

National Bureau of Standards  
Library, N. W. Bldg.

AUG 10 1950

Commercial Standard 167-50

Reference book not to be  
taken from the Library.

# Automotive and General Service Copper Tube

U. S. DEPARTMENT OF COMMERCE



---

For sale by the Superintendent of Documents, U. S. Government Printing Office  
Washington 25, D. C. - Price 5 cents

U. S. DEPARTMENT OF COMMERCE

Charles Sawyer, Secretary

NATIONAL BUREAU OF STANDARDS

E. U. Condon, Director



# Automotive and General Service Copper Tube

A Recorded Voluntary Standard of the Trade

---

## COMMODITY STANDARDS

Simplified Practice Recommendations and Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Commodity Standards Division of the National Bureau of Standards. The purpose of Simplified Practice Recommendations is to eliminate avoidable waste through the establishment of standards of practice for stock sizes and varieties of specific commodities that currently are in general production and demand. The purpose of Commercial Standards is to establish standard methods of test, rating, certification, and labeling of commodities, and to provide uniform bases for fair competition.

The adoption and use of a Simplified Practice Recommendation or 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.

A Simplified Practice Recommendation or Commercial Standard originates 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 effective Simplified Practice Recommendation and Commercial Standard, through review and revision, whenever, in the opinion of the industry, changing conditions warrant such action. Simplified Practice Recommendations and Commercial Standards are printed and made available by the Department of Commerce through the Government Printing Office.

# COMMERCIAL STANDARD 167-50

for

## AUTOMOTIVE AND GENERAL SERVICE COPPER TUBE

[Effective May 10, 1950]

### 1. PURPOSE

1.1 The purpose of this commercial standard is to provide a nationally recognized standard of quality and standard sizes for automotive and general service copper 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 annealed copper tube manufactured in conformance with ASTM Specification B68, for automotive and general service purposes, in sizes ranging from  $\frac{1}{8}$  inch to  $\frac{3}{4}$  inch in outside diameter. It covers temper, manufacture, chemical composition, tensile properties, workmanship and finish, dimensions, weights, and tolerances. It also includes methods of test and packing, and a recommended statement for indicating compliance with the standard.

### 3. DEFINITION

3.1 The term "automotive and general service copper tube" applies only to tube intended for use in the field for repairs and alterations.

### 4. GENERAL REQUIREMENTS

4.1 *Temper.*—Tube covered by this standard shall be furnished in the soft-annealed temper.

4.2 *Manufacture.*—The tube shall be made from copper of any one of the three following types:

Type DLP—Phosphorized copper, low residual phosphorus.

Type DHP—Phosphorized copper, high residual phosphorus.

Type OF—Oxygen-free copper without residual metallic deoxidants.

4.2.1 The tube shall be bright-annealed after coiling.

4.3 *Chemical composition.*—The material shall conform to the chemical requirements given in table 1.

TABLE 1. *Chemical composition of copper tube*

	Type DLP	Type DHP	Type OF
Copper, <sup>1</sup> percent, min. ....	99.90	99.90	99.92
Phosphorus, percent (min. ....)	0.004	0.015	-----
(max. ....)	.012	.040	-----

<sup>1</sup> Silver counted as copper.

4.4 *Tensile properties.*—The material shall conform to the following requirements as to tensile properties:

Tensile strength, minimum—30,000 pounds per square inch.

Elongation in 2 inches, minimum—40 percent.

4.5 *Workmanship and finish.*—The finished tube shall be smooth, free from internal and external mechanical imperfections, and shall have a clean, bright appearance.

## 5. SIZES

5.1 The standard tube sizes, outside diameter, wall thickness, weights, and tolerances on wall thickness and average outside diameter are as shown in table 2.

