (condiments)	$\begin{array}{c} 476\\ 364 \end{array}$	C331	Cotton rags, colored, for wiping		C277
*Citron (fruits and fruit products). *Clams, fresh (sea food)	270 365a		machinery (sterilized) Cotton rags, white, for wiping machinery (sterilized)	259 261	C261 C264
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Clay, plastic, fire, refractorics Cloth, abrasive, aluminum oxide_	335a 387	C297	Cotton sneeting, brown	301	C272
Cloth, emery Cloth, mercerized cotton airplane,	388	-,	Cotton sheeting, brown wide Cotton sheets, bleached (medium and high count sheeting)	302 304	C278 C274
grade A	258a 260	C270 C267	Cotton tablecloths Cotton waste, colored	500 263a	C263
Cloths, wiping *Cloves (condiments) Coal-tar pitch for roofing	364 80	C157	Cotton wastc, white Cottonsecd meal (feeds and forage)	262a	C262
Coal-tar pitch for waterproofing and dampproofing	83	C155	*Crab meat (sca food) *Crackers, soda, bulk (cereals and	25b 365a	
Coal-tar saturated rag felt for roofing and waterproofing Cocks (plumbing fixtures for land	81	C156	cereal products) *Cream, fresh (dairy products) Crowbars, chisel and pinch	317 381a 434	
use) (price, 15 cents) *Cocoa (coffee, tea and cacao prod-	448	C310	*Cucumbers (vegetables)	271	
ucts) *Coconut, shredded (miscellane- ous provisions)	161 389		Cupboard and locker equipment, steel Cups, sponge and pin	$\begin{array}{c} 471\\ 368 \end{array}$	
Codfish, haddock or codfish and haddock (sea food)	365a		*Currants, dried (fruits and fruit products) *Curry (condiments)	$\frac{270}{364}$	
Coffee, tea, and cacao products Compound, rust-preventive,	161		Cushion course materials for	504	
heavy Compounds, rust-preventive, medium, and light	239 293	C200 C214	brick, stone block, or wood block pavement (sand, slag, limestone screenings, etc.)	465	
Concrete pipe, plain	495		Cushions, ring, cloth inserted Cushions, ring, rubber	226a 227a	$\begin{array}{c} { m C254} \\ { m C246} \end{array}$
Condenser tubes, and tubes for ferrule stock (Admiralty metal). Condiments	$374 \\ 364$		Cutters, glass Cutters, pipe	435 437	
Conduit, rigid, enameled Copper gaskets, asbestos, cor- rugated	311 93		*Dairy products	355 381a	
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Copper, phosphor Copper pipe, seamless, and tub- ing, copper, seamless, standard	118		Damp proofing, coal-tar pitch for waterproofing and	85 83	C155
iron pipe size Copper rods, bars, shapes, plates, sheets, and strips	287 467		Denim, blue, indigo (shrunk) Denim, blue, indigo (unshrunk)	256b 257a	C265 C266
Copper, silicon	119		Denim, brown (shrunk) Denim, brown (unshrunk) Dental amalgam alloy	254b 255a 356	C256 C259
Coppers, soldering Cork, compressed (cork board) Cork, ground, for insulating pur-	439 337		Desks, steel	477 .	
poses	338		Dishes and covers (tableware, silver-plated)	411	
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Drills, breast Dry cells Duck, cotton, numbered	417 58 53	C139 C136	ham (cereals and cereal prod- ucts) Fluoride, sodium (insecticide)	$317 \\ 354$	
Duck, light weight (Army duck, grey)	159	C166	*Foods (see Provisions). Forage, feeds and Forks, dessert and dinner (table-	25b	
Duck, tent (special construction for bleaching or dyeing, grey)	160	C167	ware, silver-plated)	411	
Duster, counter	208a		*Fowl, fricasse, fresh (meat and		
*Eggplant (vegetables)	271		meat food products)	267	
*Eggs (dairy products) Electric lamps, large tungsten	381a		Frame, Gatch, adjustable spring bottom	189	
filament incandescent	23	C13	Frames, saw, hack	479	
Emery cloth	388		*Fruits (fresh, canned, and dried) and fruit products	270	
Enamel, red, water resisting Enameled ironware (plumbing	66	C146	Fuels, liquid, lubricants, and methods for testing (price, 15		
fixtures for land use) (price, 15	448	C310	cents)	2c	(1)
cents) Eosin Y (C. I. No. 768)	318		Furniture and cabinets, office,		
Ether, petroleum	310		sectional, steel	408	
Extinguisher, fire, hand chemical (carbon tetrachloride), 1 quart	124		Furniture, office, sectional cabi- nets and trays, wood Fuses, nonrefillable cartridge in-	359a	
Extinguishers, fire, hand chemical	0		closed	56	
(soda-and-acid type) Fabric, cotton, for waterproofing,	213		Fuses, plug, nonrenewable Fuses, renewable, cartridge in-	346	
Fans, electric, desk and bracket	294	C287	closed	176	
type Fasteners, paper, brass	491 377		Garnet paper Gaskets, asbestos-copper, corru-	386	
Faucets (plumbing fixtures for	1		gated Gaskets, asbestos metallic cloth	93 97b	C242
land use) (price, 15 cents) Feeds and forage	448 25b	C310	Gaskets, metallic encased Gaskets, rubber packing and (molded, sheet, and strip)	485	C336
Felt, asphalt saturated rag, for roofing and waterproofing	86	C161		111a	C235
Felt, coal-tar saturated rag, for roofing and waterproofing	81	C156	Gasoline (lubricants and liquid fuels) (price, 15 cents)	2c	(1)
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Felt, rag, for flashings, asphalt			Gauze, plain Gauze, roller bandage, plain, as-	289	
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Ferromolybdenum	143		and strips	468	
			*Ginger (condiments)	364	
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denser tubes (Admiralty metal)_ Filler, joint, petroleum asphalt for	374	•••••	chimneys *Glass tableware	122 121a	
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Filler, mineral, for sheet asphalt or asphaltic concrete pavements			chimneys Gloves, rubber, for electrical	122	
(Portland cement, limestone dust, and dolomite dust)	463		workers (for use in connection with apparatus or circuits not	210	Corr
Finger cots, rubber	224	C226	exceeding 3,000 volts to ground)_	312	C271
Fire extinguisher, hand chemical (carbon tetrachloride), 1 quart	124		Gloves, rubber, surgeons' Gouges, slicks, and chisels, wood-	229	C217
Fire extinguishers, hand chemical			workers'	438	
(soda-and-acid-type) Fire extinguishing liquid (carbon	213		*Grapefruit (fruits and fruit prod- ucts)	270	
tetrachloride base) *Fish, fresh (sea food)	36a 365	C134	*Grapes (fruits and fruit products)	270	
Fittings, pipe, cast-iron (threaded)			Gravel, broken stone, broken slag or, for bituminous surface treat-		
Fixtures, plumbing (for land use)			ment	455	
(price, 15 cents) Flax packing	448 101b	C310 C239	Gravel for gravel roads	453	
*Flaxseed meal (feeds and forage)_	25b		fuels) (price, 15 cents)	2c	(1) C206
Flint paper	385		Gypsum, calcined	248	C20

¹ Bureau of Mines Technical Paper No. 323A.

