

COMMERCIAL STANDARD CS161-59

Supersedes CS161-49

Standard Grade Hot-Dipped Galvanized Ware
(Coated After Fabrication)

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.

Standard Grade Hot-Dipped Galvanized Ware

(Coated After Fabrication)

[Effective January 31, 1960]

1. PURPOSE

1.1 The purpose of this Commercial Standard is to establish minimum requirements for standard grade hot-dipped galvanized ware, for the guidance of manufacturers, distributors and users; to promote a better understanding between suppliers and purchasers, and to provide for identifying ware that complies with the requirements given herein.

1.2 *Definition.*—The term “Standard Grade” is used in this standard to designate ware of the commercial grade intended for ordinary domestic use, as distinguished from “Heavy Grade” or “Extra Heavy Grade”.

2. SCOPE

2.1 This Commercial Standard describes the basis metal, coating, and certain features of construction, and gives nominal size or capacity and weight per dozen of the finished articles. Tests are also given for determining compliance with the provisions of the standard, and methods of labeling articles that comply are described.

3. REQUIREMENTS

3.1 *Sizes and weights.*—The sizes and minimum weight per dozen of the items covered shall be in accordance with table 1.

3.2 *Material of base.*—The basis metal of bodies, bottoms, bands, covers, stamped handles, and clips shall be a good grade of sheet steel having the strength, rigidity, and quality necessary for the production of hot-dipped galvanized ware conforming to this standard. Top wires, bails for pails, and wire handles shall be of drawn-steel wire. Rivets shall be of high-grade soft steel.

3.3 *Attachments.*

3.3.1 *Top wire.*—Top wire shall be full length (not spliced) with ends separated not more than $\frac{1}{2}$ inch and fully enclosed except where exposed for forming ears.

3.3.2 *Bails and bail ears, handles and handle clips.*—Shall be of ample strength and so attached that no permanent deformation shall occur when samples of articles are tested as described in paragraph 4.3.

3.4 *Tightness.*—All articles intended to hold liquids shall be watertight when tested as described in paragraph 4.2.

TABLE 1. Hot-dipped galvanized ware (Standard Grade items only)

Item	Nominal size ¹	Minimum weight per dozen finished ²
Water pails.....	8 qt.....	<i>Lb. avdp.</i> 20
	10 qt.....	23
	12 qt.....	25
	14 qt.....	28
Round tubs—0.....	8 gal.....	50
	1.....	66
	2.....	80
	3.....	95
Scrub tubs.....	4 gal.....	30
Garbage and ashcans and garbage pails.....	4 gal.....	48
	6 gal.....	60
	8 gal.....	77
	10 gal.....	86
	15 gal.....	115
	20 gal.....	140
	32 gal.....	170
Coal hods (open style).....	16 in. ³	31
	17 in. ³	36
	18 in. ³	39
Baskets.....	½ bu.....	40
	1 bu.....	64
	1½ bu.....	80
Measures (grain and feed).....	½ bu.....	40

¹ The capacity or dimension of water and garbage pails, round and scrub tubs, garbage and ashcans and coal hods shall be not less than 95 percent of the nominal size. The capacity of baskets and grain or feed measures shall be not less than the nominal size.

² Weight includes covers when furnished with items.

³ This dimension is the distance from lower back at the bottom of the coal hod to the top of the front lip.

3.5 Coating.—After fabrication and cleaning, each article shall be completely zinc-coated by the hot-dip process. The coating shall be smooth, continuous, and thorough. It shall be commercially free from such imperfections as lumps, slivers, blisters, gritty areas, uncoated spots, acid and black spots, dross and flux, and shall have clean bright spangled surfaces.

3.5.1 Composition of coating.—The coating shall be Prime Western zinc or better. The zinc bath shall contain less than 2 percent total of elements other than zinc.

3.5.2 Weight of coating.—The weight of coating on the finished article shall be not less than 1½ ounces per square foot as determined by the method described in paragraph 4.5. The weight of the coating is the total amount on both sides of the steel sheet, expressed in ounces per square foot.

