HARDWARE CLOTH

COMMERCIAL STANDARD CS132-46

Effective Date for New Production From April 15, 1946

A RECORDED VOLUNTARY STANDARD
OF THE TRADE

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1946

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PROMULGATION
of
COMMERCIAL STANDARD CS132-46
for
HARDWARE CLOTH

On June 27, 1945, at the instance of the Hardware Cloth and Poultry Netting Institute, a meeting of producers of hardware cloth adopted the proposed commercial standard for this commodity. This was submitted on August 21, 1945, to leading manufacturers, interested Government agencies, and distributor and user organizations for constructive comment. Following adjustment in the light of the comment received, the recommended commercial standard was circulated for written acceptance on January 23, 1946.

Those concerned have since accepted and approved the standard as shown herein for promulgation by the United States Department of Commerce, through the National Bureau of Standards.

The standard is effective for new production from April 15, 1946.

Promulgation recommended.

Promulgated.

Promulgation approved.

F. W. Reynolds,
Acting Chief, Division of Trade Standards.

E. U. Condon,
Director, National Bureau of Standards.

Henry A. Wallace,
Secretary of Commerce.
HARDWARE CLOTH

COMMERCIAL STANDARD CS132-46

PURPOSE

1. The purpose of this commercial standard is to provide a nationally recognized minimum standard of quality for hardware cloth. It will assist ultimate consumers in determining what sizes of hardware cloth are standard and are regularly produced in sufficient volume to assure reasonably any standard size being readily obtainable in most retail hardware stores and other channels of retail and wholesale trade.

SCOPE

2. This standard covers materials, workmanship, and dimensional requirements for commercial standard hardware cloth, customarily used for window guards, screen door guards, tree guards, ratproofing, grain bins, industrial machinery guards and numberless other home, farm, and industrial purposes. A recommended form for guaranteeing compliance with this standard is included.

DEFINITIONS

3. Hardware cloth.—2×2, 3×3, 4×4, 8×8 mesh (size or count); carbon steel, wire mesh; galvanized (zinc-coated) by the hot-dip process after it is woven.


4a. Mesh is the width of one opening plus the thickness of one wire after it is galvanized; alternatively considered as being the distance from the center of one wire to the center of the next parallel wire. Thus the measurement of the “mesh” in 2×2 standard hardware cloth is ½ inch; in 3×3, ⅜ inch; 4×4, ⅝ inch; 8×8, ⅝ inch.

4b. The technical designation of “mesh” (count) is the number of meshes per linear inch in the direction of either the warp or filler wires. Thus 2×2 “mesh” means that the woven material has two (2) meshes per linear inch, 3×3 “mesh” has three (3) meshes, 4×4 “mesh” has four (4) meshes, and 8×8 “mesh” has eight (8) meshes per linear inch.

4c. When used as a common designation of the “size” of standard hardware cloth the word “mesh” is generically accepted as meaning the number of openings per linear inch.

MATERIALS AND WORKMANSHIP

5. All standard hardware cloth shall be made of high-grade materials and with good workmanship. It shall be free from any defects that might affect its serviceability. Well-made splices not more
than three-fourths of an inch long and showing no projecting ends (tails) are permissible at any point of any individual wire, provided, however, that the number of splices shall not exceed thirty (30) in any stock roll nor two (2) in any single square foot of finished standard hardware cloth. The metal used for the coating shall be zinc of at least 98 percent purity.

**DETAIL REQUIREMENTS**

6. The mesh counts, wire sizes, and weights for standard hardware cloth are as follows:

<table>
<thead>
<tr>
<th>Metal</th>
<th>Mesh</th>
<th>Diameter of wire (after galvanizing)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon steel</td>
<td>2x2</td>
<td>0.0410</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>3x3</td>
<td>0.0317</td>
<td>28</td>
</tr>
<tr>
<td>Do.</td>
<td>4x4</td>
<td>0.0258</td>
<td>27</td>
</tr>
<tr>
<td>Do.</td>
<td>8x8</td>
<td>0.0173</td>
<td>24</td>
</tr>
</tbody>
</table>

**WIDTHS**

7. Stock widths of all standard sizes of hardware cloth are 24, 30, 36, and 48 inches.

**ROLL LENGTH**

8. All standard stock rolls of hardware cloth shall be 100 linear feet in length. No standard stock roll shall contain more than two pieces, and no single piece shall be less than 10 linear feet in length.