	Federal		1	Federal	<u> </u>
Title	Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title	Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.
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Gypsum plaster board	285 284	- C210 C211	Iron, Dig. joundry	126 393	
Gypsum wall board Hacksaw blades Hair felt	415 158		Iron or steel unions, malleable Iron and steel welding wire Ironware, enameled (plumbing	174	
*Hams, sweet pickled, smoked (meat and meat-food products)	267		fixtures for land use) (price, 15 cents)	448	C310
Hardware, builders' (price, 15	336	C275	Jacks	481	
cents) Hatchets	433		products)	270	
Hay (feeds and forage) *Hearts, beef, fresh (meat and meat-food products)	25b		*Jelly (fruits and fruit products) *Kale (vegetables)	$270 \\ 271$	
meat-food products)	267		Kerosene (lubricants and liquid		1
Heaters, water (plumbing fixtures for land use) (price, 15 cents) Hinges (builders' hardware)(price,	448	C310	fuels) (price, 15 cents)	2c	(1)
Hinges (builders' hardware)(price, 15 cents)	336	C275	*Kidneys, beef, fresh (meat and meat food products)	267	
•			Knives, drawing	488	
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*Hominy grits, and lye (canned) (cereals and cereal products)	317		(tableware, silver-plated) Ladles, plumbers	411 474	
*Hops (miscellaneous provisions)_	389				
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Hose, tender (corrugated)	46c	C268 C288	and paste	5	C84
Hose, water suction (smooth bore)	50a	C292	Lead, white, basic sulphate, dry and paste	6	C85
Hose, water and wash deck	48b	C291		482	
Hosiery, sizes, measuring Hydrants, wall (plumbing fix- tures for land use) (price, 15	92		Leather, bag Leather belting Leather, hydraulic packing (vege- table tanped)	37 496	C148
Cents)	448	C310	table tanned) Leather, lace	184	C213
Ice bag, helmet shaped Ice bags, rubber	216 217	C310 C228 C227	Leather, rigging	483	
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Ingots, bronze (for remelting)	173a 290		ucts) *Lettuce (vegetables)	270 271	
Ingots, manganese bronze (for re- melting)	89		Ligatures, catgut, boilable (sur- gical catgut suture material)	357	
Ink, black waterproof drawing Ink, drawing, colored waterproof	265a 379	C301	gical catgut suture material) Lime, hydrated, for structural	249	C204
Ink, indelible marking, for fabrics.		C197	Lime, quick, for structural pur-		1
Ink, record and copying Ink, red	163 165	C182 C184 C185	*Limes (fruits and fruit products)	$250 \\ 270$	C201
Ink, stamp-pad Ink, writing	164	C183	Linoleum, battleship	209	C191
Insect powder (pyrethrum pow- der)	353		Linoleum, plain, inlaid, and printed	210	C190
(Insecticide in fumigation) so-			Linseed cake and meal (feeds and forage)	25b	
dium cyanide (Insecticide) sodium fluoride	355 354		forage) Liquid, fire extinguishing (car- bon tetrachloride base)	36a	C134
Iron bar, wrought, refined	391			508	0134
Iron boiler tubes, lap welded, charcoal.	349		Lithopone paint, flat interior, white and light tints Lithopone paint, gloss interior, white and light tints	21	CIII
Iron, cast, pipe fitting (threaded)	489		Lithopone paint, gloss interior,	67	C147
Iron castings, gray Iron castings, high test gray (semi-	110		Liver, beef, fresh (meat and meat food products)	07	0117
steel)	140		100d products)	. 267	

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¹ Bureau of Mines Technical Paper No. 323A.

Title	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.
Locker equipment, cupboard, and steel Locks (builders' hardware) Lubricants and liquid fuels, and methods for testing (price, 15 cents)	471 336 2c	C275	*Nuts (miscellaneous provisions) - *Oatmeal (cereals and cereal prod- ucts)	389 317 25b 317	
Lumber (grading and inspection rules). *Luncheon meat, chilled and frozen (meat and meat prod- ucts). Lye, soda, caustic (for cleaning	24 267	······	Ocher, dry and paste Oil, cottonseed (edible grade) Oil, linseed, boiled Oil, linseed, raw Oil, olive (edible grade)	$12 \\ 73 \\ 475a \\ 4a \\ 77 \\ 77 \\ 12$	C91 C330 C82
Lye, soda, caustic (ior cleaning purposes)	430 317 364		Oil, road, for hot application (type OH-1-25) Oilcloth, table, white Oils, burning, electric switch, fuel, lubricating, and mineral	275 498	
Mack (contact (sea food) Magnesia asbestos plaster Magnesia cement, plastic (mag- nesia-oxychloride) used as floor- ing, bases, wainscots, etc		C323	fuel, lubricating, and mineral (lubricants and liquid fuels) (price, 15 cents)* *Oleomargarine (dairy products) *Onions, green, staple (vegetables)	2c 381a 271	(1)
Magnesia molded pipe covering and blocks			*Oranges (fruits and fruit prod- ucts) Ore, chrome, ground Ore, manganese Oxide, leaded zinc, dry and paste	270 125 142 9	 C88
remelting) Manganese, ferro Manganese ore Manholes (plumbing fixtures for land use) (price, 15 cents)	. 138 . 142	C310	Oxide, zinc, dry and paste (Oxychloride, magnesia), plastic magnesia cement, used as floor- ing, bases, wainscots, etc Oysters, fresh (sea food)	8 445 365a	C87 C323
*Marmalade (fruits and fruit products)	270 428 382	C318 C306	Packing, asbestos high pressure rodPacking, asbestos metallic cloth sheet	103a 94b	C238 C243
electrical apparatus or circuits not exceeding 3,000 volts to ground. Meal, alfalfa, corn (feeds and for- age)	414	C312	Packing, asbestos sheet, com- pressed Packing, asbestos valve stem Packing, asbestos wick and rope. Packing, diaphragm	- 98a	C241 C334 C240
Measuring devices, liquid, retail type	- 362 - 267 - 339		Packing, fabric condenser tube Packing, fiber, for lubricating and fuel oil. Packing, flax Packing, hard fiber sheet	100 101b	C239 C335
phenol sulphate) Middlings, standard and flour (feeds and forage)	- 421 - 25b		Packing, hydraulic, leather (vege table tanned) Packing, low-pressure spiral gland	496	C237
*Milk; fresh, evaporated, dried, and malted, condensed (dairy products)	- 381 - 54 - 389		Packing, metallic (fixed ring type) Packing, metallic, flexible Packing, metallic, plastic Packing, semimetallic Packing, metallic, solid (floating	102 106 107	
Mineral filler for sheet asphalt or asphaltic concrete pavements (Portland cement, limestone dust, and dolomite dust) Molybdenum, ferro	463		ring type) Packing rings for boiler blow-off valves Packing, rubber, cloth .nsertion	108 109 110a	
*Mustard, ground (condiments) - *Mutton, fresh (meat and meat food products)	- 364 - 267 - 418		Packing, rubber, wire insertion Packing, tucks Packings, rubber, and gaskets (molded, sheet, and strip)	- 112a - 113a - 111a	C233
Nickel, for remelting	468 - 372		Padlocks Pads and stands, calendar Pads, surgical operating Paint, black, semipaste and ready mixed Paint drier, liquid	- 230a	C245

¹ Bureau of Mines Technical Paper No. 323A.

