

COMMERCIAL STANDARD CS229-60

Copper Drainage Tube (DWV)

A recorded
voluntary standard of the
trade published by
the U.S. Department
of Commerce



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U.S. DEPARTMENT OF COMMERCE

Frederick H. Mueller, Secretary

BUSINESS AND DEFENSE SERVICES ADMINISTRATION

OFFICE OF TECHNICAL SERVICES

Commodity Standards Division

With the cooperation of the
National Bureau of Standards

COMMERCIAL STANDARDS

Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Commodity Standards Division of the Office of Technical Services, Business and Defense Services Administration, and with the National Bureau of Standards. Their purpose is to establish quality criteria, standard methods of test, rating, certification, and labeling of manufactured commodities, and to provide uniform bases for fair competition.

The adoption and use of a Commercial Standard is voluntary. However, when reference to a Commercial Standard is made in contracts, labels, invoices, or advertising literature, the provisions of the standard are enforceable through usual legal channels as a part of the sales contract.

Commercial Standards originate with the proponent industry. The sponsors may be manufacturers, distributors, or users of the specific product. One of these three elements of industry submits to the Commodity Standards Division the necessary data to be used as the basis for developing a standard of practice. The division by means of assembled conferences or letter referenda, or both, assists the sponsor group in arriving at a tentative standard of practice and thereafter refers it to the other elements of the same industry for approval or for constructive criticism that will be helpful in making any necessary adjustments. The regular procedure of the division assures continuous servicing of each Commercial Standard through review and revision whenever, in the opinion of the industry, changing conditions warrant such action.

SIMPLIFIED PRACTICE RECOMMENDATIONS

Under a similar procedure the Commodity Standards Division cooperates with industries in the establishment of Simplified Practice Recommendations. Their purpose is to eliminate avoidable waste through the establishment of standards of practice for sizes, dimensions, varieties, or other characteristics of specific products; to simplify packaging practices; and to establish simplified methods of performing specific tasks.

The initial printing of CS229-80 was made possible through the cooperation of the Copper & Brass Research Association.

Copper Drainage Tube (DWV)

[Effective June 1, 1960]

1. PURPOSE

1.1 The purpose of this commercial standard is to provide a nationally recognized standard of quality and standard sizes for copper drainage tube. Its general adoption and use will serve to promote fair marketing practices and bring about a better understanding between manufacturers, distributors and users of the product.

2. SCOPE

2.1 This standard provides minimum requirements for eight standard sizes of seamless copper tube manufactured in conformance with ASTM Designation B 306-59¹ for sanitary drainage piping and for other non-pressure applications, in sizes ranging from 1¼ inch to 8 inch nominal size. It covers manufacture, temper, chemical composition, mechanical properties, workmanship, marking, dimensions, tolerances, and weights. It also includes methods of test, and a recommended statement for indicating compliance with the standard.

3. DEFINITION

3.1 The term "Copper drainage tube" applies only to the tube commercially known as "Copper Drainage Tube (DWV)" and intended for above-ground use with soldered fittings for sanitary drainage, such as soil, waste, and vent piping, and for other non-pressure applications.

4. REQUIREMENTS

4.1 Material.

4.1.1 *Chemical composition.*—Copper drainage tube shall be made of material of the following composition:

Copper*, percent, minimum	99.90
Phosphorus, percent	0.004 to 0.040

*Silver counting as copper.

4.1.2 *Mechanical properties.*—The material shall conform to the following mechanical requirements:

Tensile strength, minimum	36,000 psi
Rockwell hardness, minimum, F scale	55

4.1.3 *Temper.*—The tube shall be furnished in the "drawn" condition.

4.2 *Sizes.*—The standard tube sizes, outside diameter, wall thickness, weights and tolerances on wall thickness and average outside diameter shall be as shown in Table 1.

¹ Copies of ASTM publications are obtainable from the American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa.