**MESH SIZE OR COUNT**

9. The mesh size of standard hardware cloth shall be determined by counting the meshes for any interval of one continuous linear foot, in the direction of either the warp or filler wires and dividing the result thus obtained by twelve (12).

**WIRE DIAMETER**

10. All wire diameter designations in this commercial standard for hardware cloth are the finished sizes after galvanizing. Accuracy of the wire size in standard hardware cloth shall be determined by computing separately the average measured diameter of not less than ten (10) warp wires and of the same number of filler wires, taken at random from the finished, galvanized-after-woven, hardware cloth in any single standard roll.

**SELVAGES**

11. All standard widths of hardware cloth shall have two selvage edges.
12. Permissible variations in the measurements of standard hardware cloth shall be:
   (a) Wire diameter, after galvanizing: minus 0.0015 inch for 2 × 2 and 3 × 3 mesh; minus 0.001 inch for 4 × 4 and 8 × 8 mesh.\(^1\)
   (b) Mesh count:
      Warp, \(\frac{1}{2}\) mesh per linear foot plus or minus.
      Filler, \(\frac{1}{2}\) mesh per linear foot plus or minus.
   (c) Width: \(\frac{1}{4}\) inch, plus or minus.
   (d) Roll length: minus 4 inches.\(^1\)
   (e) Weight: 10 percent plus or minus.

13. The mesh, wire size, width, and length of standard hardware cloth in each individual roll shall be clearly shown by means of a tag or printed label attached to the roll in a conspicuous place.

14. In order to assure the purchaser that he is receiving hardware cloth which complies with the requirements of this standard, it is recommended that the tag or label on each roll carry the following guarantee:

   We hereby guarantee that this Hardware Cloth complies with all requirements of Commercial Standard CS132-46, as issued by the National Bureau of Standards of the United States Department of Commerce.

   (Signed)

15. The standard is effective for new production from April 15, 1946.

16. The following individuals comprise the membership of the standing committee, as appointed by the National Bureau of Standards. This committee is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Each organization nominated its own representative. Comment concerning the standard and suggestions for revision may be addressed to any member of the committee or to the Division of Trade Standards, National Bureau of Standards, which acts as secretary for the committee.

   **John D. Stodder**, Cyclone Fence Division, American Steel & Wire Co., Waukegan, Ill.
   **L. B. Jackson**, Wickwire Brothers, Inc., 189 Main Street, Cortland, N. Y.

\(^1\) No limitation specified for oversize wire diameter and overlength roll.
Ralph W. Bacon, Hardware Cloth and Poultry Netting Institute, 74 Trinity Place, New York 6, N. Y.
Thomas A. Fernley, Jr., The National Wholesale Hardware Association, 505 Arch Street, Philadelphia 6, Pa.
Irving Bailey, American Retail Federation, 1627 K Street, Washington, D. C.
T. W. McAllister, Southern Hardware Jobbers Association, 814 Metcalf Building, Orlando, Fla.
Rivers Peterson, National Retail Hardware Association, 333 North Pennsylvania Street, Indianapolis 4, Ind.

HISTORY OF PROJECT

17. On September 26, 1944, the Hardware Cloth and Poultry Netting Institute requested the cooperation of the National Bureau of Standards in the establishment of a commercial standard for hardware cloth. A preliminary draft of the proposed commercial standard was submitted to manufacturers for their review and comment. All comment was carefully considered at a meeting held in New York City on June 27, 1945. An adjusted draft was then prepared and submitted on August 21, 1945, to technical organizations, Government agencies, testing laboratories, manufacturers, and wholesale, retail, and user organizations for further review and comment. The standard was then modified in accordance with composite recommendations of those concerned and circulated on January 23, 1946, to the trade for written acceptance.

