ENAMELED CAST-IRON PLUMBING FIXTURES

(Second Edition)

COMMERCIAL STANDARD CS77–48

[Supersedes CS77–40]

Effective Date for New Production From June 1, 1948

A RECORDED VOLUNTARY STANDARD
OF THE TRADE

UNITED STATES DEPARTMENT OF COMMERCE
CHARLES SAWYER, Secretary

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 10 cents

COMMODITY STANDARDS

Simplified Practice Recommendations and Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Commodity Standards Division[1] 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 FOR ENAMELED CAST-IRON PLUMBING FIXTURES

On December 29, 1947, at the instance of the Enameled Cast Iron Plumbing Fixtures Association, the recommended revision of the Commercial Standard for Sanitary Cast-Iron Enameled Ware, proposed by the Association and adjusted in accordance with comment from other interested organizations, was circulated to the trade for written acceptance. Those concerned have since accepted and approved the second edition, Commercial Standard for Enameled Cast-Iron Plumbing Fixtures, as shown herein.

Project Manager: A. S. Best, Commodity Standards Division, National Bureau of Standards.

Technical Adviser: J. C. Richmond, Mineral Products Division, National Bureau of Standards.

[1] Effective July 1, 1947, the Division of Simplified Practice, organized in 1921, and the Division of Trade Standards, organized in 1927, were combined to form the Commodity Standards Division. Since their organization, both of these Divisions have assisted many industries in the development of Simplified Practice Recommendations and Commercial Standards for a wide variety of commodities. A list of previously established Commercial Standards appears herein. A list of effective Simplified Practice Recommendations may be obtained from the Commodity Standards Division, National Bureau of Standards, Washington 25, D. C.

COMMERCIAL STANDARD CS77–48

for

ENAMELED CAST-IRON PLUMBING FIXTURES

(SECOND EDITION) [2]

PURPOSE

1. The purpose of this commercial standard is to establish minimum standard specifications, definitions, inspection rules, types and sizes of standard items, and methods of test for enameled cast-iron plumbing fixtures, for the guidance of manufacturers, distributors, and users of these products. By general acceptance and use of the standard, and by certifying conformity with the requirements, essential quality is maintained for the promotion of fair competition and greater consumer acceptance, to the mutual advantage of all concerned.

SCOPE

2. This standard provides minimum requirements for enameled cast-iron plumbing fixtures such as bathtubs, lavatories, kitchen sinks, laundry trays, drinking fountains, and similar fixtures, as well as types and sizes of standard items. Requirements include material, thickness, warpage, enameling, acid-resistance, inspection rules, and marking.

GENERAL REQUIREMENTS

3. *Material of base.*—The metal base shall be one-piece high-grade cast iron, strong, sound, true to form, and free from porosity or any other defects which may affect the serviceability of the fixtures.

4. *Thickness of base metal.*[3]—The cast-iron base shall have a thickness of not less than ⅛ inch at any point not less than 1 inch from any edge.

5a. *Enameling.*—The enameled surface of each fixture shall be coated with porcelain enamel applied by the dry process, and thoroughly fused to the cast-iron base. There shall be no appearance of inadequate covering. The enamel shall be glossy and free from flaws which affect the appearance or may affect the serviceability of the fixture. The thickness of the enamel as measured on a flat surface at least 1 inch from any edge shall be not less than 0.025 inch. (See footnote 3.) Blemishes shall be limited in accordance with the inspection rules herein. The unenameled surface of each fixture shall be treated with one coat of filler, ground coat or paint.

[2] This second edition supersedes CS77-40, Sanitary Cast-Iron Enameled Ware.

[3] The thickness of the enamel may be determined conveniently without damaging the fixture, by using a thickness gage for nonmagnetic coatings on a magnetic base. The thickness of the cast-iron base may be determined by subtracting the thickness of the enamel from the total calipered thickness.

5b. Acid-resisting enamel shall be acid-resisting throughout the entire enamel thickness and shall pass successfully the tests specified in paragraph 58.

6. *Warpage.*—Warpage of edges set against wall or floor, and edges of roll-rim and flat-rim sinks, where set into cabinets or counter tops, shall not exceed $\frac{1}{16}$ inch per foot when tested according to the method given in paragraph 57. Warpage of all other edges shall not exceed $\frac{3}{32}$ inch per foot when tested according to the same method.

7. *Dimensional tolerances.*—Fixtures shall conform to the specified dimensions, subject to a variation of not more than plus or minus 3 percent, except where dimensions are specified as "maximum," "minimum," or "approximate." Where an approximate dimension is given, the nearest commercial equivalent size, within plus or minus 5 percent of the dimension given, is intended, so as to provide for minor size variations between manufacturers as well as ordinary manufacturing variations.

8. *Colored ware.*—In addition to white, four basic colors are recognized as standard; namely, green, blue, ivory, and peach-brown. The exact color furnished is determined by each manufacturer, in accordance with his individual production problems.