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Title	Federal Specifi- cations Board specifi- cation No.	of	Title	Federal Specifi- cations Board specifi- cation No.	Burea of Stand- ards Circu- lar No
Paint, green, semipaste and ready mixed	15	C97	Paper, wrapping, kraft Paper, wrapping, rope manila	177a 133a	
Paint, lithopone, flat interior, white and light tints	21	C111	Paper, wrapping, sulphite ma- nila	178a	
Paint, lithopone, gloss interior, white and light tints	67	C147	Paper, wrapping, wood manila Paper, writing, sulphite, white	132a	
Paint, olive drab (semipaste and ready mixed) Paint, outside white titanium-	137	C165	and colored	329	
Paint, outside white titanium- zinc (semipaste and ready mixed)	278	C215	*Parsley (vegetables) *Parsnips (vegetables) Paste, office and library Paste, polishing	$271 \\ 271 \\ 412 \\ 340$	
Paint, white, and tinted paints made on a white base, semi- paste and ready mixed	10b	C89	Pavement construction, asphalt for use in road and	276a	
Paints, composite vehicle for thinning semipaste, when the use of straight linseed oil is not			*Peaches, fresh, canned and evaporated (fruits and fruit products).	270	
justified Paints, iron oxide and iron hydrox- ide	17 13	C102 C93	*Pears, fresh, canned and evap- orated (fruits and fruit prod-	270	
ide Paints, thinning, volatile min- eral spirits for	16	C98	ucts) *Peas, green in pods and canned (vegetables)	271	
Paper, blotting, 25 per cent rag, white and colored	127a		*Pepper (condiments)	364	
Paper, blotting, desk, colored Paper, blotting, white and col-	128a		*Peppers, green, sweet (vege- tables) Petroleum asphalt for joint filler	271	
ored Paper, blue print, No. 1 grade (sensitized and unsensitized)	327 179		(squeegee or pouring method) type PAF-1-25 Petroleum ether	277 310	
Paper, blue print, No. 2 grade (sensitized and unsensitized)	180		Phosphor copper	118	
Paper, blue print, No. 3 grade (sensitized and unsensitized)	181		Phosphor tin *Pickles (condiments) Pigment, titanium, dry and paste	$ \begin{array}{r} 116 \\ 364 \\ 115 \end{array} $	C16
Paper, bond, 50 per cent rag, white and colored Paper, bond, 100 per cent rag,	320		Pillowcases, cotton, bleached Pillowcases, rubber Pillows, air, rubber	305 231 232a	C27 C22 C25
Paper, bond, sulphite, white and	319		*Pinch bars, crow and chisel *Pineapples, fresh, canned (fruits	434	
Paper, brown process (sensitized	328		and fruit products)	270	
and unsensitized) Paper, carbon, black, lightweight (for typewriter use)	182a 425		Pipe, brass, seamless, iron pipe size, standard and extra strong Pipe, cast iron, soil, and fittings,	342a 343	
Paper, carbon, black, standard weight (for typewriter use)	426		coated and uncoated Pipe, concrete, plain Pipe, copper, seamless, and tub-	495	
Paper, chart Paper fasteners, brass Paper, flint	129a 377 385		ing, copper, seamless, standard iron pipe size	287	
Paper, garnet Paper, general specification for	386 394		Pipe covering and blocks, mag- nesia molded Pipe cutters	$\begin{array}{c} 212\\ 437 \end{array}$	
Paper, ledger, 75 per cent rag, white and colored	322		Pipe fittings, cast-iron (threaded)_ Pipe threads	489	
Paper, ledger, 100 per cent rag, heavy, white Paper, ledger, 100 per cent rag,	330		Pipe, welded steel (black and gal- vanized)	162a	
Paper, manifold, 50 per cent rag,	321	 ·	Pipe, wrought iron (welded) (black and galvanized) *Pitchers, sirup (glass tableware).	242 121a	
white and colored, glazed Paper, manifold, 50 per cent rag, white and colored, unglazed	331a 484a		Pitchers, water, cream and ice, (tableware, silver-plated) Plaster board, gypsum Plaster gypsum	$411 \\ 285 \\ 247$	C21 C20
Paper, manifold, 100 per cent rag, white and colored Paper, map, lithograph-finish	$323 \\ 324$		Plaster, gypsum Plaster, magnesia asbcstos	247	
aper, map, 50 per cent rag, lithograph-finish	325		Plates, copper, bars, rods, shapes, sheets, and strips	467	
Paper, map, 75 per cent rag, litho- graph-finish Paper, mimeograph	326 130a		shapes, sheets, and strips (Ger- man silver) Plumbers ladles	468 474	
Paper, mimeograph, 50 per cent			Plumbing fixtures (for land use) (price, 15 cents)	448	C31(

Title .	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.
*Plums (fruits and fruit products).	270		Ring cushions, rubber	227a	C246
Polish, liquid metal	341		Rings, rubber, jar	51	
Polish, silver Polishing paste	390 340		Road oil for hot application (type OH-1-25)	275	
Polishing paste Porcelain ware (plumbing fix- tures for land use) (price, 15	1		Road and pavement construction, asphalt for use in	276a	
cents)	448	C310	Road surface materials, for top-	452	
*Pork, fresh, frozen, sausage	1		soil or sand-clay	402	
(meat and meat food products). *Potatoes, Irish, sweet (vegeta-	267		Rods, copper, bars, shapes, plates, sheets, and strips	467	
bles)	271		Rods, nickel silver, bars, shapes,	201	
Pots, coffee, tea, chocolate (table- ware, silver-plated)	411		plates, sheets, and strips (Ger- man silver)	468	
Powder, insect (pyrethrum pow-	353		man silver) Rods, welding, nonferrous, for	269	
de r)	1		Roof coating, asphalt fibrous	424	
Powder, soap *Powders, baking, tartaric acid	28	C125	Roofing, asphalt for mineral sur- faced	84	C159
(miscellaneous provisions)	389				
Preservatives, wood, and proc- esses of treatment	395		Roofing, asphalt prepared Roofing, asphalt primer for, and	214	C192
*Preserves (fruits and fruit prod-	270		waterproofing Roofing, asphalt saturated rag	87	C162
ucts)	2.0		felt for, and waterproofing	86	C161
*Provisions: *Cereals and cereal products	317		Roofing, asphalt for unsurfaced built-up	88	C168
*Coffee, tea, and cacao products.	161		Roofing, coal-tar pitch for	80	C157
*Condiments *Dairy products	381a		Roofing, coal-tar saturated rag		
*Fruits (fresh, canned, and dried) and fruit products	270		felt for, and waterproofing Roofing, construction of built-up,	81	C156
			type 3ACS	148	C172
*Meat and meat food products *Miscellaneous provisions	267		Roofing, construction of built-up, type 3TCS	151	C175
*Sea food (fresh, salt, smoked,	365a		Roofing, construction of built-up,	149	C173
and canned)*Sugar and sugar products	315		type 4ACS	110	
*Vegetables (fresh, canned, and dried)	271		Roofing, construction of built-up, type 4AWS	146	C170
			Roofing, construction of built-up,	152	C176
(fruits and fruit products)	270		type 4TCS Roofing, construction of built-up,		
Pullers, nail Pulleys (builders' hardware)	418		type 4TWS Roofing, construction of built-up,	154	C178
(price, 15 cents)	336	C275	type 5ACS.	150	C174
*Pumpkins, fresh, canned (vege- tables)	271		Roofing, construction of built-up,		
Putty	. 283	C216	type 5AWS_ Roofing, construction of built-up,	147	C171
Pyrethrum powder (insect pow-	0 50		type 5TCS	153	C177
der) Quicklime for structural purposes	353	C201	Roofing, construction of built-up, type 5TWS	155	C179
Radio receiving electron tubes *Radishes, fresh (vegetables)	410 271		type 5TWS Roofing, installation of metal flashings with built-up bitu-		
Rag felt for asphalt saturated roof-	0.0		minous	156	C180
ing and waterproofing	86	C161	Roofing, installation of plastic		
Rag felt for flashings, asphalt	295	C286	flashings with bituminous built-	157	C181
saturated Rags, colored cotton, for wiping			Roofing, prepared, asbestos and	157	0101
machinery (sterilized) Rags, white cotton, for wiping	259	C261	asphalt, slate-surfaced Roofing and shingles, asphalt	423	
machinery (sterilized)	261	C264	prepared, slate-surfaced	296	C285
*Raisins (fruits and fruit prod- ucts)	270		Roofing, surfacing materials for		
Red lead, dry and paste		C90	bituminous built-up Rope, cotton	82 447	C158 C326
Refractories, plastic fire-clav	. 335a	C297	Rope, manila	61a	C158 C326 C324 C208 C247
Refrigerators *Rhubarb, fresh (vegetables)	274 271		Rope, wire (price, 15 cents) Rubber aprons, surgeons'	297 215a	C208 C247
Ribbons, computing and record- ing machine			Rubber bandages	219	C219
			Rubber bands Rubber boots, hip	64a	C219 C284
Ribbons, hectograph	167a		Rubber boots, hip	492 494	
*Rice (cereals and cereal products).	. 317		Rubber boots, short, heavy Rubber boots, short, light Bubber estheters	493	C225
Ring cushions, cloth-inserted	1 2208	0204	Rubber catheters	444	0220