18. Upon receipt of official acceptances estimated to represent a satisfactory majority of the production by volume and in the absence of active valid opposition, the standard was promulgated on March 15, 1946, as Commercial Standard CS132-46.
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

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

Gentlemen:
We believe that the Commercial Standard CS132-46 constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the
Production ¹ Distribution ¹ Purchase ¹ Testing ¹ of hardware cloth.

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 ........................................

¹ 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 signatures 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 the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.
ACCEP'TORS

19. The organizations listed below have individually accepted these specifications for use as far as practicable in the production, distribution, testing or purchase of hardware cloth. In accepting the standard they reserved the right to depart therefrom as they individually deem advisable. It is expected that articles 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)

Boy Scouts of America, New York, N. Y.
Hardware Cloth & Poultry Netting Institute, New York, N. Y.
National Pest Control Association, Inc., Brooklyn, N. Y.
National Progressive Color Phase Association, Madison, Wis.
Wisconsin Mink Breeders Association, Burlington, Wis.
Z. C. M. L. Wholesale Hardware Division, Salt Lake City, Utah.

FIRMS

Abraham & Strauss, Inc., Brooklyn, N. Y.
Academy Hardware & Supply Co., Inc., New York, N. Y.
Ace Hardware Corporation, Chicago, Ill.
Agnew Hardware Co., Everett, Wash.
Alabama State of, Montgomery, Ala.
Albany Hardware & Iron Co., Albany, N. Y.
Allen Co., Inc., Walter Hill, Dallas, Tex.
Allen & Jemison Co., Tuscaloosa, Ala.
Allison-Erwin Co., Charlotte, N. C.
Amarillo Hardware Co., Amarillo, Tex.
American Wholesale Hardware Co., Long Beach, Calif.
Anderson & Ireland Co., The, Baltimore, Md.
Anniston Hardware Co., Anniston, Ala.
Arizona Hardware Co., Phoenix, Ariz.
Austin Bros., Stockton, Calif.
Badger Paint & Hardware Stores, Inc., Milwaukee, Wis.
Baie Hardware Co., Gainesville, Fla.
Baltimore, City of, Bureau of Plans & Surveys, Baltimore, Md.
Bard Hardware Co., Reading, Pa.
Barker, Rose & Kimball, Inc., Elmira, N. Y.
Barr Lumber Co., Santa Ana, Calif.
Barrett Hardware Co., Joliet, Ill.
Bay Cities Wholesale Hardware Co., San Francisco, Calif.
Bayoue Steel Products Co., Paterson, N. J.
Beck & Gregg Hardware Co., Atlanta, Ga.
Benson Lumber Co., Pawhuska, Okla.
Bering-Cortes Hardware Co., Houston, Tex.
Biggs-Kurtz Hardware Co., The, Grand Junction, Colo.
Billiard Hardware Co., Billings, Mont.
Birmingham, City of, Birmingham, Ala.
Black Hardware Co., Galveston, Tex.
Blish, Mize & Silliman Hardware Co., Atchison, Kan.
Bloch Hardware Co., New York, N. Y.
Blumberg Co., Inc., Wm. L., New York, N. Y.
Bobby Hardware Corporation, New York, N. Y.
Bosman & Casson, Inc., Harrison, N. J.
Bostwick-Braun Co., The, Toledo, Ohio.
Brown-Camp Hardware Co., Des Moines, Iowa.
Buck & Sons, Peter E., Ashland, Pa.
Budge Co., Frank T., Miami, Fla.
Buell Lumber & Manufacturing Co., Dallas, Texas.
Buffalo, City of, Division of Buildings, Department of Public Works, Buffalo, N. Y.
Buhl Sons Co., Inc., Anchorage, Alaska.
Buhrrmann-Pharr Hardware Co., Texarkana, Ark.
Builders Supply Co., San Antonio, Texas.
Building Service, Inc., Great Falls, Mont.