TABLE 1. *Standard sizes, dimensions, weights, and tolerances for copper drainage tube*

Standard size	Actual outside diameter	Wall thickness	Theoretical weight per foot	Tolerances	
				Wall thickness ¹	Average outside diameter ²
<i>Inch</i>	<i>Inch</i>	<i>Inch</i>	<i>Pound</i>	<i>Inch</i>	<i>Inch</i>
1¼	1.375	0.040	0.650	±0.003	±0.0015
1½	1.625	.042	.809	±.003	±.002
2	2.125	.042	1.07	±.004	±.002
3	3.125	.045	1.69	±.004	±.002
4	4.125	.058	2.87	±.007	±.002
5	5.125	.072	4.43	±.008	±.002
6	6.125	.083	6.10	±.008	±.002
8	8.125	.109	10.6	±.011	+ .002 - .004

¹ The tolerances listed represent the maximum deviation at any point.

² The average outside diameter is the average of the maximum and minimum outside diameters as determined at any one cross section of the tube.

4.3 *Length.*—The tube shall be furnished in straight lengths. The standard length shall be 20 feet, with a tolerance of plus 1 inch and minus 0 inch.

4.4 *Roundness tolerance.*—Neither the major nor minor diameter shall vary more than 1.5 percent from the specified diameter.

4.5 *Squareness of cut.*—The angle of cut of the end of any length may depart from the square by not more than 0.016 inch per inch of diameter of the tube.

4.6 *Marking.*—The name or trade-mark of the manufacturer and the letters "DWV" shall be permanently marked on each tube at intervals not greater than 1½ feet. Each tube shall also be marked along its full length with similar markings in yellow ink with letters approximately ¼ inch in height and with a continuous stripe between.

4.7 *Workmanship.*—The material shall be free from defects of a nature that interfere with normal commercial application.

5. METHODS OF TEST

5.1 Tube conforming to this Commercial Standard shall meet all applicable tests in "Standard Specification for Copper Drainage Tube (DWV)," ASTM Designation B306-59.

6. PACKING

6.1 Standard copper drainage tube shall be packed in such a manner as to provide reasonable protection against damage in ordinary handling and transportation.

7. IDENTIFICATION

7.1 In order to assure the purchaser that he is receiving tube that complies with the standard requirements set forth herein, it is recommended that copper drainage tube manufactured to conform to such requirements be identified by a sticker, tag, or other label attached to the package or tube itself, carrying the following statement:

This tube meets the requirements of Commercial Standard CS229-60 as developed by the industry under the procedure of the Commodity Standards Division, Office of Technical Services, and issued by the United States Department of Commerce.

Or, more briefly—

Conforms to CS229-60 as developed by the industry and issued by the U.S. Department of Commerce.

8. EFFECTIVE DATE

Having been passed through the regular procedure of the Commodity Standards Division, and approved by the acceptors hereinafter listed, this Commercial Standard was issued by the U.S. Department of Commerce, effective June 1, 1960.

9. HISTORY OF PROJECT

In a letter dated December 1, 1958, the Copper and Brass Research Association requested the cooperation of the Commodity Standards Division in the establishment of a Commercial Standard for copper drainage tube, and submitted as a basis for the standard a specification developed by that organization.

The Commodity Standards Division circulated copies of the proposed Commercial Standard to representative producers, distributors, testing laboratories, users and Government agencies for constructive comment. All comments and suggestions received were carefully considered and adjustments were made to the proposal to satisfy the comment wherever practicable. The recommended Commercial Standard TS-5457, was circulated to the trade on August 24, 1959 for acceptance. The Copper and Brass Research Association subsequently requested the inclusion in the standard of an additional size of tube and an increase in the roundness tolerance. This proposal was circulated to all acceptors for approval November 30, 1959, and general concurrence was received.

On May 2, 1960, the Commodity Standards Division announced that acceptances had been received representing a satisfactory majority of the industry, and the Commercial Standard, to be designated CS 229-60, would be considered effective beginning June 1, 1960.