STANDARD TYPES AND SIZES

9. The types and sizes of enameled cast-iron plumbing fixtures listed below are recognized as standard, excepting those which are recommended for elimination (printed in smaller type within brackets). Other types and sizes which may be cataloged or otherwise offered for sale are not classed as standard.

BATHTUBS

10. *Single-shell bathtubs.*

(a) Recess single-shell bathtubs with right or left outlet: 5-foot length is standard.

[b. Recommend elimination of all single-shell corner bathtubs.]

[c. Recommend elimination of 4½- and 5½-foot recess single-shell bathtubs.]

11. *Double-shell bathtubs.*

(a) Right and left corner double-shell bathtubs with outlet on concealed end: 5- and 5½-foot lengths are standard.

(b) Right and left corner double-shell bathtubs with outlet on exposed end: 5- and 5½-foot lengths are standard.

(c) Right and left recess double-shell bathtubs: 4½-, 5- and 5½-foot lengths are standard.

[d. Recommend elimination of 6-foot right and left recess double-shell bathtubs.]

(e) Recess double-shell square-pattern bathtubs with integral seat or seats and with right or left outlet: approximately 48 inches square is standard.

(f) Corner double-shell square-pattern bathtubs with integral seat or seats and with right or left outlet: approximately 48 inches square is standard.

12. *Roll-rim bathtubs on legs.*
(a) Roll-rim bathtubs on legs: 4½′ × 26″, 5′ × 26″, 4½′ × 30″, and 5′ × 30″ sizes are standard.

[b. Recommend elimination of 4′ × 26″, 5½′ × 26″, 4′ × 30″, 5½′ × 30″, and 6′ × 30″ sizes of roll-rim bathtubs on legs.]

13. [Bathtub bases. Recommend elimination of all bathtub bases.]

RECEPTORS

14. *Recess receptor with apron not less than 4½ inches high:* the minimum standard size is 36″ × 36″.

LAVATORIES

15. *Apron lavatories with straight back.*
(a) Straight-front apron lavatories with straight back: 19″×17″ to 22″×19″ sizes are standard.
(b) Round-front apron lavatories with straight back: sizes approximately 19″×17″ and 26″×14″ (space saver) are standard.

16. *Apron corner lavatories with straight back.*
(a) Apron corner lavatory with straight back: one size approximately 16″×16″ is standard.

[b. Recommend elimination of all other sizes of apron corner lavatories with straight back.]

17. [Roll-rim lavatories with straight back. Recommend elimination of all sizes.]

18. [Corner roll-rim lavatories with straight back. Recommend elimination of all sizes.]

19. *Faucet-hole spacing.*
(a) Center-set fittings. The standard faucet-hole spacing for center-set fittings is 4 inches center-to-center, in the top, in the front, in a recessed center panel, or in front of the shelf or the ledge in either shelf-back or ledge-back lavatories; and in lavatories with or without back.
(b) Separate faucets and combination fittings. The standard faucet-hole spacing for separate faucets and combination fittings is 8 inches center-to-center, in top of or in front of the shelf or the ledge in either shelf-back or ledge-back lavatories; and in all staple pattern lavatories with or without back, except where impractical and where commercial practice requires 10- or 12-inch spacing.

20. *Height of backs.*—For all lavatories with straight backs a height of back of 5 to 7 inches is standard.

21. *Apron and roll-rim slab-type lavatory (without back):* 24″×20″ size is standard.

22. *Shelf-back lavatories with apron:* sizes 19″×17″, 21″×18″, 22″×19″ and 24″×18″ are standard.

[These lavatories are also made in varying sizes ranging from 13″×13″ to 24″×18″ for wall, leg, and cabinet assembly; and up to 26″×14″ in several space saver sizes.]

WASH SINKS

23. *Roll-rim free-standing wash sinks on pedestals or standards:* 30 inches wide by 8 inches deep by 4-, 5-, 6-, and 8-foot lengths are standard.

24. *Wall-hanging wash sinks with back, with and without pedestals:* 18″×4′, 18″×5′, 18″×6′, and 22″×8′ are standard sizes.

KITCHEN SINKS

25. *Roll-rim kitchen sinks with straight back.*

(a) Roll-rim kitchen sink with straight back and single drainboard, right or left: 42 inch length is standard.

[b. Recommend elimination of all other sizes of single-drainboard roll-rim kitchen sinks with straight back.]

(c) Roll-rim double-drainboard kitchen sink with straight back: size approximately 60″×22″ is standard.

26. *Apron kitchen sinks with straight back.*

(a) Apron kitchen sink with straight back and single drainboard, right or left: one size, approximately 42″×20″ is standard.

[b. Recommend elimination of all other sizes of apron kitchen sinks with straight back and single drainboard.]

(c) Apron kitchen sink with straight back and double drainboard: size 60″×22″ is standard.

27. [Corner kitchen sinks. Recommend elimination of all corner roll-rim and apron kitchen sinks with single drainboard.]

28. ["Three-eights" kitchen sinks. Recommend elimination of all 3–8 kitchen sinks. (Sinks having 8-inch back, 8-inch apron, and 8-inch depth.)]