Burling & Black, Inc., Syracuse, N. Y.
Butler Brothers, Chicago, Ill.
Cameron & Co., Inc., Wm., Waco, Tex.
Cameron Lumber Co., Inc., Newburgh, N. Y.
Canton Hardware Co., The, Canton, Ohio.
Canton Lumber Co., Inc., The, Canton, Kans.
Carpenter Hardware Co., The, Athens, Ohio.
Ceco Steel Products Corporation, Peoria, Ill.
Centre Hardware Co., Roslindale, Mass.
Charleston Hardware Co., Charleston, W. Va.
Clark Wibbeck Co., Schenectady, N. Y.
Cloverdale Hardware & Lumber Co., Cloverdale, Ind.
Cole Manufacturing Co., Memphis, Tenn.
Colladay Hardware Co., The, Frank, Hutchinson, Kans.
Collins & Son, Inc., J. S., Moorestown, N. J.
Combs Lumber Co., Lexington, Ky.
Conde Hardware Co., W. W., Watertown, N. Y.
Connecticut Hardware Supply Co., Inc., Branford, Conn.
Coop. G. L. F. Farm Supplies, Inc., Ithaca, N. Y.
Corpus Christy Hardware Co., Corpus Christi, Tex.
Cove Grove Wire Cloth Co., Inc., Belleville, N. J. (General support)
Curtis Co., Inc., Wausau Division, Wausau, Wis.
Cyclone Fence Division (American Steel & Wire Co.), Waukegan, Ill.
Darol Co., Inc., Dayton, Ohio.
Delaware Hardware Co., Wilmington, Del.
Delta Hardware Co., Escanaba, Mich.
Diamond Lumber & Hardware Co., Lovell, Wyo.
Dinkins-Davidson Hardware Co., Atlanta, Ga.
Duer & Sons, Inc., John, Baltimore, Md.
Dunlap & Co., Inc., Columbus, Ind.
DuQuoin Home Lumber Co., DuQuoin, Ill.
Duval Hardware Co., Anchorage, Mont.
Emery-Waterhouse Co., The, Portland, Maine.
Emmons Hawkins Hardware Co., Huntington, W. Va.
Erk Hardware Co., Ltd., Lewiston, Idaho.
Farley & Loetscher Manufacturing Co., Dubuque, Iowa.
Farwell Ozmun Kirk & Co., St. Paul, Minn.
Federal Hardware Co., Inc., New York, N. Y.
Fesharick & Co., St. Louis, Mo.
Fitchburg Hardware Co., Fitchburg, Mass.
Fones Bros. Hardware Co., Little Rock, Ark.
Fotorof Hardware Co., Washington, D. C.
Fotz Hardware Co., Youngstown, O.
Frank & Co., Inc., C. D., Charleston, S. C.
Frankfurth Hardware Co., Milwaukee, Wis.
Franklin Hardware Co., New York, N. Y.
Fries, Beall & Sharp Co., Washington, D. C.
Gabry Inc., Harrisburg, Pa.
Gennaro's Supply Co., Dallas, Texas
Garden County Lumber Co., Oshkosh, Nebr.
Gillespie, Inc., Jersey, N. J.
Gates Hardware & Supply Co., Tulsa, Okla.
Gelfond Screen & Weatherstrip Co., Newark, N. J.
General Millwork Manufacturing, Utica, N. Y.
Gilbert & Bennett Manufacturing Co., The, Georgetown, Conn.
Gilbert & Spencers, Denver, Colo.
Goldenblum & Co., William, New York, N. Y.
Graves-Humphreys Hardware Co., Ronan, Mont.
Haldeman Hardware Co., Minneapolis, Minn.
Harco Hardware Co., Cleveland, Ohio.
Harper & McIntire Co., Cedar Rapids, Iowa.
Harris Hardware Corporation, Dayton, Calif.
Harris Hardware Co., Washington, N. C.
Hartford Wire Works Co., The, Hartford, Conn.
Hatch Lumber & Hardware Co., Des Moines, Iowa.
Hauser Lumber Co., Fairfax, Minn., Gibbon, Minn., and Sleepy Eye, Minn.
Hayes Sammons Hardware Co., Mission, Tex.
Eidelg Brothers Co., York, Pa.
Helgeland & W., Houston, Tex.
Helena Hardware Co., Helena, Mont.
Hendrie & Bolloth Manufacturing & Supply Co., Denver, Colo.
Hinkle & Joyce Hardware Co., Lincoln, Nebr.
Herbert Hearn Hardware Co., Cambridge, Md.
Herzon Supply Co., Kingston, N. Y.
Hibbard, Spencer, Bartlett & Co., Chicago, Ill.
Higginbotham Bros. & Co., Comanche, Tex.
Higginbotham-Pearlstone Hardware Co., Dallas, Tex.
Hill-Behan Lumber Co., St. Louis, Mo.
Hillerud Hardware, Sank Centre, Minn.
Hodges Brothers, Olatah, Kans.
Hodgson Hardware Co., Pueblo, Colo.