TABLE 2. *Standard sizes, dimensions, weights, and tolerances for automotive and general service copper tube*

Nominal size	Actual outside diameter	Wall thickness	Weight per foot	Tolerances	
				Wall thickness <sup>1</sup>	Average outside diameter <sup>2</sup>
<i>Inch</i>	<i>Inch</i>	<i>Inch</i>	<i>Pound</i>	<i>Inch</i>	<i>Inch</i>
1/8	0.125	0.030	0.035	±0.003	±0.002
3/16	.188	.030	.058	±.0025	±.002
1/4	.250	.030	.080	±.0025	±.002
5/16	.312	.032	.109	±.0025	±.002
3/8	.375	.032	.134	±.0025	±.002
1/2	.500	.032	.182	±.0025	±.002
5/8	.625	.035	.251	±.003	±.002
3/4	.750	.035	.305	±.0035	±.0025

<sup>1</sup> The tolerances listed represent the maximum deviation at any point.

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

5.2 *Length.*—The standard length for coils of automotive and general service copper tube shall be 25 feet, with a tolerance of plus 12 inches and minus 0 inch.

## 6. METHODS OF TEST

6.1 Tube conforming to this commercial standard shall meet all applicable tests in "Standard Specification for Seamless Copper Tubing, Bright Annealed," ASTM Designation B68.

## 7. PACKING

7.1 Standard automotive and general service copper tube shall be packed in such a manner as to prevent damage in ordinary handling and transportation.

## 8. IDENTIFICATION

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

This tube meets the requirements of Commercial Standard CS167-50, as developed by the industry and trade under the procedure of the National Bureau of Standards, and issued by the United States Department of Commerce.

Or, more briefly—

Conforms to CS167-50, as developed by the industry and trade, and issued by the U. S. Department of Commerce.

## 9. EFFECTIVE DATE

9.1 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 United States Department of Commerce, effective from May 10, 1950.

Edwin W. Ely,

Chief, Commodity Standards Division.

## HISTORY OF PROJECT

On June 19, 1947, the Copper & Brass Research Association, on behalf of manufacturers of copper tube, requested the cooperation of the National Bureau of Standards in the establishment of a commercial standard for automotive and general service copper tube. This product is intended for use in the field for repairs and alterations.

A draft of a proposed commercial standard for automotive and general service copper tube was prepared, and circulated on May 28, 1948, to manufacturers, distributors, and users for consideration and acceptance. Some valuable comments and suggestions resulted from this circularization.

On September 30, 1949, the recommended standard, adjusted in accordance with the constructive suggestions received, was recirculated to the industry and trade. Written acceptances estimated to represent adequate support having been received, an announcement was issued on April 10, 1950, that the standard, designated CS167-50, would become effective for new production from May 10, 1950.

---

*Project Manager:* GEORGE E. UMHAU, Commodity Standards Division, National Bureau of Standards.

*Technical Adviser:* DR. WILLIAM G. BROMBACHER, Mechanics Division, National Bureau of Standards.

**STANDING COMMITTEE**

The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Comment concerning the standard and suggestions for revisions may be addressed to any member of the committee or to the Commodity Standards Division, National Bureau of Standards, which acts as secretary for the committee.

S. H. PERRY, Chase Brass & Copper Co., Inc., 260 Grand Street, Waterbury 20, Conn. (Chairman).

WYLIE BROWN, Phelps Dodge Copper Products Corp., 40 Wall Street, New York 5, N. Y.

H. Y. BASSETT, Wolverine Tube Division, Calumet & Hecla Consolidated Copper Co., Inc., 1411 Central Avenue, Detroit 9, Mich.

JACK DORMAN, Dorman Products Co., 1004 Sycamore Street, Cincinnati, Ohio.

M. NOTTON, Seaboard Sales Co., 263 Cambridge Street, Allston, Mass.

G. L. McCAIN, Chrysler Corp., 341 Massachusetts Avenue, Detroit 31, Mich.

A. L. TREITMAN, American Motor Specialties Co., 53 Lock Street, Newark 4, N. J.

FRANK G. STEWART, Standard Automotive Supply Co., 1835 Fourteenth Street NW., Washington 9, D. C.