29. *Ledge kitchen sinks, 22 inches wide with back.* (Designed for installation over cabinets.)

(a) Ledge kitchen sink with back and single drainboard, right or left: size 42″×22″ is standard.

(b) Ledge kitchen sink with back and double drainboard: 54- and 60-inch lengths, approximately 22 inches wide, are standard.

(c) Ledge kitchen sink with back and two compartments without drainboard: 42-inch length, approximately 22 inches wide, is standard.

30. *Ledge kitchen sinks, 23½ to 25 inches wide, with back.* (Designed for installation over cabinets.)

(a) Ledge kitchen sink with back and single drainboard, right or left: size 42″×23½″ to 25″ is standard.

(b) Ledge kitchen sink with back and double drainboard: sizes 54″×23½″ to 25″, and 60″×23½″ to 25″ are standard.

(c) Ledge kitchen sink with back and two compartments without drainboard: size 42″×23½″ to 25″ is standard.

(d) Ledge kitchen sink with back, two compartments and double drainboard: sizes 60″×23½″ to 25″, 66″×23½″ to 25″, and 72″×23½″ to 25″ are standard.

31. *Flat-rim ledge kitchen sinks, 21 inches wide.*
   (a) Flat-rim ledge kitchen sink without drainboard: sizes 24″ ×21″ and 30″×21″ are standard.
   (b) Flat-rim ledge kitchen sink, two compartments, without drainboard: sizes 32″×20″ or 21″, and 42″×20″ or 21″ are standard.
   (c) Flat-rim ledge kitchen sink with single drainboard, right or left: size 42″×21″ is standard.
   (d) Flat-rim ledge kitchen sink with double drainboard: size 54″×21″ is standard.

32. *One-piece, roll-rim kitchen sinks with back (no drainboard).*
   (a) One-piece roll-rim kitchen sink with back: sizes 24″×18″ and 30″×20″ are standard.

   [b. Recommend elimination of all other sizes of one-piece roll-rim kitchen sinks with back and no drainboard.]

33. [Recommend elimination of all one-piece apron kitchen sinks with back and no drainboard.]

34. *One-piece flat-rim kitchen sinks with back (no drainboard)*: sizes 24″×20″ and 30″×20″ are standard.

35. [Recommend elimination of all end-outlet flat-rim kitchen sinks.]

36. *Center-outlet flat-rim kitchen sinks.*
   (a) Center-outlet flat-rim kitchen sinks: sizes 12″×12″, 24″×16″, 24″×18″, 30″×18″, 24″×20″, and 30″×20″, all in one depth, are standard. Depth 6 to 8 inches.

   [b. Recommend elimination of all other sizes of center-outlet flat-rim kitchen sinks.]

37. *Flat-rim two-compartment kitchen sinks:* sizes 32″×20″ and 42″×20″ or 22″ are standard.

38. *Standard radius.*—The standard radius of the outside corner of rims of flat-rim and ledge sinks designed for building into counter tops is 1½ inches, plus or minus 3/16 inch.

39. [Drainboards. Recommend elimination of all separate drainboards.]

40. [Sink backs. Recommend elimination of all separate sink backs.]

COMBINATION SINKS AND LAUNDRY TRAYS

41. *Rim ledge sink and laundry tray combinations with back, sink at right or left:* sizes approximately 36″×25″, 42″×25″, and 50″×25″ are standard. (Designed for installation over cabinets or on legs.)

42. *Apron ledge sink and laundry tray combinations with back, sink at right or left:* sizes approximately 42″×25″ and 50″×25″ are standard.

43. *Flat-rim sink and laundry tray combination, reversible:* size approximately 42″×20″ is standard.

SERVICE SINKS

44. *Roll-rim service sinks with back, on trap standard.*
   (a) Roll-rim service sinks with back, on trap standard: sizes 22″×18″ and 24″×20″ are standard.

   [b. Recommend elimination of all other sizes of roll-rim service sinks with back, on trap standards.]

45. [Recommend elimination of all flat-rim and roll-rim service sinks without back, with trap standards.]

SUMP SINKS

46. *Flat-rim sump sinks.*
(a) Flat-rim sump sinks: sizes 16″×16″×10″, 20″×16″×10″ or 12″, and 24″×20″×10″ or 12″ are standard.
[b. Recommend elimination of all other sizes of flat-rim sump sinks.]

LAUNDRY TRAYS

47. *Roll-rim laundry trays with back.*
(a) Roll-rim laundry tray with back, single compartment: size 27″ or 28″×26″ is standard.
(b) Roll-rim laundry tray with back, double compartment: size approximately 53″×26″ is standard.
48. *Ledge laundry tray with double compartment:* size 48″×25″ is standard.
49. *Flat-rim laundry tray:* size 24″×20″ is standard.

URINALS

50. *Trough urinals with back, and with or without lip:* 3-, 4- and 6-foot lengths are standard.