Holter Hardware Co., A. M., Helena, Mont.
Hopkins & Co., New York, N. Y.
Hubbard Co., The S. H., Jacksonville, Fla.
Huey & Philip Hardware Co., Dallas, Texas.
Hunt & Moffet Co., Tacoma, Wash.
Huske Hardware House, Inc., Fayetteville, N. C.
Ideal Screen & Manufacturing Co., Los Angeles, Calif.
Igoe Brothers, Inc., Newark, N. J.
Illek Co., Charles, Las Vegas, N. Mex.
Imperial Hardware Co., El Centro, Calif.
Industrial Wire Cloth Co., New York, N. Y.
Interstate Sash & Door Co., The, Canton, Ohio.
Jackson-James Lumber Co., Dyersburg, Tenn.
Janney Sample Hill & Co., Minneapolis, Minn.
Jenney Hardware Co., Jellico, Tenn.
Jelliff Manufacturing Corporation, the C. O., Southport, Conn.
Jennings Hardware Co., The, Bay City, Mich.
Johnson & Co., Langdale, Ala.
Johnson Metal Products Co., Erie, Pa.
Johnson & Co., The A. Chicago, III.
Kaminski Hardware Co., Georgetown, S. C.
Kane Manufacturing Corporation, Kane, Pa.
Keith, Simmons Co., Inc., Nashville, Tenn.
Kelley How Thomson Co., Duluth, Minn.
Kennedy & Co., Inc., Bell, N. Mex.
Kentucky Metal Products Co., Louisville, Ky.
King Hardware Co., Youngstown, O.
King Lumber Co., The Bakersfield, Calif.
Kleinhardt Hardware Co., New York, N. Y.
Knapp & Spencer Co., Sioux City, Iowa.
Knights Hardware & Tampico Co., Chicago, Ill.
Kretschmann-Tredway Co., Dubuque, Iowa.
Kruge Hardware Co., The, Philadelphia, Ohio.
Kwieleckis Sons, I., Bainbridge, Ga.
Lake Erie Hardware Co., The, Cleveland, Ohio.
Lake furniture Co., the, Easton, Ohio.
Larson Hardware Co., Sioux Falls, S. Dak.
Lato Products Co., Texarkana, Tex.
Lawrence Lumber Co., Inc., The, Wichita, Kans.
Lefler-Bouche, Rochester, Ks.
Lee Hardware Co., Ltd., The, Shreveport, La.
Levy Bros., Burlingame, Calif.
Liellen Hardware & Supply Corporation, Long Island City, N. Y.
Lingo Leeper Co., The, Denison, Tex.
Linkway Stores Co., Little Rock, Ark.
Loeb Hardware Co., The, Cincinnati, Ohio.
Logan Hardware & Supply Co., Logan, W. Va.
Locke Hardware & Electric Co., Inc., New York, N. Y.
Loutcks Hardware Co., The, Scottsdale, Pa.
Lowe Co., Geo. A., Ogden, Utah.
Ludwig Furniture Co., Inc., The, Easton, Ohio.
Lyon-Gray Lumber Co., Dallas, Tex.
Madison Hardware Co., Madison, Wis.
Marion Hardware & Supply Co., Inc., Marion, Va.
Marison Inc., A. H., Franklin, N. Y.
Marshall-Wells Co., Duluth, Minn., Portland, Ore.
Oreg., and Spokane, Wash.
Mashack, Inc., (Formerly Mashack Hardware Co., Inc.), New York, N. Y.
Mathis-Boche Hardware Co., Natchitoches, La.
Maxwell Wholesale Hardware Co., Oakland, Calif.
May Hardware Co., Washington, D. C.
McChung & Co., Inc., C. M., Knoxville, Tenn.
McDow-Lyon's Hardware & Supply Co., Mobile, Ala.
McGregor Hardware Co., Springfield, Mo.
McKee, R., Hagerstown, Md.
Meldon Hardware Co., The, Meridian, Miss.
Mesker Bros. Iron Co., St. Louis, Mo.
Metlock Manufacturing Co., Fred L., Hamilton, Ohio.
Midstate Hardware Co., Bend, Oreg.
Miller Bros. Hardware Co., Richmond, Ind.
Miller's Wholesale Hardware, Cortland, N. Y.
Montana Hardware Co., Butte, Mont.
Montana Lumber & Hardware Co., Lewistown, Mont.
Montgomery & Crawford, Inc., Spartanburg, S. C.
Morehouse & Wells Co., Decatur, Ill.
Morley Brothers, Saginaw, Mich.
Morrow-Murphy Co., Green Bay, Wis.
Morris Hardware & Paint Co., New York, N.Y.
Morro-Thompson Hardware Co., Amarillo, Tex.
Morse Hardware Co., Bellingham, Wash.
Myers & Co., Inc., M. P., Pittsburg, N. Y.
Nagell Stores, Inc., Minneapolis, Minn.
National Screen Co., Inc., Suffern, N. Y.
Neil Co., Thos. G., Paterson, N. J. (General support.)