ACCEPTANCE OF COMMERCIAL STANDARD

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,  
National Bureau of Standards,  
Washington 25, D. C.

Gentlemen:

We believe that the Commercial Standard 167-50 constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production <sup>1</sup>                    distribution <sup>1</sup>                    purchase <sup>1</sup>                    testing <sup>1</sup>  
of automotive and general service copper tube.

We reserve the right to depart from it 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.

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.....

<sup>1</sup> Underscore which one. 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 interests, 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 commercial 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 Nation-wide 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.



## ACCEPTORS

The organizations listed below have individually accepted this standard for use as far as practicable in the production, distribution, testing, or purchase of automotive and general service copper tube. In accepting the standard they reserved the right to depart from it as they individually deem advisable. It is expected that products which actually comply with the requirements of this standard in all respects will be regularly identified or labeled as conforming thereto, and that purchasers will require such specific evidence of conformity.

## ASSOCIATIONS

(General Support)

American Automobile Association, Washington, D. C.

## FIRMS AND OTHER INTERESTS

Amco Corp., Detroit, Mich.  
 American Motor Specialties Co., Newark, N. J.  
 Antrim Hardware Co., Camden, N. J.  
 Atchison, Topeka & Santa Fe Railway, Chicago, Ill.  
 Ballou & Wright, Portland, Oreg.  
 Barker, Rose & Kimball, Inc., Elmira, N. Y.  
 Beard & Stone Electric Co., Inc., Houston, Tex.  
 Bluefield Supply Co., Bluefield, W. Va.  
 Bowman Products Co., Cleveland, Ohio.  
 Bridgeport Brass Co., Bridgeport, Conn.  
 Canton Hardware Co., Canton, Ohio.  
 Central of Georgia Railway Co., Savannah, Ga.  
 Chase Brass & Copper Co., Inc., Waterbury, Conn.  
 Chrysler Corp., Engineering Division, Detroit, Mich.  
 Columbia Supply Co., Columbia, S. C.  
 Corbin Supply Co., Macon, Ga.  
 Crosley Division, Avco Manufacturing Corp., Cincinnati, Ohio.  
 Crump, B. T., Co., Inc., Richmond, Va.  
 Danville Auto Parts Co., Danville, Ill.  
 Darrow & Cornstock Co., Inc., New London, Conn.  
 Denver Gear & Parts Co., Denver, Colo.  
 Detroit, University of, Detroit, Mich.  
 Dorman Products, Inc., Cincinnati, Ohio.  
 Erie Concrete & Steel Supply Co., Erie, Pa.  
 Evansville Auto Parts, Inc., Evansville, Ind.  
 Evansville Supply Co., Evansville, Ind.  
 Farmer, C. W., Co., Macon, Ga.  
 Ford, Bob, Inc., Dearborn, Mich.  
 Foss, W. J., Co., Springfield, Mass.  
 Gabriel Sales Co., Inc., Cicero, Ill.  
 Garnich, E., & Sons Hardware Co., Ashland, Wis.  
 Gefro Supply, Inc., West New York, N. J.  
 Globe Machinery & Supply Co., Des Moines, Iowa.  
 Good Supply & Equipment Co., Akron, Ohio.  
 Grand Forks Supply Corp., Grand Forks, N. Dak.  
 Grand Homan Auto Parts Co., Chicago, Ill.  
 Handy, N. B., Co., Lynchburg, Va.  
 Heller, J., & Sons, Newark, N. J.  
 Howard Supply Co., Urbana, Ohio.  
 Hubbard, S. B., Co., Jacksonville, Fla.  
 Hudson-Tucker, Inc., San Diego, Calif.  
 Industrial Equipment Co., Louisville, Ky.  
 Janney Semple Hill & Co., Minneapolis, Minn.  
 Kauffman Manufacturing & Supply Co., Hagerstown, Md.  
 Kester Machinery Co., Winston-Salem, N. C.  
 Kinscy, H. P., Co., Easton, Pa.  
 Kries, Henry A., & Sons Co., Baltimore, Md.  
 Kugel Bros., Philadelphia, Pa.  
 Laffan, Frank E., Co., Rochester, N. Y.  
 Lane, Harry, Supply Co., Inc., McPherson, Kans.  
 Larson Hardware Co., Sioux Falls, S. Dak.  
 Lewin-Mathes Co., St. Louis, Mo.  
 Lindrme Tube Co., Cleveland, Ohio.  
 Lowell Iron & Steel Co., Lowell, Mass.  
 Lubbock Hardware & Supply Co., Lubbock, Tex.  
 Luzerne & Lackawanna Supply Co., Wilkes-Barre, Pa.  
 MacKenzie Auto Equipment, Inc., Pocatello, Idaho.  
 Marine Specialty & Mill Supply Co., Inc., New Orleans, La.  
 Marsden & Wasserman, Inc., Hartford, Conn.