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	Board specifi- cation No.	Stand- ards Circu- lar No.	Title	cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.
Rubber cement for medical rub			Saw blades, hack	415	
ber goods Rubber-covered wires and cables	- 223		Saw frames, hack Saw, hand, sets	479 440	
for ordinary purposes Rubber dam	- 65	C218	Saws Scales, railroad-track	480 314	
Rubber finger cots	_ 224	C226	Scales, weighing, general specifica-	470	
Rubber gloves for electrical work- ers (for use in connection with	4		Saw, hand, sets	$473 \\ 271$	
apparatus or circuits not ex- ceeding 3,000 volts to ground).	312	C271	Scissors, shears and	361	
Rubber gloves, surgeons'	229	C217	Scrapers, crumb (tableware, silver-plated)	411	
Rubber goods, general specifica- tion for (methods of physical	- 228	0217	Screws, wood Scribers, machinists'	411 52	C140
tion for (methods of physical tests and chemical analysis)			*Sea food (fresh, salt, smoked, and	441	
(price, 10 cents) Rubber hose, metal, gasoline	- 59a - 136a	C232	canned) Seams, stitches, and stitching (price, 20 ccnts)	365a	
Rubber hot-water bottles	_ 221a	C269 C248	(price, 20 cents)	384	C283
Rubber ice bags		C227	Sets, hand saw	440	
Rubber jar rings Rubber-lined fire hose, cotton	- 51		Shades, window, shade cloth, rollers, slats, cords, and acces-		
(couplings and gaskets)	38b	C114	Sories	367a	
Rubber matting Rubber matting, for use around		C306	*Shakers, salt and pepper (glass tableware)	121a	·
electrical apparatus or circuits not exceeding 3,000 volts to			Shakers, salt and pepper (table- ware, silver-plated)	411	
ground Rubber packing, cloth-insertion	- 414	C312 C236	Shapes, copper, bars, rods, plates,	467	
			sheets, and strips	401	
Rubber packing, wire-insertion Rubber packings and gaskets	- 112a	C234	Shapes, nickel silver, rods, bars, plates, sheets, and strips (Ger-		
(molded, sheet, and strip) Rubber pillowcases	_ 111a	C235 C224	man silver)	468 450	
Rubber pillows, air	_ 232a	C252	Shears and scissors	361	
Rubber ring cushions Rubber sheeting	227a 233a	C252 C246 C253	Shears, tinners', hand (snips) Sheeting, cotton, bleached wide	451 303	C27
Rubber stoppers Rubber syringe, fountain	- 383	C308	Sheeting, cotton, brown	301	C27
Rubber syringe, fountain Rubber tape, insulating	- 235a - 292	C251 C230	Sheeting, cotton, brown, wide Sheeting, rubber	302 233a	C27 C25
Rubber tips for crutches Rubber tires, solid and pneumatic	- 225	C223	Sheets, copper, bars, rods, shapes, plates, and strips	467	
and inner tubes	_ 3c	C115	Sheets, cotton, bleached (medium		
Rubber tubing		C305	and high-count sheeting)	304	C27
Rubber valves Rulers, desk	- 114a 360	C244	Sheets, nickel silver, rods, bars, shapes, plates, and strips (Ger-	ſ.,	
Rules Rust-preventive compound,	_ 419		man silver)	468 375	C30
heavy	- 239	C200	Shellac varnish	376	C30
medium and light	- 293	C214	Shingles and roofing, asphalt prepared, slate-surfaced	296	C28
Safes, burglar-resisting	- 363		*Shortening, vegetable (dairy	1	
Safes and cabinets, insulated Sage (condiments)	- 60 - 364		products)	381	
Sale (condiments) Sal ammoniac), ammonium chloride			Shorts, brown and gray (feeds and forage)	25b	
Salmon, canned (sea food)	- 446 - 365a		Shower fixtures (plumbing fix- tures for land use) (price, 15	1 3	
Salt (condiments)	364		cents) Silicon copper	448 119	C31
Sand for cement grout filler, brick	401			R	
and stone block pavements Sand for cement mortar bed for brick, stone block, or wood	- 461		Silicon, ferro Silver, nickel, rods, bars, shapes,	145	
brick, stone block, or wood block pavements	462		plates, sheets, and strips (Ger- man silver)	468	
Sands for use in sheet asphalt or bituminous concrete pavements	1.		Suver solder	307	
Sardines, canned (sea food)	_ 365a		Sinks (plumbing fixtures for land use) (price, 15 cents)	448	C31
Sauce, apple (fruits and fruit products)			*Sirup, sugar cane, sugar and		
Sauce, chili and Worcestershire	4		maple, blended, corn and re- finer's (sugar and sugar prod-		
type (condiments)	_ 364		ucts)	315	
Sauerkraut, canned (vegetables) Sausage, bologna, frankfurter,	- 271		Sizes of hosiery, measuring Slag, broken, and broken stone for	92	
Sausage, bologna, frankfurter, pork, and vienna styles (meat and meat-food products)	267		binder course, sheet asphalt pavement	459	

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Title	Federal Specifi- cations Board specifi- cation No.	of Stand-	Title	Federal Specifi- cations Board specifi- cation No.	
Slag, broken, and broken stone for bituminous concrete base or surface course	458		Stands, tables and, wood Steel blooms, billets, slabs, and bars for reforging, carbon and	478	
Slag, broken, and broken stone for bituminous macadam base or surface course	457		alloy Steel castings Steel (semi), high-test gray iron	$316 \\ 170$	
Slag, broken, broken stone, or gravel for bituminous surface			castings	140	
treatment. Slag, broken and broken stone for waterbound base or wearing	455		Steel, structural, for bridges Steel, structural, for buildings Steel, structural, for cars Steel structural pickel	$351 \\ 352 \\ 373 \\ 372$	
slate (plumbing fixtures for land	456		Steel, structural nickel Steel, structural, for ships other than naval vessels	469	
use) (price, 15 cents) Slate-surfaced asphalt and as- bestos prepared roofing	448 423	C310	Steel tubes, seamless, for aircraft purposes	490	
Slate-surfaced, asphalt prepared roofing and shingles Sleeves, dredging	296 42	C285	Steel unions, malleable iron or Steel welding wire, iron and Sterilizers, dressing containers and stands, portable lockers for	393 174	
Slicks, gouges and chisles, wood- workers'	438 451	C127	use in conjunction with steri- lizers, electric heaters, and steam sterilizing apparatus	68a	
Soap, automobile Soap, chip Soap, grit, cake	30 31 33a	C127 C128 C130	Stitches, seams, and stitching (price, 20 cents)	384	C283
Soap, grit, hand Soap, laundry, ordinary Soap, liquid	35 32 27	C132 C129 C124	bituminous concrete base or surface course Stone, broken, and broken slag for	458	
Soap, liquid (for laundry use)	246 28	C193 C125 C105	bituminous macadam base or surface course	457	
Soap, powdered (for laundry use). Soap, salt-water. Soap, scouring compound, scour- ing compounds for floors	245 29 34	C195 C126 C131	gravel for bituminous surface treatment Stone, broken, and broken slag	455	
Soap, toilet, milled Soap, white, floating (for toilet	244	C194	for binder course, sheet asphalt pavement. Stone, broken, and broken slag for	459	
Soapstones (plumbing fixtures	26	C123	waterbound base or wearing course	456	0000
for land use) (price, 15 cents) Soda ash *Soda, baking (sodium bicar-	448 429	C310 C314	Stoppers, rubber Straw (feeds and forage) Strips, copper, rods, bars, shapes,	383 25b 467	C308
bonate) (miscellaneous provi- sions)	389		sheets, and plates Strips, nickel silver, bars, rods,	407	
Soda, caustic (lye) for cleaning purposes	430 431	C315 C316	shapes, plates, and sheets (Ger- man silver)	468 315	
(monohydrate crystals)	432	C317	(Sulphate, mono-methyl-para- aminophenol) metol Sweep, floor, hair Switches, knife	1177	
insecticide in fumigation) Sodium fluoride (insecticide) Solder, silver			Switches, snap	62	C250
Solder, spelter (for brazing) Solder, tin-lead			Syringe, cloth-inserted fountain Syringe, rubber fountain Tablecloths, cotton Tablecoths, cotton	234a 235a 500	C251
Soldering coppers *Spaghetti (cereals and cereal	439		Tables and stands, wood *Tableware, glass	121a	
products) Spelter solder (for brazing) Spelter (zinc, slab)			Tableware, silver-plated *Tangerines (fruits and fruit prod- ucts)	411 270	
*Spices, ground (condiments) Spiegeleisen	364 273		Tanks, hot-water (plumbing fix- tures for land use) (price, 15 cents)	448	C310
*Spinach, fresh, canned (vege- tables)	271		Tape, friction	291	C229
Spoons, dessert, soup, tea, and table (tableware, silver-plated) Spring bottom, adjustable (Gatch	411		Tape, rubber-insulating *Tapioca (cereals and cereal prod- ucts)	292 317	C230
frame)*Squash, summer, winter, or hub- bard (vegetables)	189 271		Tar, coal, pitch for roofing Tar, coal, pitch for waterproofing and damp proofing	80 83	C157 C155