Netcher's Boston Store, Chicago, Ill.
New Drumright Hardware & Plumbing Supply Co., Manchester, N. H.
Newark Wire Cloth Co., Newark, N. J.
Newberry's Hardware Co., Alliance, Nebr.
Wickwire Spencer Steel Division, The Colorado Fuel & Iron Corporation, New York, N. Y.
Wilcox & Haslup, Baltimore, Md.
Williams & Hunting Co., Cedar Rapids, Iowa.
Williams & Son, Geo. A., New York, N. Y.
Williamson & Co., Inc., Ben, Ashland, Ky.
Wilson & Pugh Co., Cumberland, Md.
Wimberly & Thomas Hardware Co., Inc., Birmingham, Ala.
Winer's Hardware Stores, Inc., Quincy, Mass.
Wolf & Dessauer Co., Fort Wayne, Ind.
Woodruff Hardware Co., W. W., Knoxville, Tenn.
Worthington Co., Geo., Cleveland, Ohio.

Wright & Wilhelm Co., Omaha, Nebr.
Wyatt & Sons Co., Job P., Raleigh, N. C.
Zaentz & Sons, S., Passaic, N. J.
Zero Weather Stripping Co., Inc., New York, N. Y.
Zork Hardware Co., El Paso, Tex.

U. S. GOVERNMENT
Agriculture, U. S. Department of, Washington, D. C.
Federal Works Agency, Public Buildings Administration, Washington, D. C. (General support.)
Justice, U. S. Department of, Bureau of Prisons, Construction Division, Washington, D. C.
National Housing Agency, Washington, D. C. (General support.) War Department, Washington, D. C.
### COMMERCIAL STANDARDS