Marshall Newell Supply Co., San Francisco, Calif.  
 Marwedel, C. W., San Francisco, Calif.  
 McDonald Auto Supply Co., Amarillo, Tex.  
 McGowin-Lyons Hardware & Supply Co., Mobile, Ala.  
 Messer, L. J., Co., Lincoln, Nebr.  
 Miller Bros. Hardware Co., Richmond, Ind.  
 Monmouth Products Division, Cleveland Graphite Bronze Co., Cleveland, Ohio.  
 Morley Bros., Saginaw, Mich.  
 Motor Grinding & Parts Co., Milwaukee, Wis.  
 Motor Parts & Supply Co., Inc., Mobile, Ala.  
 Motor Supply Co., Inc., Monroe, La.  
 Mueller Brass Co., Port Huron, Mich.  
 Muskegon Reliable Tire & Accessories Co., Muskegon, Mich.  
 Nicols, Dean & Gregg, St. Paul, Minn.  
 Northern Hardware & Supply Co., Menominee, Mich.  
 Northern Supply Co., Bay City, Mich.  
 Ohio Auto Supply Co., Cleveland, Ohio.  
 Patterson Bros., New York, N. Y.  
 Penn Brass & Copper Co., Erie, Pa.  
 Pesco Products Division, Borg-Warner Corp., Cleveland, Ohio.  
 Pidgeon-Thomas Iron Co., Memphis, Tenn.  
 Pittsburgh Auto Equipment Co., Pittsburgh, Pa.  
 Reading Tube Corp., Reading, Pa.  
 Reverse Copper & Brass, Inc., New York, N. Y.  
 Ridge Co., South Bend, Ind.  
 Rutland Auto Supply Co., Rutland, Vt.  
 San Antonio Machine & Supply Co., San Antonio, Tex.  
 Sangamo Auto Supply Co., Decatur, Ill.  
 Schwabacher Hardware Co., Seattle, Wash.  
 Scovill Manufacturing Co., Waterbury, Conn.  
 Sears, Roebuck & Co., Chicago, Ill.  
 Severin Supply Co., Oklahoma City, Okla.  
 Sheaffer Bros., Carlisle, Pa.  
 Shriber-Slates Co., Akron, Ohio.  
 Sipe Auto Parts Co., Somerset, Pa.  
 Southern Pacific Co., San Francisco, Calif.  
 Standard Automotive Supply Co., Washington, D. C.  
 Standard Brass & Manufacturing Co., Houston, Tex.  
 Stangel, J. J., Hardware Co., Manitowoc, Wis.  
 Stauss & Haas, Inc., New Orleans, La.  
 Stevens Institute of Technology, Hoboken, N. J.  
 Stritt & Priebe, Inc., Buffalo, N. Y.  
 Templeton, Charles A., Inc., Waterbury, Conn.  
 Tennessee Mill & Mine Supply Co., Knoxville, Tenn.  
 Tull, J. M., Metal & Supply Co., Inc., Atlanta, Ga.  
 United Hardware & Supply Co., Titusville, Pa.  
 U. S. Testing Co., Inc., Hoboken, N. J.  
 Van Horn, Oliver H., Co., Inc. of Fort Worth, Fort Worth, Tex.  
 Waite Auto Supply Co., Providence, R. I.  
 Washer Truck Parts Co., Chicago, Ill.  
 Washington Machinery & Supply Co., Spokane, Wash.  
 Washington, University of, Seattle, Wash.  
 Wells, A. H., & Co., Inc., Waterbury, Conn.  
 Whipples Automotive Equipment, Inc., Binghamton, N. Y.  
 Wolverine Tube Division, Calumet & Hecla Consolidated Copper Co., Detroit, Mich.  
 Woodbury & Co., Portland, Oreg.