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Title	Title Board ards Title			Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.
Tar, coal, saturated rag felt for	81	Clea	Unions, malleable iron or steel	393	
roofing and waterproofing Tar, refined, for construction	282	C156	Urinals (plumbing fixtures for land use) (price, 15 cents) Valves (plumbing fixtures for long use) (price for the second use)	448	C310
Tar, refined, for hot application (type TH-1-25)	280		land use) (price, 15 cents)	448	C310
Tar for use in repair work Tars for cold application	281 279		land use) (price, 15 cents) Valves, rubber Vanadium, ferro	114a 135	C244
*Tea, coffee, and cacao products	161		Varnish, asphalt	19	C104
Tent duck (special construction for bleaching or dyeing, grey) Textile materials, general specifi-	160	C167	Varnish, interior Varnish, shellac	$\frac{22}{376}$	C117 C303
cation for (methods of physical			Varnish, spar, water resisting *Veal, fresh (meat and meat-food	18b	C103
and chemical tests)	$\frac{345}{309}$	C293	products)	267	
Thermometers, industrial	472		*Vegetables (fresh, canned, and dried)	271	
Threads, pipe	238		*Vermicelli (cereals and cereal		
*Thyme (condiments) Tin-lead solder	$\frac{364}{313}$		Vinegars (condiments)	$317 \\ 364$	
Tin-lead solder Tin, phosphor Tin, pig	$\frac{116}{90}$		Vitrified chinaware Waiters (tableware, silver-plated)_		
					Carr
Tips for crutches, rubber Tires, pneumatic, solid rubber	225	C223	Wall board, gypsum Waste, cotton, colored	284 263a	C211 C263
and inner tubes Titanium, ferro	3c 144	C115	waste, cotton, white	262a 264a	C262 C260
Titanium, ferro Titanium pigment, dry and paste Titanium-zinc paint, outside white (semipaste and ready	115	C163	Waste, wool, colored Water closets (plumbing fixtures for land use) (price, 15 cents)	448	C310
white (semipaste and ready mixed)	278	C215	Water heaters (plumbing fixtures for land use) (price, 15 cents) *Watermelons (fruits and fruit	448	C316
tables)*Tongue, beef, canned (meat and	271		products) Waterproofing, asphalt for, and	270	
meat-food products)	267		damp prooning	85	C160
Toothbrush Towels, huck (with woven name)_	$202 \\ 422$	C313	Waterproofing, asphalt primer for roofing and	87	C162
Trays (tableware, silver-plated)	411		Waterproofing, asphalt saturated rag felt for roofing and	86	C161
Trays, office sectional furniture, cabinets, wood	359a		Waterproofing, asphalt-saturated,		
Tube, colon Tubc, stomach or lavage	236 237	C221 C220	woven cotton fabric for Waterproofing, coal-tar pitch for	294	C287
Tubes, boiler, iron, lap welded charcoal	349		and damp proofing Waterproofing, coal-tar saturated	83	C155
Tubes, boiler, lap welded and seamless steel			rag felt for roofing and	81	C156
	347		Waterproofing material, integral, water-repellent type (for use with Portland cement mortar	1	
Tubes, condenser, and tubes for ferrule stock (Admiralty metal)_	374		or concrete)	444	C322
Tubes, inner, pneumatic and solid tires, rubber	3c	C115	Wax, paraffin (lubricants and liquid fuels) (price, 15 cents)	2c	(1)
Tubes, radio receiving electron	410				()
Tubes, seamless steel, for aircraft purposes	490		Wax, sealing Welding rods, nonferrous for gas	420	
Tubing, brass, seamless	427		welding Wheat, red dog, grain (feeds and	269	
Tubing, copper, seamless, and pipe, copper, seamless, stand-			forage) Wire rope (price, 15 cents)	25b 297	C208
ard iron pipe size	287		Wire, welding, iron and steel	174	
Tubing, flexible, nonmetallic Tubing, rubber	57 39b	C305	Wires and cables, rubber covered,		
*Tumbler (glass tableware) *Tuna fish, canned (sea food)	121a 365a		for ordinary purposes Wood preservatives, and proc-	65	
	ood		esses of treatment	395	
Tureens, soup (tableware, silver- plated)	411		Wool bunting Wool waste, colored	497 264a	C260
*Turkeys, fresh, chilled and frozen (meat and meat food products)			*Yeast (miscellaneous provisions)_	389 .	
	267		Zinc oxide, dry and paste Zinc oxide, leaded, dry, and paste_	8	C87
*Turnips, white and yellow (vege- tables)	271		Zinc oxide, leaded, dry, and paste_ Zinc paint, titanium, outside white (semipaste and ready	9	C88
Turpentnie (gum spirits of tur- pentine and steam distilled			IIIIXeu)	278	C215
wood turpentine)	7b	C86	Zinc, slab (spelter)	01	

Alphabetical index of specifications—Continued

¹ Bureau of Mines Technical Paper 323A.

NUMERICAL LIST OF SPECIFICATIONS

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Federal Specifi- cations Board specifi- cation	of Stand- ards Circu-	Title	Federal Specifi- cations Board specifi- cation	Bureau of Stand- ards Circu-	Title
No.	lar No.		No.	lar No.	
		Cement, Portland. (Price, 10	40b	C290	Gas hose.
1a	C33	cents.)	41b 42	C307	Hose, pneumatic. Dredging sleeves.
2c	(1)	Lubricants and liquid fuels and methods for testing. (Price, 15	43		Air-brake and signal hose and
3e	C115	cents.) Tires, pneumatic and solid rub- ber, and inner tubes.	44b 45	C289	gaskets. Divers' hose. Spray hose.
4a 5	C82 C84	Oil, linseed, raw. Basic carbonate white lead, dry. and paste.	$^{46c}_{47}$	C288	Hose, tender (corrugated). Chemical hose.
6	C85	Basic sulphate white lead, dry	48b 49b	C291 C268	Water and wash deck hose. Steam hose.
7b	C86	and paste. Turpentine (gum spirits of tur-	50a	C292	Water suction hose (smooth bore).
		pentine and steam-distilled wood turpentine).	51		Rubber jar rings.
8 9	C87 C88	Zinc oxide, dry and paste. Leaded zinc oxide, dry and paste.	52 53	C140 C136	Wood screws. Numbered cotton duck.
10	C89	White paint and tinted paints made on a white base, semi-	54 55		Asbestos millboard. Cutout bases.
		paste and ready mixed.	56		Nonrefillable cartridge inclosed
$11 \\ 12$	C90 C91 C93	Read lead, dry and paste. Ocher, dry and paste. Iron oxide and iron hydroxide	57		fuses. Flexible nonmetallic tubing.
13		paints.	58 59a	C139 C232	Dry cells. General specifications for rubber
14	C94	Black paint, semipaste and ready mixed.			goods (methods of physical tests and chemical analysis).
15	C97	Green paint, semipaste and ready mixed.	60		(Price, 10 cents.) Insulated safes and cabinets.
16	C98	Volatile mineral spirits for thin-	61a 62	C324	Rope, Manila.
17	C102	ning paints. Composite vehicle for thinning semipaste paints when the use	63b 64a	C209 C284	Snap switches. Hose, oil suction and discharge. Rubber bands.
		of straight linseed oil is not justified.	65		Rubber-covered wires and cables for ordinary purposes.
$^{18b}_{19}$	C103 C104	Varnish, spar, water resisting. Asphalt varnish.	66	C146	Water-resisting red enamel
20	C105	Liquid paint drier.	67	C147	Gloss interior lithopone paint, white and light tints. Sterilizers, dressing containers
21	C111	Flat interior lithopone paint, white and light tints.	68a		Sterilizers, dressing containers and stands, portable lockers
$\frac{22}{23}$	C117 C13	Interior varnish. Large tungsten filament incan-			and stands, portable lockers for use in conjunction with sterilizers, electric heaters, and
24		descent electric lamps. Lumber (grading and inspection	69		steam sterilizing apparatus. Canceled Apr. 8, 1926.
		rules, adopted by the various lumber manufacturing associa- tions of the United States).	70		Do.
25b		tions of the United States). Feeds and forage.	71 72		Do. Do.
26	C123	White floating soap (for toilet	73 74		Cottonseed oil (edible grade). Canceled Apr. 8, 1926.
27	C124	use). Liquid soap.	75		Do.
28 29	C125 C126	Soap powder. Salt water soap.	76 77 79		Do. Olive oil (edible grade).
30 21	C127	Automobile soap.	78 79 80	C157	Canceled Apr. 8, 1926. Do. Coal tar pitch for roofing
31 32 330	C128 C129 C120	Chip soap. Ordinary laundry soap.	80 81		Coal-tar pitch for roofing.
33a 34	C130 C131	Soap, grit cake. Scouring compounds, for floors,	82	C156 C158	Coal-tar saturated rag felt for roofing and waterproofing. Surfacing materials for bitumi-
35	C132	and soap scouring compound. Hand grit soap.	04	0108	nous built-up roofing.
36a	C134	Fire extinguishing liquid (carbon tetrachloride base).	83	C155	Coal-tar pitch for waterproofing and damp proofing.
37 38b	C148 C114	Leather belting. Cotton rubber-lined fire hose	84	C159	Asphalt for mineral-surfaced
39b		(couplings and gaskets). Tubing, rubber.	85	C160	roofing. Asphalt for waterproofing and damp proofing,
		ines Technical Paper No. 323 A			

¹ Bureau of Mines Technical Paper No. 323A.