DEFINITIONS

51. *Inspection window.*—A circular opening 3 inches in diameter cut from a small sheet of any flexible material, such as rubber or paper, for convenience in sliding over irregular surfaces to determine segregation. A segregation is a collection of blemishes within the inspection window greater than permitted by table 1.
52. *Flaws.*
Cracked fixture.—A fixture with a rupture extending through both the casting and enamel.
Craze.—A crack in the enamel surface.
Lift.—An area of metal base from which the enamel has separated.
Pinhole.—A hole which extends through the enamel to the metal base.
53. *Blemishes.*
Dimple.—A slight depression in the enamel surface.
Lump.—A raised portion of the enamel surface.
Specks.—Particles of foreign matter which produce a colored portion of the surface:
Small: 1/100 to 1/64 inch in maximum dimension.
Medium: Over 1/64 to 1/32 inch in maximum dimension.
Large: Over 1/32 to 1/16 inch in maximum dimension.
Waviness.—The appearance of irregular surface in the glaze. Some waviness in an enamel surface is unavoidable and is not cause for rejection.
54. *Ledge back.*—A flat ledge at the back of a lavatory or sink, not more than 2 inches higher than the rim and extending the full length of the fixture, on which the supply fitting can be mounted and small articles can be placed; or a similar construction with a center panel suitable for mounting a supply fitting.
55. *Shelf back.*—A flat elevation at the back of a lavatory, higher than 2 inches above the rim and extending the full length of the

fixture, on the top or front of which the supply fitting can be mounted and on which small articles can be placed; or a similar construction with a center panel formed into the shelf suitable for mounting a supply fitting.

INSPECTION RULES

56. The fixture shall be examined with the eyes of the observer about 2 feet from the surface observed. The light source shall be partially diffused daylight, supplemented if necessary with diffused artificial light, the total being of intensity approximating that usually available within a few feet of an outside window, but not in direct sunlight. No actual count or measure of blemishes should be attempted except in case of doubt, since with practice, dimensional limits and numbers can readily be gaged by the eye. No flaws shall be allowed. Some waviness in an enamel surface is unavoidable and is not cause for rejection; other blemishes shall be limited to those listed in table 1.

TABLE 1. *Allowable blemishes*

Description	Size or appearance	Maximum number allowed per inspection window	Maximum number allowed per fixture
Specks	Small	4	Not to be counted.
	Medium	2	8
	Large	1	5
Dimples		2	8
Lumps		2	8

METHODS OF TEST

57. *Warpage.*—The fixture shall be placed on a flat surface so as to ascertain the amount of deviation from the horizontal plane at the edges of the fixture. If a feeler gage of thickness equal to the total allowable warpage will not slide under the fixture without forcing, the fixture satisfactorily comes within the warpage limitations. If the fixture will rock on two opposite high corners, the horizontal plane shall be determined by placing one feeler gage of the total warpage allowed under one low corner and holding the fixture firmly on this gage. If a second feeler gage of the same thickness will not slide under the fixture at any other point, the fixture is not warped out of the horizontal plane by more than the specified tolerance, and satisfactorily comes within the warpage limitations.

58. *Tests for acid-resisting enamel.*

58a. *Methods of test.*—Acid-resisting enamel shall be subjected either to the lemon test or to the citric acid test, as specified below, but in cases of dispute the citric acid test shall be the umpire test. The test for subsurface acid-resistance may be made at the option of the purchasing agency or the inspector.

58b. *Lemon test.*—A freshly cut half of a normally ripe lemon shall be applied to a cleaned area of the enameled ware, and after 24 hours

786273—48——2

at room temperature the lemon shall be removed and the surface washed with water and wiped dry. No effect on the enamel shall be visible upon careful inspection.

58c. *Citric acid test (umpire test).*—A fresh test solution made of one part citric acid crystals to ten parts water by weight shall be applied to the surface of the enamel for 15 minutes, at the end of which period, after washing and drying, no effect of the acid on the treated area shall be visible upon careful inspection. The ware and the acid solution shall have been stored for not less than 3 hours immediately preceding the tests in an atmosphere at 80° F, ±10° F, and the tests shall be made under these conditions of temperature. The test solution shall be applied to clean areas in pools consisting of several drops and covered with a watch glass to hold the solution in place.

58d. *Test for subsurface acid-resistance of enamel coatings on cast iron.*—The test is ordinarily made on a flat or nearly flat specimen 2 inches square cut from a fixture.

(1) Grind off the enamel so as to expose a smooth oblique section of the coating and part of the metal base. Specimens cut from the article may be ground along a cut edge. The oblique section of enamel shall be ¾ inch, ±⅛ inch (1.6 to 2.2 cm) wide. The abrasive used in grinding shall pass a No. 150 sieve and shall be moistened during grinding.

(2) Restore the gloss to the ground enamel surface by refiring just sufficiently to obtain a fire polish. The polished surface shall permit ready cleaning, with a dry cloth, of marks made by a colored wax pencil.

(3) Apply the citric acid test, as specified in paragraph 58c, to the full width of the fire-polished oblique section. The cut specimens may be immersed in the test solution. After application of the test solution for 15 minutes, the treated surface shall be washed and dried.