## UNITED STATES GOVERNMENT

Department of the Army, Standards Branch, Logistics Division, Washington, D. C.

## COMMERCIAL STANDARDS

CS No.	Item	CS No.	Item
0-40.	Commercial standards and their value to business (third edition).	57-40.	Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings (second edition).
1-42.	Clinical thermometers (third edition).	58-36.	Woven elastic fabrics for use in overalls (overall elastic webbing).
2-30.	Mopsticks.	59-44.	Textiles—testing and reporting (fourth edition).
3-40.	Stoddard solvent (third edition).	60-48.	Hardwood dimension lumber (second edition).
4-29.	Staple porcelain (all-clay) plumbing fixtures.	61-37.	Wood-slat venetian blinds.
5-46.	Pipe nipples; brass, copper, steel, and wrought-iron (second edition).	62-38.	Colors for kitchen accessories.
6-31.	Wrought-iron pipe nipples (second edition). Superseded by CS5-46.	63-38.	Colors for bathroom accessories.
7-29.	Standard weight malleable iron or steel screwed unions.	64-37.	Walnut veneers.
8-41.	Gage blanks (third edition).	65-43.	Methods of analysis and of reporting fiber composition of textile products (second edition).
9-33.	Builders' template hardware (second edition).	66-38.	Marking of articles made wholly or in part of platinum.
10-29.	Brass pipe nipples. Superseded by CS5-46.	67-38.	Marking articles made of karat gold.
11-41.	Moisture regains of cotton yarns (second edition).	68-38.	Liquid hypochlorite disinfectant, deodorant, and germicide.
12-48.	Fuel oils (sixth edition).	69-38.	Pine oil disinfectant.
13-44.	Dress patterns (fourth edition).	70-41.	Phenolic disinfectant (emulsifying type) (second edition) (published with CS-71-41).
14-43.	Boys' button-on waists, shirts, junior and sport shirts (made from woven fabrics) (third edition).	71-41.	Phenolic disinfectant (soluble type) (second edition) (published with CS70-41).
15-46.	Men's pajama sizes (made from woven fabrics) (third edition).	72-38.	Household insecticide (liquid spray type).
16-29.	Wall paper.	73-48.	Old growth Douglas fir, Sitka spruce, and Western hemlock standard stock doors (fourth edition).
17-47.	Diamond core drill fittings (fourth edition).	74-39.	Solid hardwood wall paneling.
18-29.	Hickory golf shafts.	75-42.	Automatic mechanical draft oil burners designed for domestic installations (second edition).
19-32.	Foundry patterns of wood (second edition).	76-39.	Hardwood interior trim and molding.
20-49.	Vitreous china plumbing fixtures (fifth edition).	77-48.	Enameled cast iron plumbing fixtures (second edition).
21-39.	Interchangeable ground-glass joints, stopcocks, and stoppers (fourth edition).	78-40.	Gound-and-polished lenses for sun glasses (second edition) (published with CS79-40).
22-40.	Builders' hardware (nontemplate) (second edition).	79-40.	Blown, drawn, and dropped lenses for sun glasses (second edition) (published with CS78-40).