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11 anici icai iloi of specifications Continuoa	Numerical	list of	specifications-	Continued
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Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title
86 87	C161 C162	Asphalt-saturated rag felt for roofing and waterproofing. Asphalt primer for roofing and	133a 134 135		Rope manila wrapping paper. Aluminum ingot. Ferrovanadium.
88	C168	waterproofing. Asphalt for unsurfaced built-up roofing.	136a 137	C269 C165	Rubber-metal gasoline hose.
89		Manganese-bronze ingots (for	137	0105	Olive-drab paint (semipaste and ready mixed). Ferromanganese.
90		remelting). Pig tin.	139 140		Ferrochrome.
91a 92 93		Zinc, slab (spelter). Measuring sizes of hosiery. Asbestos-copper gaskets, corru-	140		High-test gray-iron castings (semisteel). Gray-iron castings.
94b	C243	gated. Packing, asbestos metallic cloth sheet.	$ \begin{array}{r} 142 \\ 143 \\ 144 \end{array} $		Manganese ore. Ferromolybdenum. Ferrotitanium,
95		Asbestos valve-stem packing.	145		Ferrosilicon.
96b	C241	Packing, asbestos sheet, com- pressed.	146	C170	Construction of built-up roofing, type 4AWS.
97b 98a	C242 C240	Gaskets, asbestos metallic cloth. Diaphragm packing.	147	C171	Construction of built-up roofing, type 5AWS.
99 100		Fabric condenser-tube packing. Fiber packing for lubricating	148	C172	Construction of built-up roofing, type 3ACS.
		and fuel oil.	149	C173	Construction of built-up roofing, type 4ACS.
101b 102 103a	C239 C238	Packing, flax. Flexible metallic packing. Asbestos high-pressure rod pack-	150	C174	Construction of built-up roofing, type 5ACS.
104a	C237	ing. Low-pressure spiral-gland pack-	151	C175	Construction of built-up roofing, type 3TCS.
105		ing. Metallic packing (fixed-ring	152	C176	Construction of built-up roofing, type 4TCS.
100		type).	153	C177	Construction of built-up roofing, type 5TCS.
106 107		Plastic metallic packing. Semimetallic packing.	154	C178	Construction of built-up roofing, type 4TWS.
108 109		Solid metallic packing (floating- ring type). Packing rings for boiler blow-off	155	C179	Construction of built-up roofing, type 5TWS.
110a	C236	valves. Cloth-insertion rubber packing.	156	C180	Installation of metal flashings with bituminous built-up roof-
111a	C235	Rubber packings and gaskets (molded, sheet, and strip).	157	C181	ing. Installation of plastic flashings with bituminous built-up roof-
112a 113a 114a	C234 C233 C244	Wire-insertion rubber packing. Tucks packing. Rubber valves.	$158 \\ 159$	C166	ing. Hair felt. Light-weight duck (Army duck,
115	C163	Titanium pigment, dry and paste.	160	C167	gray). Tent duck (special construction for bleaching or dyeing, gray).
$ \begin{array}{r} 116 \\ 117 \\ 118 \\ 119 \\ \end{array} $		Phosphor tin. Pig lead. Phosphor copper. Silicon copper.	161 162a		*Coffee, tea, and cacao products. Pipe, welded steel (black and gal- vanized).
120		Ingot copper.	163 164	C182 C183	Record and copying ink. Writing ink.
121a 122		*Tableware, glass. Glass lantern globes and lamp chimneys.	165 166	C184 C185	Red ink.
$123 \\ 124$	C164	Flat glass for glazing purposes. Hand chemical fire extinguisher	167a 168a	C186	Stamp-pad ink. Ribbons, typewriter. Bibbons, bestograph
		(1 quart carbon-tetrachloride type).	169a	C188	Ribbons, hectograph. Ribbons, computing and record- ing machine.
125		Ground chrome ore.	170		Steel castings.
126 127a		Foundry pig iron. 25 per cent rag blotting paper,	171a 172		Ship chain. Bronze castings.
128a		white and colored. Desk blotting paper, colored.	173a		Aluminum bronze ingots (for re- melting).
129a 130a		Chart paper. Mimeograph paper.	174 175		Welding wire, iron and steel. Knife switches.
131a		50 per cent rag mimeograph paper.	176		Renewable cartridge inclosed fuses.
132a		Wood manila wrapping paper.	177a		

Federal Specifi- cations Board specifi- cation No.		Title	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title
178a 179 180 181		Sulphite manila wrapping paper. No. 1 grade blue-print paper (sensitized and unsensitized). No. 2 grade blue-print paper (sensitized and unsensitized). No. 3 grade blue-print paper	235a 236 237 238 239	C251 C221 C220 C200	Rubber fountain syringe. Colon tube. Stomach or lavage tube. Pipe threads. Heavy rust-preventive com- pound.
181 182a		(sensitized and unsensitized). Paper, brown process (sensitized and unsensitized).	$240 \\ 241$	C198	Folding canvas cot. Sole leather.
183 184 185 186	C212 C213	Upholstery leather. Lace leather. General service bed. Standard hospital bed.	242 243a 244 245	C194 C195	Wrought iron pipe (welded) (black and galvanized). Chinaware, vitrified. Milled toilet soap. Powdered soap (for laundry use).
187a 188 189		Beds, surgical. Folding hospital cot. Adjustable spring bottom (Gatch frame).	$246 \\ 247 \\ 248 \\ 249$	$\begin{array}{c} C193 \\ C205 \\ C206 \\ C204 \end{array}$	Liquid soap (for laundry use). Gypsum plaster. Calcined gypsum. Hydrated lime for structural
19 0 191 192 193		Liberty steel cot. Brush, blacking and dauber. Brush, casting. Brush, clothes scrubbing.	250	C201	purposes. Quicklime for structural pur- poses.
194 195 196		Brush, cuspidor. Brush, dauber, long paddle.	251a 252b 253a	C255 C258 C257	Cheesecloth for wiping purposes. Cheesecloth, unbleached. Cheesecloth, bleached or semi- bleached or semi-
$190 \\ 197 \\ 198$		Brush, deck scrubbing. Brush, hand floor scrubbing. Brush, hair, military.	254 b 255a	C256 C259	bleached. Denim, brown (shrunk). Brown denim (unshrunk).
$199 \\ 200 \\ 201 \\ 202$		Brush, radiator dusting. Brush, shaving. Brush, sidewalk. Brush, tooth.	256b 257a 258a	$C265 \\ C266 \\ C270$	Denim, indigo blue (shrunk). Indigo blue denim (unshrunk). Mercerized cotton airplane cloth, grade A.
203		Brush, window.	259	C261	Colored cotton rags for wiping machinery (sterilized).
$204 \\ 205$		Broom, rattan push. Broom, rattan (upright).	260	C267	Wiping cloths.
206 207 208a		Broom, scrubbing. Broom, wire push.	261	C264	White cotton rags for wiping ma- chinery (sterilized).
209 210	C191 C190	Duster, counter. Battleship linoleum. Plain, inlaid, and printed lino-	262a 263a 264a 265a	C262 C263 C260	Cotton waste, white. Cotton waste, colored. Wool waste, colored. Ink, drawing, black waterproof.
211 212		leum. Magnesia asbestos plaster. Magnesia molded pipe covering and blocks.	266a 267 268a	C197 	Indelible marking ink for fabrics. *Meat and meat-food products. Brick, fire-clay.
213		Hand chemical fire extinguishers (soda-and-acid type).	269 270		Rods, welding, nonferrous, for gas welding. *Fruits (fresh, canned, and dried)
214 215a 216	$C192 \\ C247 \\ C228$	Asphalt prepared roofing. Surgeons' rubber aprons. Helmet-shaped ice bag.	271		and fruit products. *Vegetables (fresh, canned, and
217	C227	Rubber ice bags.	272		dried). Naval and commercial brass cast-
218 219 220a 221a	$\begin{array}{c} C222\\ C219\\ C249\\ C248\\ \end{array}$	Politzer bags. Rubber bandages. Cloth-inserted hot-water bottle. Rubber hot-water bottles.	273 274 275		Ings. Spiegeliesen. Refrigerators. Road oil for hot application (type
$222 \\ 223$	C225	Rubber catheters. Rubber cement for medical	276a		OH-1-25). Asphalt for use in road and pave-
$224 \\ 225$	C 226 C 223	rubber goods. Rubber finger cots. Rubber tips for crutches.	277		ment construction. Petroleum asphalt for joint filler (squeegee or pouring method), Type PAF-1-25.
226a 227a 228 229	C254 C246 C218 C217	Cloth-inserted ring cushions. Rubber ring cushions. Rubber dam. Surgeons' rubber gloves.	278	C215	Outside white titanium-zinc paint (semipaste and ready mixed).
230a 231	C245 C224 C259	Surgical operating pads. Rubber pillow cases.	279 280		Tars for cold application. Refined tar for hot application (type TH-1-25)
232a 233a 234a	C252 C253 C250	Rubber åir pillows. Rubber sheeting. Cloth-inserted fountain syringe.	281 282 283	C216	Tar for use in repair work. Refined tar for construction, Putty.