(4) The entire oblique section shall be rubbed with a colored wax pencil, and the deposit of colored wax rubbed with a dry cloth. If the wax cannot be readily and evenly removed from all portions of the treated area of enamel by rubbing, thus indicating that the enamel has been roughened by the test solution, the enamel shall not be considered acid-resisting throughout.

59. *Trade-mark.*—In order to fix the responsibility for quality, the enameled cast-iron plumbing fixtures shall bear the manufacturer's name, or trade-mark duly applied for or registered under the laws of the United States. All acid-resisting enameled fixtures shall bear the manufacturer's mark permanently signifying acid-resisting enamel. These marks shall be located, if possible, so as to be visible after the fixture is installed.

LABELING

60. In order that the purchaser may be assured that he is obtaining enameled cast-iron plumbing fixtures conforming to this standard, it is recommended that ware complying therewith shall bear a sticker or other label containing the following wording:

> The manufacturer declares that this enameled CAST-IRON fixture complies with all the requirements and tests of Commercial Standard CS77–48, as developed by the trade under the procedure of the National Bureau of Standards, and issued by the United States Department of Commerce.

This may be followed by the manufacturer's recommendations on handling, setting, and cleaning up.

EFFECTIVE DATE

61. 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 June 1, 1948.

Edwin W. Ely,
Chief, Commodity Standards Division.

HISTORY OF PROJECT

On March 28, 1939, the National Bureau of Standards was requested by the Sanitary Cast Iron Enameled Ware Association to assist the industry in the establishment of a commercial standard for sanitary cast-iron enameled ware. A proposed draft submitted by the Association was circulated to other interested organizations for comment. Their composite recommendations were incorporated in an adjusted draft which was circulated on July 12, 1939, to all branches of the trade. Upon receipt of endorsements in writing sufficient to represent a satisfactory majority of production volume, announcement was made that the standard would become effective October 10, 1939.

Recommendations were received from the Sanitary Cast Iron Enameled Ware Association on March 30, 1940, for certain revisions before printing, to require that acid-resisting enamel shall be acid-resistant throughout its thickness, and to replace a hydrochloric acid test with the citric acid umpire test. These and minor editorial changes were endorsed by the standing committee and circulated to the trade. On further recommendation from the standing committee, in view of wide agreement on the changes, the trade was notified that in the absence of objection the revision would be promulgated. Following receipt of sufficient written acceptances, the establishment of the revision was announced on April 25, 1940, as Commercial Standard CS77–40, and it was later issued as the first printed edition.

Second edition.—A recommended revision was received from the Enameled Cast Iron Plumbing Fixtures Association under date of May 13, 1946, consisting chiefly of a list of standard types and sizes of fixtures, together with recommendations to eliminate certain fixtures which appeared to be no longer needed by the trade. A change in the title was also recommended, as well as the addition of requirements on dimensional tolerances, a list of standard colors, and definitions for ledge-back and shelf-back fixtures. Upon circulation to the industry on December 29, 1947, following approval by the standing committee, the revision was accepted in writing by a satisfactory majority, and the second edition was announced on April 30, 1948, as Commercial Standard CS77–48.

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. 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 Commodity Standards Division, National Bureau of Standards, which acts as secretary for the committee.

A. G. Zibell, *Chairman*

A. G. Zibell, Kohler Co., Kohler, Wis.
W. O. Thompson, American Radiator & Standard Sanitary Corp., Pittsburgh 30, Pa.
D. J. Crane, Eljer Co., Ford City, Pa.
R. H. Zinkil, Crane Co., Chicago 5, Ill.
C. Stuart Rambo, The Central Supply Association, Chicago 1, Ill.
Alfred E. Ellis, Sol Ellis & Sons, Inc., Chicago 16, Ill. (representing the National Supply Association of America, Inc.).
G. A. Baehr, Sears, Roebuck & Co., Chicago 7, Ill. (representing the Mail Order Association of America).
Benjamin Cadbury, Hajoca Corp., Philadelphia 1, Pa.
J. L. Murphy, 340 East 44th Street, New York 17, N. Y. (representing National Association of Master Plumbers).
Leon Chatelain, Jr., A. I. A., Washington 6, D. C. (representing the American Institute of Architects).
Robert K. Thulman, Federal Housing Administration, Washington 25, D. C.
Franklyn Adams, State of Rhode Island, Providence 1, R. I. (representing National Association of Purchasing Agents).
F Morgan Brown, Western Plumbing Officials Association, Los Angeles 32, Calif.

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 CS77–48 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 enameled cast-iron plumbing fixtures. 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 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 acceptances 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.

ACCEPTORS

The organizations listed below have individually accepted this standard for use as far as practicable in the production, distribution, testing, or purchase of enameled cast-iron plumbing fixtures. 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)

American Hospital Association, Chicago, Ill.
American Hotel Association, New York, N. Y.
American Institute of Architects, Washington, D. C.
American Society of Sanitary Engineering, McKeesport, Pa.
American Specification Institute, Chicago, Ill.
Building Officials Conference of America, Inc., Washington, D. C.
Central Supply Association, Chicago, Ill.
Enameled Cast Iron Plumbing Fixtures Association, Washington, D. C.
National Association of Master Plumbers, New York, N. Y.
Western Plumbing Officials Association, Los Angeles, Calif.