23-30.	Feldspar.	80-41.	Electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor vehicle laws (after market).
24-43.	Screw threads and tap-drill sizes.	81-41.	Adverse-weather lamps for vehicles (after market).
25-30.	Special screw threads. Superseded by CS24-43.	82-41.	Inner-controlled spotlamps for vehicles (after market).
26-30.	Aromatic red cedar closet lining.	83-41.	Clearance, marker, and identification lamps for vehicles (after market).
27-36.	Mirrors (second edition).	84-41.	Electric tail lamps for vehicles (after market).
28-46.	Cotton fabric tents, tarpaulins, and covers (second edition).	85-41.	Electric license-plate lamps for vehicles (after market).
29-31.	Staple seats for water-closet bowls.	86-41.	Electric stop lamps for vehicles (after market).
30-31.	(Withdrawn.)	87-41.	Red electric warning lanterns.
31-38.	Wood shingles (fourth edition).	88-41.	Liquid burning flares.
32-31.	Cotton cloth for rubber and pyroxylin coating.	89-40.	Hardwood stair treads and risers.
33-43.	Knit underwear (exclusive of rayon) (second edition).	90-49.	Power cranes and shovels.
34-31.	Bag, case, and strap leather.	91-41.	Factory-fitted Douglas fir entrance doors.
35-49.	Hardwood plywood (fourth edition).	92-41.	Cedar, cypress, and redwood tank stock lumber.
36-33.	Fourdrinier wire cloth (second edition).	93-41.	Portable electric drills (exclusive of high frequency).
37-31.	Steel bone plates and screws.	94-41.	Calking lead.
38-32.	Hospital rubber sheeting.	95-41.	Lead pipe.
39-37.	(Withdrawn).	96-41.	Lead traps and bends.
40-32.	Surgeons' rubber gloves.	97-42.	Electric supplementary driving and passing lamps for vehicles (after market).
41-32.	Surgeons' latex gloves.	98-42.	Artists' oil paints.
42-49.	Structural fiber insulating board (fourth edition).	99-42.	Gas floor furnaces—gravity circulating type.
43-32.	Grading of sulphonated oils.	100-47.	Porcelain-enameled steel utensils (third edition).
44-32.	Apple wraps.	101-43.	Flue-connected oil-burning space heaters equipped with vaporizing pot-type burners.
45-48.	Douglas fir plywood (eighth edition).	102-	(Reserved for Diesel and fuel-oil engines.)
46-49.	Hosiery lengths and sizes (fourth edition).	103-48.	Rayon jacquard velour (with or without other decorative yarn) (second edition).
47-34.	Marking of gold-filled and rolled-gold-plate articles other than watch cases.		
48-40.	Domestic burners for Pennsylvania anthracite (underfeed type) (second edition).		
49-34.	Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.		
50-34.	Binders board for bookbinding and other purposes.		
51-35.	Marking articles made of silver in combination with gold.		
52-35.	Mohair pile fabrics (100-percent mohair plain velvet, 100-percent mohair plain frieze, and 50-percent mohair plain frieze).		
53-35.	Colors and finishes for cast stone.		
54-35.	Mattresses for hospitals.		
55-35.	Mattresses for institutions.		
56-49.	Oak flooring (third edition).		