3.5.3 Adherence of coating.—The coating shall be sufficiently tight to withstand the test described in paragraph 4.4.

3.6 Workmanship and appearance.—Workmanship shall be such as to insure the production of articles free from defects impairing their water-tightness (when intended for holding liquids), serviceability, or durability. All rivets shall be securely set and all welds shall be sound and smooth.

4. METHODS OF INSPECTION AND TEST

4.1 *Inspection.*—Sufficient samples of galvanized ware shall be selected at random from each lot of each item produced during the process of manufacture as are needed to maintain the quality of the product so as to be consistently in conformance with this standard. The inspections and tests given herein shall be made regularly during production of all items labeled as conforming with this standard.

4.2 *Test for liquid-tightness.*—Samples of articles intended to hold liquid shall be taken at random. Each sample selected shall be filled with water and allowed to stand for 24 hours. To be acceptable under this test, there shall be no indications of leakage during this period.

4.3 *Test for resistance to deformation.*

4.3.1 *Articles other than ash and garbage cans and garbage pails.*—Samples shall be taken at random and be completely filled with dry sand and suspended from the bail or handles for a period of 5 minutes. Measurements shall be made before and after test to determine whether any permanent deformation of bails or bail ears, of handles or handle clips, or top diameter has occurred.

4.3.2 *Ash and garbage cans and garbage pails.*—Samples taken at random shall be filled with dry sand to half capacity and suspended in the same manner as described above for a 5-minute period. The same measurements for deformation shall be taken.

4.4 *Test for adherence of coating.*—After inspection, the samples selected for tests shall be struck a blow with a ½ pound ball-pein hammer with sufficient force to dent the metal. The coating shall be adherent and no peeling shall result.

4.5 *Test for the weight of coating.*—The weight of coating shall be determined by the standard spot test method as described in American Society for Testing Materials Standard A90-53¹ Methods of Test for Weight of Coating on Zinc-Coated (galvanized) Iron or Steel Articles.

5. IDENTIFICATION

5.1 *Labels.*—In order that purchasers of hot-dipped galvanized ware may be assured that the articles comply with the requirements of this standard, it is recommended that the following statement appear on labels affixed to the articles:

This standard grade article of hot-dipped galvanized ware conforms to the requirements of Commercial Standard CS161-59, as developed by the trade under the procedure of the Commodity Standards Division, and issued by the United States Department of Commerce.

(Company name)

5.1.1 The following label illustrates the method adopted by the Galvanized Ware Manufacturers Council to identify ware that meets the standards of quality herein recorded, thus giving assurance to distributors and users that the labeled items are in accordance with the requirements of this Commercial Standard. Different labels may be designed and used by other associations or individual companies to identify items that comply, and the manufacturer.

¹ Available from the American Society for Testing Materials, 1916 Race St., Philadelphia 4, Pa.



QUALITY GUARANTEE

This Galvanized Ware meets all requirements of the Applicable Commercial Standards, CS169-59 or CS161-59 issued by the U. S. Department of Commerce.

BY

MEMBER OF
GALVANIZED WARE MANUFACTURERS COUNCIL

HISTORY OF PROJECT

First edition.—The Galvanized Ware Manufacturers Council, in response to a desire for an effective means to measure and improve the quality of its members' products, requested the Commodity Standards Division to assist the industry in establishing a Commercial Standard for hot-dipped galvanized ware, standard grade, coated after fabrication. A proposed standard was submitted, which covered materials, construction and tests, together with provisions for labeling, so as to identify products that comply. The standard was circulated to the industry for consideration and was generally accepted. In 1949 the standard was promulgated as CS161-49.

Prior to the adoption of this standard the industry had established a Simplified Practice Recommendation, R226-47, which was used to reduce excessive variety in styles and sizes of hot-dipped items coated after fabrication, and items fabricated from pregalvanized steel sheets. Two separate standards, one for each method of production, were established (see also CS169-59 Galvanized Ware Fabricated from Pregalvanized Steel Sheets), and the standard for simplified practice was withdrawn.