FIRMS AND OTHER INTERESTS

Abilene Plumbing Supply Co., Abilene, Tex.
Adams, Franklin O., Tampa, Fla.
Alert Pipe & Supply Co., Bay City, Mich.
Allen, George W., La Porte, Ind.
Allen Plumbing Supply Co., Allentown, Pa.
Alliance Ware, Inc., Alliance ,Ohio.
American Radiator & Standard Sanitary Corp., Pittsburgh, Pa.
Andresen, H. D., Co., Mound, Minn.
Andrew, W. T., Co., Highland Park, Mich.
Andrews, Jones, Biscoe & Goodell, Boston, Mass.
Annand & Kennedy, Portland, Oreg.
Asheim & Wilkins, Bridgeport, Conn.
Axtell Co., Ft. Worth, Tex.
Bailey-Farrell Co., Pittsburgh, Pa.
Baker Manufacturing Co., Enid. Okla.; Hutchinson, Kans.; and Omaha, Nebr.
Baltimore, City of, Bureau of Building Construction, Baltimore, Md.
Beall Bros. Supply Co., Alton, Ill.
Bell, John D., Hardware, Little Genesee, N. Y.
Bellman, Gillett & Richards, Toledo, Ohio.
Beshore, Chas., & Co., Marion, Ind.
Bethlehem Plumbing Supply Co., Bethlehem, Pa.
Biggs-Kurtz Co., The, Grand Junction, Colo.
Binda, Bial & Gerhardt, Union City, N. J.
Bishop, Horatio W., La Mesa, Calif.
Blackwell Wielandy Co., St. Louis, Mo.
Blodgett Supply Co., Inc., The, Burlington, Vt.
Boehm, George A., New York, N. Y.
Bond Supply Co., Kalamazoo, Mich.
Bovard, William R., Kansas City, Mo. (General support.)
Bradenton Woman's Club, Bradenton, Fla.
Braman, Dow & Co., Boston, Mass.
Brazer, Clarence W., New York, N. Y.
Brooks-Borg, Des Moines, Iowa.
Brown, W. J., Cedar Rapids, Iowa. (General support.)
Bruce-Rogers Co., Ft. Smith, Ark.
Brust & Brust, Milwaukee, Wis.
Bucky, Fred W., Jr., Jacksonville, Fla.
Beuth, John P., Moberly, Mo.
Buffalo, City of, Department of Public Works, Architectural Service, Buffalo, N. Y.
Butner Plumbing & Heating Co., Roanoke, Va., and Salem, Va.
Camlet, J. Thomas, Passaic, N. J.
Canfield Supply Co., Kingston, N. Y.
Cannon & Mullen, Salt Lake City, Utah.
Canton Supply Co., The, Canton, Ohio.
Capitol Supply Co., Lincoln, Nebr.
Careva Co., Inc., The, York, Pa.
Carsten Brothers, Ackley, Iowa.
Cedar Rapids Pump & Supply Co., Cedar Rapids Iowa.
Cellarius, Chas. F., Cincinnati, Ohio.
Chandler Co., Cedar Rapids, Iowa.
Chapin, Rollin C., Minneapolis, Minn. (General support.)
Chapman, Frank, Linton, Ind.
Chicago Vitreous Enamel Products Co., Cicero, Ill.
Cincinnati, City of, Cincinnati, Ohio.
City Plumbing Co., Sebring, Fla.
Coffin, Ralph V., Seattle, Wash.
Colt, Elisabeth, New York, N. Y.
Cokefair, E. N., Inc., New York, N. Y.
Cole Supply Co., Inc., Tuscaloosa, Ala.
Columbia University, Teachers College, New York, N. Y.
Consoer, Townsend & Associates, Chicago, Ill.
Consolidated Supply Co., Inc., Kansas City, Mo.
Cooper Supply Co., Tulsa, Okla.
Corbit's, Inc., Reading, Pa.
Cram & Ferguson, Boston, Mass.
Dalziel Plumbing Supplies, San Francisco, Calif.
Danser Hardware & Supply Co., Weston, W. Va.
Davies Supply Co., The, Chicago, Ill.
Dean, F. W., Boonville, N. Y.
De Jarnette, Charles Wagner, Des Moines, Iowa. (General support.)
Detroit Brass & Malleable Works, Detroit, Mich.
Detroit Testing Laboratory, The, Detroit, Mich.
Dorsett, J. E. H., Plumbing & Heating Co., Lakeland, Fla.
Dupuque, R. A., Supply Co., St. Louis, Mo.
Du-Kane Supply Co., Pittsburgh, Pa.
Duluth Plumbing Supplies Co., Duluth, Minn.
Eastern Plumbing Supply Co., Inc., The, Hartford, Conn.
18 Ave. Plumbers Supply Co., Inc., Brooklyn, N. Y.
Eljer Co., Ford City, Pa.
Emery Industries, Inc., Cincinnati, Ohio.
Eschweiler & Eschweiler, Milwaukee, Wis.
Espedahl, K. S., Columbia, S. C. (General support.)
Fall River Steam & Gas Pipe Co., Corporation, Fall River, Mass.
Federal Huber Co., Chicago, Ill.
Ferro Enamel Corp., Cleveland, Ohio.
Flannagan, Eric G., Henderson, N. C.
Fleck Co., Camden, N. J.
Flodder Bros., Batesville, Ind.
Frantz & Spence, Saginaw, Mich.
Furer, William C., Honolulu, Hawaii.