Numerical list of specifications-Continued

Federal Specifi- cations Board ards specifi- Circu- lar No.Bureau TitleFederal Specifi- cations Board specifi- Circu- cation No.Bureau of Stand- ards cation Circu- lar No.	Title
	r cent rag heavy ledger pa-
286 Brass castings to be brazed. 331a Paper.	white. , manifold, 50 per cent rag,
pipe, copper, seamless, stand- 332 Whisk	te and colored, glazed. 5 brooms. brooms.
334a C298 Clay,	fire. etories, fire-clay, plastic.
289 Gauze, plain.	ers' hardware. (Price, 15
291 C229 Friction tape. cents	s.) ressed cork (cork board).
293 C214 Medium and light rust preven-	d cork for insulating pur-
tive compounds. 339 General	al specification for metals. ing paste.
	l metal polish.
size,	brass, seamless, iron pipe standard and extra strong.
roofing and shingles. coate	ron soil pipe and fittings, ed and uncoated.
298 Bandage, gauze, compressed. purp	ecloth remnants for wiping poses.
sorted. mate	al specifications for textile erials (methods of physical chemical tests).
	newable plug fuzes.
302 C278 Brown wide cotton sheetings. 347 Lapwe	elded and seamless steel er tubes.
304 C274 Bleached cotton sheets (medium 348 Standa	ard miscellaneous chain attachments.
305 C277 Bleached cotton pillow cases. 349 Lapwe tube	elded charcoal iron boiler s.
307 Silver solder.	ete reinforcement bars.
309Thermometers, clinical.352Structure310Petroleum ether.353Insect	ural steel for bridges. ural steel for buildings. powder (pyrethrum pow-
	n fluoride (insecticide). n cyanide (for use as an
	ticide in fumigation),
exceeding 3,000 volts to ground). 356 Dental	l amalgam alloy. le catgut ligatures (surgi-
314 Railroad track scales. 315 Sugar and sugar products. 358a Desks,	atgut suture material). wood.
316 Steel blooms, billets, slabs, and 359a Furnit	ure, office sectional, cabi- and trays, wood.
bars, for reforging, carbon and 360 Rulers alloy.	
318 Eosin Y (C. I. No. 768). 362 Liquid	and scissors. I measuring devices, retail
	r-rcsisting safes. iments.
and colored. 365a *Sea for	ood (fresh, salt, smoked, canned).
321 100 per cent rag ledger paper,	lar stands and pads.
322 75 per cent rag ledger paper, white 367a Shades ers, stand colored.	s, window, shade cloth roll- slats, cords, and accesso-
	and pin cups.
325 50 per cent rag lithograph-finish 370 Manga	num bronze castings. nese bronze castings.
	, for remelting. Iral nickel steel.
327 Blotting paper, white and colored. 373 Structure Conden	ural steel for cars. nser tubes and tubes for
328 Sulphite bond paper, white and ferrul colored. 375 C302 Shellac	le stock (Admiralty metal). , flake orange.
329 Sulphite writing paper, white and 376 C303 Varnish	h, shellac. fasteners, brass.

Numerical list of specifications—Continued

	1		Federal	1	
Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title
378		Castings. iron, mallcable.		C315	Soda, caustic (lye) (for cleaning
379 380	C301	Ink, drawing, colored waterproof. Cement, asphalt plastic.	431	C316	purposes). Soda, laundry (washing soda).
381a 382	C306	*Dairy products. Matting, rubber.	432 433	C317	Sodium carbonate, granular (monohydrate crystals). Hatchets.
$\frac{383}{384}$	C308 C283	Stoppers, rubber. Stitches, seams, and stitching. (Price, 20 cents.)	434		Bars, chisel, crow and pinch.
385		Paper, flint. Paper, garnet.	$435 \\ 436 \\ 437$		Cutters, glass. Dividers. Cutters, pipe.
$\frac{386}{387}$		Cloth, abrasive, aluminum oxide.	438		Chisels, gouges, and slicks, wood-
388 389		Cloth, emcry. *Miscellaneous provisions.	439		workers'. Coppers, soldering.
		Polish, silver. Iron bar, wrought, refined.	$\begin{array}{c} 440\\ 441\end{array}$		Sets, hand saw. Scribers, machinists'.
392		Brass. rods, bars, shapes, plates, sheets, and strips, commercial.	442		Knives, shoe.
393		Unions, malleable iron or steel.	$\begin{array}{c} 443 \\ 444 \end{array}$	C321 C322	Cement, masonry. Integral waterproofing material,
$\frac{394}{395}$		General specification for paper. Preservatives, wood, and proc- esses of treatment.			water-repellent type (for use with Portland cement, mortar,
396 397		Brush, calcimine. Brush, dust, ceiling and wall.	445	C323	or concrete). Cement, plastic magnesia (mag- nesia-oxychloride), used as flooring, bases, wainscots, etc.
398 399		Brush, fiber garage. Brush, flat fitch.	446		Ammonium chloride (sal am-
400 401		Sweep, floor, hair. Brush, glue, round. Brush, gluc, flat.	447	C326 C310	moniac). Rope, cotton. Plumbing fatures (for lend use)
402 403		Brush, lacquering, flat, camel	448 449	0.310	Plumbing fixtures (for land use). (Price, 15 cents.) Adzcs.
404		hair. Brush, marking.	450		Shaves, spoke.
$ \frac{405}{406} $		Brush, mottling, camel hair. Brush, sash tool, oval.	$451 \\ 452$		Shears, tinners', hand (snips). Materials for top-soil or sand-
407		Brush, hand scrub, white tam- pico.	453		clay road surfaces. Gravel for gravel roads.
408		Furniture and cabinets, office steel sectional.	454		Coarse aggregate for Portland ce- ment concrete pavement or
$\begin{array}{c} 409 \\ 410 \end{array}$		Chairs, office. Tubes, radio receiving electron.	455		base (stone, slag, and gravel). Broken stone, broken slag, or
$\frac{411}{412}$		Tableware, silver platcd. Paste, office and library.	450		gravel for bituminous surface treatment.
$\frac{413}{414}$	C312	Padlocks. Matting, rubber, for use around	456		Broken stone and broken slag for waterbound base or wearing course.
		electrical apparatus or circuits not exceeding 3,000 volts to ground.	457		Broken stone and broken slag for bituminous macadam base or surface course.
$415 \\ 416$		Blades, hack saw. Braces, ratchet.	458		Broken stone and broken slag for
417		Drills, breast. Pullers, pail	450		bituminous concrete base or surface course. Broken stone and broken slag for
418 419 420		Pullers, nail. Rules. Wax, sealing.	459		binder course, sheet asphalt pavement.
$\begin{array}{c} 420\\ 421 \end{array}$		Metol (mono-methyl-para-amino phenol sulphate).	460		Sands for use in sheet asphalt or bituminous concrete pave- ments.
422	C313	name).	461		Sand for cement grout filler, brick and stone block pave-
423		Roofing, prepared, asphalt and asbestos, slate-surfaced.	100		ments.
$\begin{array}{c} 424 \\ 425 \end{array}$		Roof coating, asphalt fibrous. Paper, carbon, black, light weight (for typewriter use).	462		Sand for cement mortar bed for brick, stone block, or wood block pavements.
426		Paper, carbon, black, standard	463		Mineral filler for sheet asphalt or
$427 \\ 428$	C318	weight (for typewriter use). Tubing, brass, seamless. Matches, safety (full size, in	464		asphaltic concrete pavements (Portland cement, limestone dust, and dolomite dust). Fine aggregate for Portland ce-
429	C314	boxes).			ment concrete pavement or base (sand, etc.).