Project Manager: D. R. Stevenson, Commodity Standards Division, Office of Technical Services.

Technical Adviser: Robert S. Wyly, Building Technology Division, National Bureau of Standards.

STANDING COMMITTEE

The Committee was in the process of formation when the standard was published. A complete list of the members will be available from the Commodity Standards Division.

ACCEPTORS

The manufacturers, distributors, users and others listed on page 7 have individually indicated in writing their acceptance of this Commercial Standard prior to its publication. The acceptances indicate an intention to utilize the standard as far as practicable, but reserve the right to depart from it as may be deemed desirable. The list is published to show the extent of recorded public support for the standard, and should not be construed as indicating that all products made by the acceptors actually comply with its requirements.

Products that meet all requirements of the standard may be identified as such by a certificate, grade mark, or label. Purchasers are encouraged to require such specific evidence of compliance, which may be given by the manufacturer whether or not he is an acceptor.

LIST OF ACCEPTORS

ASSOCIATIONS

(General Support)

American Association of Engineers, Chicago, Ill.
 American Specification Institute, Chicago, Ill.
 Central Supply Association, Chicago, Ill.
 National Association of Home Builders, Washington, D.C.
 Western Plumbing Officials Association, Los Angeles, Calif.

FIRMS AND OTHER INTERESTS

Alexandria, City of, Alexandria, Va.
 Allen & Jamison Co., Tuscaloosa, Ala.
 Amarillo Hardware Co., Amarillo, Tex.
 American Brass Co., Waterbury, Conn.
 American Plumbing & Steam Supply Co., Tacoma, Wash.
 Bayonne Plumbing Supply Co., Inc., Bayonne, N.J.
 Beck & Gregg Hardware Co., Atlanta, Ga.
 Bellman, Gillett & Richards, Toledo, Ohio (General Support)
 Beroza, H., Inc., Hempstead, N.Y.
 Bluefield Supply Co., Bluefield, W. Va.
 Bridgeport Brass Co., Bridgeport, Conn.
 Brust & Brust, Milwaukee, Wis.
 Buhrman-Pharr Hardware Co., Texarkana, Ark.-Tex.
 Camlet, J. Thomas, Garfield, N.J.
 Carpenter, J. S., Inc., Rochester, N.Y.
 Cellarius & Hilmer, Cincinnati, Ohio
 Chase Brass & Copper Co. Inc., Waterbury, Conn.
 Cleveland, City of, Cleveland, Ohio
 Coast Pipe & Supply Co., San Jose, Calif.
 Coast-to-Coast-Stores, Central Organization, Inc., Minneapolis, Minn.
 Cohagen, Chandler C., Billings, Mont.
 Colorado Springs Supply Co., Colorado Springs, Colo.
 Conrad & Cummings, Binghamton, N.Y.
 Corey, E., & Co., Portland, Maine
 Dalziel Plumbing Supplies, San Francisco, Calif.
 Danser Hardware & Supply Co., Weston, W. Va.
 Davis Engineering (A Division of American Metal Products Co.), Elizabeth, N.J.
 Delray Beach, City of, Delray Beach, Fla. (General Support)
 Detroit, City of, Department of Buildings & Safety Engineering, Detroit, Mich.
 Du-Kane Co., Pittsburgh, Pa.
 Elkhart, City of, Elkhart, Ind.
 Eugene, City of, Building Department, Eugene, Oreg. (General Support)
 Evanston, City of, Evanston, Ill. (General Support)
 Faulkner, Kingsbury & Stenhouse, Washington, D.C. (General Support)
 Flannagan, Eric G., and Sons, Henderson, N.C.
 Froehling & Robertson, Inc., Richmond, Va.
 Glick Supply Co., Marshalltown, Iowa
 Hahn & Hayes, Toledo, Ohio
 Hajoca Corp., Ardmore, Pa.
 Hartford Plumbing Supply Inc., Hartford, Conn.
 Hasson-Bryan Hardware Co., Morristown, Tenn.
 Haw Hardware Co., Ottumwa, Iowa
 Herlan-Patterson, Inc., Buffalo, N.Y.
 Herron Testing Laboratories, Inc., Cleveland, Ohio
 Hinkle Supply Co., Inc., Birmingham, Ala.
 Hirzel, Charles K., New York, N.Y. (General Support)
 Honolulu Iron Works Co., Honolulu, Hawaii
 Hubbard, S. B., Co., Jacksonville, Fla.
 Hubbell Metals Inc., St. Louis, Mo.
 Hughes Heating Co., Memphis, Tenn.
 Hussey, C. G. & Co., Pittsburgh, Pa.
 Idaho Hardware & Plumbing Co., Ltd., Boise, Idaho
 Illinois Supply Co., Aurora, Ill.
 Janney, Semple, Hill & Co., Minneapolis, Minn.
 Jardine-Plumbing Co., Chillicothe, Ohio
 Johnson, J. D. Co., Inc., Pensacola, Fla.
 Kahn, Albert, Associated Architects & Engineers, Inc., Detroit, Mich. (General Support)
 Keenan Pipe & Supply Co., Los Angeles, Calif.
 Kensico Tube Co. Inc., Mt. Kisco, N.Y.
 Koeppe, Earl E., Fort Worth, Tex.
 Lansing Supply Co., Lansing, Mich.