Galbraith Steel & Supply Co., Pecos, Tex.
Garber, Frank Co., Inc., Wisconsin Rapids, Wis. (General support.)
Geck Plumbing & Heating Supply Co., Inc., Rochester, N. Y.
General Electric Co., Schenectady, N. Y.
General Plumbing Supply Corp., Brooklyn, N. Y.
General Porcelain Enameling & Manufacturing Co., Chicago, Ill. (General support.)
Georgeson, F. T., Eureka, Calif.
Glauber, Inc., New York, N. Y.
Glick Supply Co., Marshalltown, Iowa.
Globe Plumbing Supply Co., Minneapolis, Minn.
Goodin Co., Minneapolis, Minn.
Gordon Lumber & Supply Co., Kenosha, Wis.
Grant, Chester F., Grand Rapids, Mich. (General support.)
Greene, Raymond C., & Co., Jenkintown, Pa.
Grinnell Co., Inc., Cleveland, Ohio, and Providence, R. I.
Groeniger, Wm. C., Columbus, Ohio.
Hajoca Corp., Philadelphia, Pa.
Hall, Turpin & Wachter, Baltimore, Md. (General support.)
Haralson & Mott, Ft. Smith, Ark.
Hardware & Supply Co., The, Akron, Ohio, and Massillon, Ohio.
Harley, Ellington & Day, Inc., Detroit, Mich.
Heffley Co., The, Battle Creek, Mich.
Hill Supply Co., Clarksdale, Miss.
Holl, William, Kenesaw, Nebr.
Holsman & Holsman & Klekamp, Chicago, Ill.
Holyoke Supply Co., Holyoke, Mass.
Hope, Frank L., San Diego, Calif.
Hospital Bureau of Standards & Supplies, Inc., New York, N. Y.
Hoe Supply Co., Christopher, Ill.
Houston Ready-Cut House Co., Houston, Tex.
Hubbard, S. B., Co., The, Jacksonville, Fla.
Hubert, Karl, Connersville, Ind.
Hughes Heating & Plumbing Co., Minneapolis, Minn.
Hughes Supply Co., The, Mansfield, Ohio.
Humphryes Manufacturing Co., The, Mansfield, Ohio.
Hunting Co., The, Rochester, N. Y.
Ihms, George H., Ottumwa, Iowa.
Illinois Supply Co., Aurora, Ill.
Illinois, University of, Urbana, Ill. (General support.)
Industrial Supply Co., Terre Haute, Ind.
Inland Supply Co., Danville, Ill.
Jardine Plumbing Co., The, Chillicothe, Ohio.
Johnson, J. D., Co., Pensacola, Fla.
Johnson Hardware Co., Clarksburg, W. Va.
Johnson's, Inc., Bellaire, Ohio.
Jones-Kay Plumbing Co., Pendleton, Oreg.
Joplin Supply Co., Joplin, Mo.
Joughin, R. T., & Co., Tampa, Fla.
Kahn, Albert, Associated Architects & Engineers, Inc., Detroit, Mich.
Kamen Supply Co., Inc., Wichita, Kans.
Kansas State College, Department of Architecture, Manhattan, Kans.
Keich & O'Brien, Warren, Ohio.
Kelley, Frederic P., Millington, N. J.
Kelly, Frank P., & Son, Binghamton, N. Y.
Kiefaber, W. H., Co., The, Hamilton, Ohio.
Kohler Co., Kohler, Wis.
Koller Bros. Co., The, Cleveland, Ohio.
Kyle, Herbert S., Charleston, W. Va.
La Crosse Plumbing Supply Co., La Crosse, Wis.
Lansing Supply Co., Lansing, Mich.
Larew Co., Iowa City, Iowa.
Latenser, John, & Sons, Omaha, Nebr.
Law, Law, Potter & Nystrom, Madison, Wis.
Levine, Ernest, New Brunswick, N. J.
Levine, Samuel, New York, N. Y.
Levy, Will, St. Louis, Mo.
Loeb, Laurence M., White Plains, N. Y.
Long Supply Co., Chicago, Ill.
Lorenz Co., Klamath Falls, Oreg.
Magney, Tusler & Setter, Minneapolis, Minn.
Malone Plumbing Supply Co., Pittsburgh, Pa.
Mann & Co., Hutchinson, Kans.
Marshall-Wells Co., Portland, Oreg.
Martin, Edgar, Chicago, Ill.
Mason, George D., & Co., Detroit, Mich.
Master Plumber & Heating Contractor (a Publication), Brooklyn, N. Y.
Mauran, Russell, Crowell & Mullgardt, St. Louis, Mo.
May Co. Wholesale Plumbing, Heating & Mill Supplies, Moline, Ill. (General support.)
May Supply Co., Anderson, Ind.