Numerical list of specifications-Continued

Federal Specifi- cations Board specifi- cation No.	Title ·	Federal Specifi- cations Board specifi- cation No.	Bureau of Stand- ards Circu- lar No.	Title
465	 Materials for cushion course, brick, stone block, or wood block pavement (sand, slag,	480 481 482 483		Saws. Jacks. Leather, bag.
466	 limestone screenings, etc.). Belting, conveyor (stitched duck).	483 484a		Leather, rigging. Paper, manifold, 50 per cent rag, white and colored, unglazed.
467	 Copper rods, bars, shapes, plates, sheets, and strips.	485	C 336	Gaskets, metallic encased.
468	 Silver, nickel, rods, bars, shapes, plates, sheets, and strips (Ger- man silver).	486 487 488 489	C 335 C 334	Packing, hard fiber sheet. Packings, asbestos wick and rope. Knives, drawing. Pipe fittings, cast-iron (thread-
469 470	 Steel, structural, for ships other than naval vessels. Calcium carbide.	490		ed). Tubes, seamless steel, for air- craft purposes.
471	 Cupboard and locker equipment,	491		Fans, electric, desk and bracket
472 473	 Thermometers, industrial. Scales, weighing, general specifi- cation for.	492 493 494		type. Boots, rubber, hip. Boots, rubber, short, light. Boots, rubber, short, heavy.
474	 Ladles, plumbers.	495		Pipe, concrete, plain.
475a 476	 Oil, linseed, boiled. Chrome yellow (lemon, medium and orange; dry paste in oil and	496 497		Leather, hydraulic packing (vege- table tanned). Bunting, wool.
477 478 479	 paste in japan). Desks, steel. Tables and stands, wood. Frames, saw, hack.	498 499 500		Olleloth, table, white. Burlap, jute. Tablecloths, cotton.

Numerical list of specifications-Continued

A DIRECTORY OF LABORATORIES

COMMERCIAL TESTING AND COLLEGE RESEARCH

IN recognition of the desirability under present conditions of independent commercial testing service and in anticipation of a marked increase in the demand for such service in both domestic and export trade, there has been compiled by the National Bureau of Standards a list of laboratories throughout the country that are prepared to test various kinds of commodities to determine whether or not they comply with purchase specifications. This list is being issued as Bureau of Standards Miscellaneous Publica-

207 COMMERCIAL TESTING LABORATORIES

tion No. 90.

In accordance with the law the National Bureau of Standards makes tests and carries out investigations for other Government departments. Because of the large amount of this official work, it is impracticable for the bureau to make tests for private individuals if other laboratories can do the work. To inform interested persons of the location of other laboratories, the bureau has compiled a list of the 207 commercial testing laboratories throughout the country, together with indications of the types of commodities which they are prepared to test. Special care has been exercised to make this list complete.

143 COLLEGE RESEARCH LABORATORIES

To accompany the list of commercial testing laboratories there has been compiled a list of 143 colleges which are used not only for the purposes of instruction, but also to a considerable extent for research work. In fact, many important industrial research problems are being solved in the college laboratories. The existence of a thoroughly classified list of testing laboratories will have a number of beneficial effects in promoting the use of specifications, not the least important of which will be the inducement offered to the large number of purchasers who have hitherto hesitated to buy on specifications, because of their inability to determine whether or not commodities delivered correspond to the specification requirements.

For the purpose of minimizing the disadvantages incident to the use of specifications, the bureau has inaugurated a so-called "certification plan" in accordance with which there are compiled lists of manufacturers who have expressed



their desire to supply material complying with certain selected nationally recognized specifications and willing to certify to the purchaser, upon request, that the material thus supplied is guaranteed to meet the requirements and tests of the specifications. This plan has already been applied to 48 United States Government master specifications. Copies of any of the 48 lists of manufacturers, to which additions are being made from time to time, can be obtained upon request.

DIRECTIONS FOR OBTAINING THE DIRECTORY OF LABORATORIES

Copies of the Directory of Commercial Testing and College Research Laboratories may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., by sending WITH the order a remittance either in the form of post office money order, coupone (issued for the specific purpose of purchasing Government publications), express money order, New York draft, or cash—at the sender's own risk. It is important to follow these directions explicitly to avoid delay and confusion. An order blank is given below for your convenience. Add one-third if to be shipped to a foreign country (other than Mexico and Canada).

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There is inclosed 15 cents, for which please send me the "Directory of Commercial Testing and College Research Laboratories" (Bureau of Standards Miscellaneous Publication No. 90).

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Address : ...

A DIRECTORY OF SPECIFICATIONS

Considerable economy can be realized in the purchase of commodities by the use of specifications. Real competitive bidding can be invited, and the delivery of satisfactory material can be insisted upon. To an ever-increasing extent State and city governments, public utilities, and the better organized industries of the country are adopting the use of specifications, which has been a feature of Federal Government purchasing for many years.

Federal Government purchasing for many years. Information regarding the best known specifications for more than 6,000 commodities is given in convenient form in the National Directory of Commodity Specifications, which has been issued by the Bureau of Standards with the cooperation of the Bureau of Foreign and Domestic Commerce of the Department of Commerce. The book tells not only what specifications are in general use, but also by whom they were prepared and where copies can be obtained. In it are conveniently indexed for ready finding about 27,000 specifications prepared by the Federal Specifications Board and the separate departments of the Federal Government, by State and city purchasing agents, public utilities, technical societies, and trade associations. At the request of Secretary Hoover an advisory board was selected by these interests to represent them in supervising the preparation of the Directory. The contents include: A statement and indorsement by the advisory board,

The contents include: A statement and indorsement by the advisory board, a foreword by Secretary Hoover, a thoroughly classified list of specifications for all types of commodities. There are also included an alphabetical list of commodifies, which serves as an index to the specifications, and directions for obtaining copies of specifications listed in the Directory.

Decimal class	Commodity groups	Commodities indexed	Approximate number of specifications
000 100 200 300 400 500 600 700 800 900	Animal and animal products Vegetable food products, oil, seeds, expressed oil, and bev- erages. Other vegetable products (except fibers and wood) Textiles. Wood and paper. Nonmetallic minerals. Ores, metals, and manufactures (except machinery and vehicles). Machinery and vehicles. Chemicals and allied products. Miscellaneous. Total.	350 525 400 275 625 725 1,700 800 650 6,650	1,600 2,100 800 1,900 3,300 3,300 6,400 2,900 2,400 2,400 2,400 2,400 2,7,100

Summary of commodities and specifications therefor

Whether you are a producer or a consumer, a seller or a buyer of commodities; whether you are interested in the preparation or in the use of specifications, the Directory contains for you information which you can not afford to do without. It is printed in small, but legible! type, and thus the number of pages has been kept at the minimum, 385, without sacrificing the usefulness of the Directory. It is bound in cloth. The cost of printing and binding the book at the Government Printing Office is \$1.25.

DIRECTIONS FOR OBTAINING THE DIRECTORY OF SPECIFICATIONS

Copies of the National Directory of Commodity Specifications may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., by sending with the order a remittance either in the form of post-office money order, coupons (issued for the specific purpose of purchasing Government publications), express money order, New York draft, or cash—at the sender's own risk. It is important to follow these directions explicitly to avoid delay and confusion. If the Directory is to be shipped to a foreign country (other than Mexico and Canada), add one-third to the price, making the total \$1.67.