Current edition.—In May 1958, with the cooperation of the Galvanized Ware Manufacturers Council, proposals were submitted for improving the standard by adding a minimum weight of coating and tests for coating weight and adherence, together with other modifications to conform with current trade practices. After approval by a majority of the Standing Committee, the recommended revision, TS-5446, was submitted to the industry on September 9, 1959, for consideration. The written acceptances subsequently received indicated a sufficiently favorable majority to insure the successful application of the standard. Accordingly, its establishment as Commercial Standard CS161-59 was announced by the Commodity Standards Division on December 31, 1959.

Project Manager: Edward J. McCamley, Commodity Standards Division, Office of Technical Services.

Technical Advisor: George A. Ellinger, Chief, Corrosion Section, Metallurgy Division, National Bureau of Standards.

STANDING COMMITTEE

The following individuals comprise the membership of the Standing Committee, which reviews and makes recommendations for the guidance of the Commodity Standards Division relating to all proposed changes or revisions. Comments concerning the standard and suggestions for revisions may be addressed to any member of the committee or to the Commodity Standards Division, Office of Technical Services, U.S. Department of Commerce, which acts as Secretary for the Committee.

W. B. THOMAS, Galvanized Ware Manufacturers Council, Cleveland, Ohio (Acting Chairman).

VINCENT ANSON, Jones & Laughlin Steel Corporation, Toledo, Ohio.

GEORGE FRITZ, JR., F. H. Lawson Co., Cincinnati, Ohio.

ASHLEY F. WILSON, JR., Lisk-Savory Corporation, Canandaigua, N.Y.

W. J. SCHLUETER, Schlueter Manufacturing Co., St. Louis, Mo.

THOMAS A. FERNLEY, JR., National Wholesale Hardware Association, Philadelphia, Pa.

RUSSELL R. MUELLER, National Retail Hardware Association, Indianapolis, Ind.

I. G. JACKSON, Sears, Roebuck & Co., Chicago, Ill.

**ACCEPTANCE OF COMMERCIAL STANDARD
Standard Grade Hot-Dipped Galvanized Ware
(Coated After Fabrication)**

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.

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 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.

(Cut on this line)

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.

ACCEPTORS

The manufacturers, distributors, users and others listed below 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.

ASSOCIATIONS (General Support)

American Specification Institute, Chicago, Ill.
Galvanized Ware Manufacturers Council, Cleveland, Ohio

FIRMS AND OTHER INTERESTS

Albany Hardware Co., Albany, Ga.
Albany Hardware & Iron Co., Albany, N.Y.
Allen & Jemison Co., Tucaloosa, Ala.
Atlantic Stamping Co., Rochester, N.Y.
Ault Hardware Co., Chattanooga, Tenn.

Blumberg, Wm. L., Co., Inc., Brooklyn, N.Y.
Bostwick-Braun Co., The, Toledo, Ohio
Buhrman-Pharr Hardware Co., Texarkana, Ark.
Burkhead Manufacturing Co., Houston, Tex.

Clark Hardware & Supply Co., Division of Pitts Corp., Jamestown, N.Y.
Cole, Wm. H. & Sons, Baltimore, Md.
Corpus Christi Hardware Co., Corpus Christi, Tex.
Creamer & Dunlap, Inc., Tulsa, Okla.
Crunden Martin Manufacturing Co., St. Louis, Mo.

Danser Hardware & Supply Co., Weston, W. Va.
Delaware Hardware Co., Wilmington, Del.
Dinkins-Davidson Hardware Co., Atlanta, Ga.
Dunham-Hanson Co., Bangor, Maine
Dutton-Lainson Co., Hastings, Nebr.

Emery Hardware Co., Bradford, Pa.