Lebanon Plumbing Supply Co., Lebanon, Pa.
 Lee Hardware Co., Salina, Kans.
 Lee Hardware Co., Ltd., Shreveport, La.
 Lehigh Valley Supply Co., Allentown, Pa.
 Lewin-Mathes Co., Division of Cerro de Pasco Corp., St. Louis, Mo.
 Lubenow & Gobster Inc., Milwaukee, Wis.
 Loeb, Laurence M., White Plains, N.Y.
 Long Supply Co., Chicago, Ill.
 Los Angeles, City of, Department of Building & Safety, Los Angeles, Calif. (General Support)
 Macon, City of, Macon, Ga.
 Makielski, Stanislaw J., Charlottesville, Va. (General Support)
 Manchester Supply Co., Manchester, N.H.
 Mann & Co., Hutchinson, Kans. (General Support)
 Mansfield Hardware & Supply Co., Mansfield, Ohio
 McComb Supply Co., Harlan, Ky.
 McGowin-Lyons Hardware & Supply Co., Mobile, Ala.
 McPherson Co., Greenville, S.C. (General Support)
 Michigan Supply Co., Lansing, Mich.
 Miller, Vrydag & Miller, Terre Haute, Ind.
 Morley Murphy Co., Green Bay, Wis.
 Mott Company of Pennsylvania, Camden, N.J.
 Mueller Brass Co., Port Huron, Mich.
 National Furnace & Sheet Metal Supply Co., Detroit, Mich.
 New Hampshire Supply Co., Manchester, N.H.
 Noland Co., Inc., Newport News, Va.
 Norton Hardware Co., Norton, Va.
 Oakland, City of, Plumbing Division, Oakland, Calif.
 Ohio State University Architect's Office, Columbus, Ohio
 Olympia, City of, Olympia, Wash. (General Support)
 Omaha, City of, Omaha, Nebr. (General Support)
 Palo Alto, City of, Palo Alto, Calif.
 Patzig Testing Laboratories, Des Moines, Iowa
 Penniman & Browne, Inc., Baltimore, Md.
 Phelps Dodge Copper Products Corp., New York, N.Y.
 Pidgeon-Thomas Iron Co., Memphis, Tenn.
 Plumbers Supply Co., New Bedford, Mass.
 Plumber's Supply Co., Louisville, Ky.
 Poncea City, City of, Poncea City, Okla.
 Probst Supply Co., Marion, Ohio
 Rader, Paul W., Denver, Colo. (General Support)
 Rapid Plumbing Co., Rapid City, S. Dak.
 Reading Tube Corporation, New York, N.Y.
 Revere Copper & Brass, Inc., New York, N.Y.
 Richmond, City of, Department of Public Works, Richmond, Calif.
 Richmond Supply Corp., Richmond, Ind.
 Roberts-Gordon Appliances Corp., Buffalo, N.Y.
 Robischung-Kiesling Contracting Corp., Houston, Tex.
 San Bernardino County, Department of Building & Safety, San Bernardino, Calif.
 Santa Rosa, City of, Building Department, Santa Rosa, Calif. (General Support)
 Schaeffer, Wilson & Evans, Bloomington, Ill.
 Schoeller Plumbing, Trenton, N.J.
 Scovill Manufacturing Co., Waterbury, Conn.
 Sears, Roebuck & Co., Chicago, Ill.
 Seattle-King-County, Department of Public Health, Seattle, Wash.
 Shivers, W. M., Plumbing Supply Co., Houston, Tex.
 Southern States Supply Co., Columbia, S.C.
 Square Supply Co., Knoxville, Tenn.
 Strange-Jones Wholesale Co., Clinton, Okla.
 Stravs, Carl B., Twin Falls, Idaho
 Texas City, City of, Texas City, Tex. (General Support)
 Thorne, Henry Calder, Ithaca, N.Y.
 Triangle Conduit & Cable Co., Inc., New Brunswick, N.J.
 Trumbull Plumbing Supply Co., Inc., Warren, Ohio
 United States Testing Co., Inc., Hoboken, N.J.
 United Wire & Supply Corp., Providence, R.I.
 Urban Plumbing & Heating Co., Portland, Oreg.
 Village of Blooming Prairie, Blooming Prairie, Minn.
 Vorys Brothers, Inc., Columbus, Ohio