CS No.	Item	CS No.	Item
104-49.	Warm-air furnaces equipped with vaporizing type oil burners (third edition).	137-46.	Size measurements for men's and boys' shorts (woven fabrics).
105-48.	Mineral wool insulation for low temperatures (second edition).	138-49.	Insect wire screening (second edition).
106-44.	Boys' pajama sizes (woven fabrics) (second edition).	139-47.	Work gloves.
107-45.	(Withdrawn.)	140-47.	Testing and rating convectors.
108-43.	Treading automobile and truck tires.	141-47.	Sine bars, blocks, plates, and fixtures
109-44.	Solid-fuel-burning forced-air furnaces.	142-47.	Automotive lifts.
110-43.	Tire repairs—vulcanized (passenger, truck, and bus tires).	143-47.	Standard strength and extra strength perforated clay pipe.
111-43.	Earthenware (vitreous-glazed) plumbing fixtures.	144-47.	Formed metal porcelain enameled sanitary ware.
112-43.	Homogeneous fiber wallboard.	145-47.	Testing and rating hand-fired hot-water-supply boilers.
113-44.	Oil-burning floor furnaces equipped with vaporizing pot-type burners.	146-47.	Gowns for hospital patients.
114-43.	Hospital sheeting for mattress protection.	147-47.	Colors for molded urea plastics.
115-44.	Porcelain-enameled tanks for domestic use.	148-48.	Men's circular flat and rib knit rayon underwear.
116-44.	Bituminized-fibre drain and sewer pipe.	149-48.	Utility type house dress sizes.
117-49.	Mineral wool insulation for heated industrial equipment (second edition).	150-48.	Hot-rolled rail steel bars (produced from tee-section rails).
118-44.	Marking of jewelry and novelties of silver.	151-48.	Body measurements for the sizing of apparel for infants, babies, toddlers, and children (for the knit underwear industry).
(E)119-45. <sup>1</sup>	Dial indicators (for linear measurements).	152-48.	Copper naphthenate wood-preservative.
120-48.	Standard stock ponderosa pine doors (third edition).	153-48.	Body measurements for the sizing of apparel for girls (for the knit underwear industry).
121-45.	Women's slip sizes (woven fabrics).	154-	(Reserved for wire rope).
122-49.	Western softwood plywood (second edition).	155-50.	Body measurements for the sizing of boys' apparel (knit underwear, shirts, trousers).
123-49.	Grading of diamond powder (second edition).	156-49.	Colors for polystyrene plastics.
(E)124-45. <sup>1</sup>	Master disks.	157-49.	Ponderosa pine and sugar pine plywood.
125-47.	Prefabricated homes (second edition).	158-49.	Model forms for girls' apparel.
126-45.	Tank-mounted air compressors.	159-49.	Sun-glass lenses made of ground and polished plate glass, thereafter thermally curved.
127-45.	Self-contained mechanically refrigerated drinking water coolers.	160-49.	Wood-fiber blanket insulation (for building construction).
128-49.	Men's sport shirt sizes—woven fabrics (other than those marked with regular neckband sizes) (second edition).	161-49.	"Standard grade" hot-dipped galvanized ware.
129-47.	Materials for safety wearing apparel (second edition).	162-49.	Tufted bedspreads.
130-46.	Color materials for art education in schools.	163-49.	Standard stock ponderosa pine windows, sash, and screens.
131-46.	Industrial mineral wool products, all types—testing and reporting.	164-	(Reserved for concrete mixers.)
132-46.	Hardware cloth.	165-50.	Zinc naphthenate wood-preservative (spray brush, dip application).
133-46.	Woven wire netting.	166-50.	Size measurements for men's work trousers.
134-46.	Cast aluminum cooking utensils (metal composition).	167-50.	Automotive and general service copper tube.
135-46.	Men's shirt sizes (exclusive of work shirts).		
136-46.	Blankets for hospitals (wool, and wool and cotton).		

<sup>1</sup> Where "(E)" precedes the CS number, it indicates an emergency commercial standard, drafted under war conditions with a view toward early revision.

NOTICE.—Those interested in commercial standards with a view toward accepting them as a basis of everyday practice may secure copies of the above standards, while the supply lasts, by addressing the Commodity Standards Division, National Bureau of Standards, Washington 25, D. C.