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<thead>
<tr>
<th>CS No.</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-30.</td>
<td>Mogulels.</td>
</tr>
<tr>
<td>4-29.</td>
<td>Staple porcelain (all-clay) plumbing fixtures.</td>
</tr>
<tr>
<td>5-46.</td>
<td>Pipe nipples; brass, copper, steel and wrought-iron (second edition).</td>
</tr>
<tr>
<td>7-29.</td>
<td>Standard weight malleable iron or steel screwed unions.</td>
</tr>
<tr>
<td>(E)</td>
<td>15-43.1 Men's pajamas (made from woven fabrics) (second edition).</td>
</tr>
<tr>
<td>16-29.</td>
<td>Wall paper.</td>
</tr>
<tr>
<td>19-29.</td>
<td>Hickory golf shafts.</td>
</tr>
<tr>
<td>22-30.</td>
<td>Felt damper.</td>
</tr>
<tr>
<td>24-43.</td>
<td>Screw threads and tap-drill sizes.</td>
</tr>
<tr>
<td>26-30.</td>
<td>Aromatic red cedar cloth lining.</td>
</tr>
<tr>
<td>31-32.</td>
<td>Cotton cloth for rubber and pyroxylm coating.</td>
</tr>
<tr>
<td>37-31.</td>
<td>Steel bone plates and screws.</td>
</tr>
<tr>
<td>38-32.</td>
<td>Hospital rubber sheeting.</td>
</tr>
<tr>
<td>39-37.</td>
<td>Wool and part wool blankets (second edition). (Withdrawn as commercial standard, July 14, 1941.)</td>
</tr>
<tr>
<td>40-32.</td>
<td>Surgeons' rubber gloves.</td>
</tr>
<tr>
<td>41-32.</td>
<td>Surgeons' semigloves.</td>
</tr>
<tr>
<td>44-32.</td>
<td>Apple wraps.</td>
</tr>
<tr>
<td>47-34.</td>
<td>Marking of gold-dipped-gold-plate articles other than watchcases.</td>
</tr>
</tbody>
</table>

1 Where (E) precedes the CS number, it indicates an emergency commercial standard, drafted under war conditions with a view toward early revision.
CS No.   Item
84-41. Electric tail lamps for vehicles (after market).
85-41. Electric license-plate lamps for vehicles (after market).
86-41. Electric stop lamps for vehicles (after market).
87-41. Red electric warning lanterns.
88-41. Liquid-burning flares.
89-40. Hardwood stair treads and risers.
90- (Reserved for power shovels and cranes).
91-41. Factory-fitted Douglas fir entrance doors.
92-41. Cedar, cypress and redwood tank stock lumber.
93-41. Portable electric drills (exclusive of high frequency).
94-41. Calking lead.
95-41. Lead pipe.
96-41. Lead traps and bends.
97-42. Electric supplementary driving and passing lamps for vehicles (after market).
98-42. Artists’ oil paints.
99-42. Gas floor furnaces—gravity circulating type.
100-44. Porcelain-enamed steel utensils (second edition).
101-43. Flue-connected oil-burning space heaters equipped with vaporizing pot-type burners.
102- . (Reserved for Diesel and fuel-oil engines).
103-42. Cotton and rayon velour (jacquard and plain).
104-46. Warm-air furnaces equipped with vaporizing pot-type oil burners (second edition).
105-43. Mineral wool; loose granulated, or felted form, in low-temperature installations.

CS No.  Item
108-43. Treading automobile and truck tires.
109-44. Solid-fuel-burning forced-air furnaces.
110-43. Tire repairs—vulcanized (passenger, truck, and bus tires).
111-43. Earthenware (vitreous-glazed) plumbing fixtures.
112-43. Homogeneous fiber wallboard.
113-44. Oil-burning floor furnaces equipped with vaporizing pot-type burners.
114-43. Hospital sheeting for mattress protection.
115-44. Porcelain-enamed tanks for domestic use.
116-44. Bituminized-fibre drain and sewer pipe.
117-44. Mineral wool; blankets, blocks, insulating cement, and pipe insulation for heated industrial equipment.
118-44. Marking of jewelry and novelties of silver.
119-45. Dial indicators (for linear measurements).
120-44. Standard stock ponderosa pine doors.
121-45. Women’s slip sizes (woven fabrics).
122-45. Western hemlock plywood.
123-45. Grading of diamond powder.
124-45. Master disks.
125-45. Prefabricated homes.
126-45. Tank mounted air compressors.
127-45. Self-contained mechanically refrigerated drinking water coolers.
128-45. Men’s sport shirt sizes—woven fabrics (other than those marked with regular neckband sizes).
129-46. Materials for safety wearing apparel.
130-46. Color materials for art education in schools.
131-46. Industrial mineral wool products, all types—testing and reporting.
132-46. Hardware cloth.
133-46. Woven wire netting.

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