Walker Supply Co., Trenton, N.J.
Walsh, Louis A., Waterbury, Conn.
Wilberding Company, Inc., Washington, D.C.
Williams & Co., Inc., Pittsburgh, Pa.
Wilson, City of, Wilson, N.C. (General Support)
Witmer, Maurice E., Portsmouth, N.H.
Wisconsin River Supply Co., Wausau, Wis.
Wolverine Tube, Division of Calumet & Hecla,
Inc., Allen Park, Mich.
Woolcock Plumbing & Heating Co., Inc., Niagara
Falls, N.Y.

Worthington, George, Co., Cleveland, Ohio
Wyeth Co., St. Joseph, Mo.
Ziel-Blossom & Associates, Cincinnati, Ohio

U.S. GOVERNMENT

Department of the Army
Atomic Energy Commission
Department of Health, Education and Welfare
Department of the Interior
Veterans Administration

ACCEPTANCE OF COMMERCIAL STANDARD
Copper Drainage Tube (DWV)

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this Commercial Standard.

Date _____

Commodity Standards Division
 Office of Technical Services
 Business and Defense Services Administration
 U. S. Department of Commerce
 Washington 25, D. C.

Gentlemen:

We believe that this Commercial Standard constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production¹ distribution¹ purchase¹ testing¹
 of this commodity.

We reserve the right to depart from the standard as we deem advisable.

We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

(Cut on this line)

Signature of authorized officer _____
 (In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer _____

Organization _____

(Fill in exactly as it should be listed)

Street address _____

City, zone, and State _____

¹ Under score the applicable words. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interest, trade associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.

TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial Standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.
2. *The acceptor's responsibility.*—The purpose of Commercial Standards is to establish, for specific commodities, nationally recognized grades or consumer criteria, and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the standard, where practicable, in the production, distribution, or consumption of the article in question.
3. *The Department's responsibility.*—The major function, performed by the Department of Commerce in the voluntary establishment of Commercial Standards on a nationwide basis is fourfold: First, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.
4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or of the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

DEPARTMENT OF COMMERCE

National Bureau of Standards
VOLUNTARY PRODUCT STANDARDS
Notice of Action on Proposed
Withdrawal

In accordance with § 10.12 of the Department of Commerce Procedures for the Development of Voluntary Product Standards (15 CFR Part 10, as amended; 35 F.R. 8349 dated May 28, 1970), notice is hereby given of the withdrawal of 111 Voluntary Product Standards identified below, including 78 standards identified as "Simplified Practice Recommendations" (SP), and 33 standards previously identified as "Commercial Standards" (CS). Each of these standards has been found to be obsolete, technically inadequate, no longer acceptable to and used by the industry, or otherwise not in the public interest.

Public notice of the Department's intention to withdraw these standards was published in the FEDERAL REGISTER on February 10, 1971 (36 F.R. 2813), and a 45-day period was provided for the submission of comments or objections concerning the proposed withdrawal of any of these standards. No objections to the Department's intention of withdrawing any of these standards have been received by the National Bureau of Standards.

The effective date for the withdrawal of these standards will be 60 days after the publication of this notice. This withdrawal action terminates the authority to refer to these standards as Voluntary Product Standards developed under the Department of Commerce Procedures.

- R 4-36... Asphalt.
- R 6-50... Ferrous range boilers, expansion tanks, and solar tanks.
- R 9-47... Galvanized woven-wire fencing and barbed wire.
- R 19-37... Asbestos paper and asbestos millboard.
- R 21-46... Lavatory and sink traps.
- R 23-54... Plow bolts.
- R 25-50... Steel reinforcing bars.
- R 35-44... Steel lockers.
- R 38-37... Sand-lime brick.
- R 49-26... Sidewalk, floor, and roof lights.
- R 59-27... Rotary-cut lumber stock for wire-bound boxes.
- R 63-28... Metal spools (for annealing, handling and shipping wire).
- R 65-31... Packaging of overhead electric railway material.
- R 67-36... Taper roller bearings.
- R 68-41... Metal and nonconducting flashlight cases.
- R 69-27... Packaging of razor blades.
- R 71-28... Turnbuckles.
- R 74-49... Hospital and institutional cotton textiles.
- R 75-29... Composition blackboard.
- R 80-28... Folding and portable wooden chairs.
- R 82-28... Hollow metal single-acting swing doors, frames and trim.
- R 83-28... Kalamain single acting swing doors, frames, and trim.
- R 88-37... Floor sweeps.
- R 89-35... Coated abrasive products.
- R 92-38... Hard fiber twine and lath yarn (ply and yarn goods).