Fones Bros. Hardware Co., Little Rock, Ark.
Frankfurth Hardware Co., Milwaukee, Wis.
Frazer & Jones Co., Division of Eastern Malleable Iron Co., Syracuse, N.Y.
Frontier Galvanizing Corp., Buffalo, N.Y.

Garnich, E., & Sons Hardware Co., Ashland, Wis.
General Metalware Co., Minneapolis, Minn.

Hagar Hardware & Paint Co., Burlington, Vt.

Hardware House, Silver City, N. Mex.
Haw Hardware Co., Ottumwa, Iowa
Haynes & Chalmers Co., Bangor, Maine
Hedges, M. M., Manufacturing Co., Inc., Chattanooga, Tenn.

Herr & Co., Inc., Lancaster, Pa.
Hockaday, Ed. & Co., Kingfisher, Okla.
House-Hasson Hardware Co., Knoxville, Tenn.
Hubbard, Geo. W., Hardware Co., Flint, Mich.

Ilfeld, Chas., Co., Albuquerque, N. Mex.
Imperial Hardware Co., El Centro, Calif.
Industrial Metal Protectives, Inc., Dayton, Ohio

Jackson Hardware Co., Aberdeen, S. Dak.
Jensen-Byrd Co., Spokane, Wash.

Jones & Laughlin Steel Corp., Container Div., Pittsburgh, Pa.

Knight & Wall Co., Tampa, Fla.
Koller Bros. Co., The, Cleveland, Ohio

Lawson, The F. H. Co., Cincinnati, Ohio
Lee Hardware Co., Ltd., The, Shreveport, La.

Lillen Hardware & Supply Corp., Long Island City, N.Y.
Lisk-Savory Corp., Canandaigua, N.Y.

McKee, R. D., Inc., Hagerstown, Md.
Miller Nath Hardware Co., Yellville, Ark.
Mitchell-Powers Hardware Co., Bristol, Va.
Montana Lumber & Hardware Co., Lewiston, Mont.
Muntz, Henry, & Sons Co., Elgin, Ill.
Myers, M. P., & Co., Inc., Plattsburgh, N.Y.

Northern Commercial Co., Seattle, Wash.
Norton Hardware Co., Norton, Va.

O'Connell, J. T., Inc., Newport, R.I.

Pearlstine Hardware Co., St. Matthews, S.C.
Peavey, L. L., Co., Inc., Portsmouth, N.H.
Peden Iron & Steel Co., Houston, Tex.
Peterson Lumber Co., El Paso, Tex.
Phillips, I. W., & Co., Tampa, Fla.
Pierce Hardware Co., Taunton, Mass.

Rea, E. J., Co., Hermosa Beach, Calif.
Reliable Hardware Co., Boston, Mass.
Richmond Hardware Co., Richmond, Va.
Roberts, Sanford & Taylor Co., Sherman, Tex.

Sabine Supply Co., The, Orange, Tex.
Schafer Co., Inc., The, Decatur, Ind.
Schlatter Hardware Co., Inc., Fort Wayne, Ind.

Schlueter Manufacturing Co., St. Louis, Mo.
Smith, W. H., Hardware Co., The, Parkersburg, W. Va.

Southern Galvanizing Co., The, Baltimore, Md.
Stangel, J. J., Hardware Co., Manitowoc, Wis.

Summers Hardware & Supply Co., Johnson City, Tenn.

Turner Hardware Co., Stockton, Calif.

United Steel & Wire Co., Battle Creek, Mich.

Watts Hardware & Supply Co., San Antonio, Tex.

Wheeling Corrugating Co., Wheeling, W. Va.
Winter Hardware Co., Billings, Mont.

Witt Cornice Co., The, Cincinnati, Ohio
Woodward, Wight & Co., Ltd., New Orleans, La.

U.S. GOVERNMENT

Atomic Energy Commission, Property and Supply Management Branch, Washington, D.C.

Dept. of Health, Education and Welfare, Procurement and Supply Management Branch, Washington, D.C.

Veterans Administration, Washington, D.C.