- R 93-39... Paper shipping tags.
- R 94-63... Open-web steel joists and open-web malleable steel joists.
- R 95-30... Skid platforms.
- R 97-47... Bell-bottom screw jacks.
- R 101-40... Metal partitions for toilets and showers.
- R 102-33... Granite curbstones.
- R 105-33... Wheelbarrows.
- R 107-31... Glassine bags.
- R 110-29... Soft fiber (jute) twine.
- R 112-29... Elastic shoe goring.
- R 115-30... Full-disk buffing wheels.
- R 119-31... Fast-sewage terry towels.
- R 122-31... Wire insect-screen cloth.
- R 123-43... Carbonated beverage bottles.
- R 124-31... Polished cotton twine.
- R 126-41... Set-up paper boxes (used by department and specialty stores).
- R 127-41... Folding paper boxes (used by department and specialty stores).
- R 128-41... Corrugated fiber boxes (used by department and specialty stores).
- R 131-35... Glass containers for mayonnaise.
- R 132-32... Dental rubber (base and veneering).
- R 143-33... Packaging of electric railway motor and controller parts.
- R 151-36... Cupola refractories.
- R 152-41... Extracted honey packages.
- R 153-42... Forged axes.
- R 158-42... Forged hammers.
- R 160-42... Forged hatchets.
- R 161-35... Packaging of automotive (bus) engine parts.
- R 166-37... Color code for marking steel bars.
- R 169-45... Bolts and nuts (stock production sizes).
- R 171-38... Wooden boxes for canned fruits and vegetables.
- R 172-51... Stock folding boxes for garments and dry cleaning.
- R 177-41... Single-faced corrugated board rolls (used by department and specialty stores).
- R 178-41... First-aid unit dressings and treatments (packaging of).
- R 181-41... Nonferrous range boilers.
- R 188-54... Spring and slotted clothespins (sizes and packaging).
- R 190-42... Round and flat hardwood toothpicks (sizes and packaging).
- R 196-42... Glass containers for green olives.
- R 199-43... Cloth window shades.
- R 201-43... Iron and steel pop safety valves.
- R 202-48... Tank-mounted air compressors (1/4 to 10 horsepower).
- R 203-44... Containers and packages for household insecticides (liquid spray type).
- R 204-44... Bronze pop safety valves, and bronze, iron and steel relief valves.
- R 205-44... Iron and steel relief valves for petroleum, chemical and general industrial services.
- R 209-45... Peanut butter packages and containers.
- R 212-45... Cast brass solder-joint fittings.
- R 215-46... Luggage (trunks and suitcases).
- R 219-46... Automatic regulating valves.
- R 232-48... Low-pressure lubricating devices.
- R 233-48... Rotary files and burs.
- R 234-48... Welded-wire fabric reinforcement concrete pipe.
- R 240-52... Plastic tableware.
- R 253-54... Retail container sizes for frozen fruits and vegetables.
- R 266-63... Gypsum board products.
- CS 3-40... Standard solvents (dry cleaning).
- CS 7-20... Standard weights malleable iron or steel screwed unions.
- CS 10-32... Foundry patterns of wood.
- CS 32-31... Cotton cloth for rubber and pyroxylin coating.
- CS 36-33... Fourdriner wire cloth.
- CS 48-40... Domestic burners for Pennsylvania anthracite (underfed type).
- CS 56E-41... Oak flooring (exports).
- CS 59-44... Textiles-testing and reporting.
- CS 62-38... Colors for kitchen accessories.
- CS 63-38... Colors for bathroom accessories.
- CS 68-38... Liquid phycochlorite disinfectant, deodorant, and germicide.
- CS 93-50... Portable electric drills (exclusive of high frequency).
- CS 94-41... Calking lead.
- CS 95-41... Lead pipe.
- CS 96-41... Lead traps and bends.
- CS 102E-42... Diesel and fuel-oil engines (export classifications).
- CS 108-43... Trending automobile and truck tires.
- CS 110-43... Tire repairs—vulcanized (passenger, truck, and bus tires).
- CS 112-43... Homogeneous fiber wall-board.
- CS E124-45... Master disks.
- CS 126-56... Tank-mounted air compressors (classification and testing).
- CS 130-47... Work gloves.
- CS 184E-49... Wire rope (export classifications).
- CS 184E-50... Concrete mixers (export classifications).
- CS 170-50... Cotton flour-bag (sack) towels.
- CS 175-51... Circular-knitted gloves and mittens.
- CS 179-51... Installation of attic ventilation fans in residences.
- CS 181-52... Water-resistant organic adhesives for installation of clay tile.
- CS 212-57... Steel sliding closet door and frame units.
- CS 213-57... Steel knockdown sliding closet door units (for wood frame installation).
- CS 221-59... Gel-coated glass-fiber-reinforced polyester resin bathtubs.
- CS 222-59... Gel-coated glass-fiber-reinforced polyester resin shower receptors.
- CS 229-60... Copper drainage tube (DWV).

LEWIS M. BRANSCOMB,
Director.

APRIL 15, 1971.

Approved: April 19, 1971.

JAMES H. WAZELIN, Jr.,
*Assistant Secretary
for Science and Technology.*

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