McArdle & Cooney, Inc., Philadelphia, Pa.
McArdle & Walsh, Inc., Baltimore, Md.
McAuliffe & Burke Co., Boston, Mass.
McClung, C. M. & Co., Knoxville, Tenn.
McGowin Lyons Hardware & Supply Co., Mobile, Ala.
Mechanical Construction Corp., Hibbing, Minn.
Memphis Plumbing & Heating Supply Co., Memphis, Tenn.
Mesher Supply Co., Portland, Oreg.
Meyer, F. & J., New York, N. Y.
Michigan Supply Co., Lansing, Mich.
Mid-West Supply Co., Chicago, Ill.
Miller Supply Co., Chicago, Ill.
Miller & Vrydagh, Terre Haute, Ind.
Mineola Plumbing Supply Co., Inc., Mineola, N. Y.
Miner Supply Co., Red Bank, N. J.
Missoula Mercantile Co., Missoula, Mont.
Monroe Co., Boston, Mass.
Moore Dry Dock Co., Oakland, Calif.
Mooser, William, San Francisco, Calif.
Moran, Clifford, Plumbing & Heating Co., Highland Park, Ill.
Morrison Supply Co., Ft. Worth, Tex.
Mott Bros. Co., Rockford, Ill.
Mott Co. of Pennsylvania, Philadelphia, Pa.
Muhlenberg Bros., Reading, Pa.
Murphy Supply Co., Green Bay, Wis.
National Plumbing Fixture Corp., Ellwood City, Pa., and Columbus, Ohio.
Nebraska, University of, Lincoln, Nebr.
Nelson, Albert L., St. Louis, Mo.
Nelson Co., Detroit, Mich.
Nelson, N. O., Co., Memphis, Tenn., and Pueblo, Colo.
New Jersey Engineering & Supply Co., Passaic, N. J.
Noonan, Addis E., Associates, San Antonio, Texas.
North Side Plumbing & Heating Co., Indianapolis, Ind.
O'Donnell, Val J., Co., Worcester, Mass.
Officer, Gwynn, Lafayette, Calif.
Oklahoma, University of, Norman, Okla.
Orlowitz, Louis B., Co., Inc., Philadelphia, Pa.
O'Rourke, W. R., Plumbing & Heating Co., Walla Walla, Wash.
Pacific Plumbing & Heating Supply Co., San Francisco, Calif.
Park & McKay, Inc., Detroit, Mich.
Pattison, W. M., Supply Co., The, Cleveland, Ohio.
Patzig Testing Laboratories, Des Moines, Iowa
Peerless Colorado Co., Denver, Colo.
Peerless-Oklahoma Co., Oklahoma City, Okla.
Pehrson, G. A., & Associates, Spokane, Wash.
Pennsylvania Hospital, Philadelphia, Pa.
Pepper, Geo. W., Jr., Philadelphia, Pa.
Piscitelli, Dominic J., Westbury, N. Y.
Plumbers & Factory Supplies, Inc., Columbus, Ohio.
Plumbers' Supply Co., New Bedford, Mass.
Plumbers Supply Co., Louisville, Ky.
Plumbers Supply Co. of St. Louis, St. Louis, Mo.
Plumbing & Heating Supply Co., Inc., Ft. Wayne, Ind.
Powell Plumbing & Heating, Colfax, Wash.
Powell Plumbing & Heating, Oklahoma City, Okla.
Quincy City Hospital, Quincy, Mass.
Ral Supply Co., Passaic, N. J.
Rayl Co., The, Detroit, Mich.
Reading Foundry & Supply Co., Reading, Pa.
Reddington Supply Co., Scranton, Pa.
Redmond, Geo., Co., The, Cleveland, Ohio.
Reese & Co., Coudersport, Pa.
Reeves-Wiedeman Co., Kansas City, Mo.
Reid, William H., Jr., Billings, Mont.
Rensselaer Polytechnic Institute, Troy, N. Y.
Resnikoff, Abraham, New York, N. Y.
Rhode Island Supply & Engineering Co., Providence, R. I.
Rhodes, Harry A., Rensselaer, N. Y. (General support.)
Richmond Radiator Co., New York, N. Y.

Riggs, Lutah Maria, Santa Barbara, Calif.
Riverside Supply Co., Inc., Evansville, Ind.
Robert & Co., Associates, Inc., Atlanta, Ga.
Roberts-Hamilton Co., Minneapolis, Minn.
Robertson Plumbing Co., Mineral Wells, Tex.
Rochester, City of, Board of Education, Rochester, N. Y.
Rodgers Supply Co., McKees Rocks, Pa.
Roosevelt, W. A., Co., La Crosse, Wis.
Rundle Manufacturing Co., Milwaukee, Wis.
Sales, Murray W., & Co., Flint, Mich.
Sanitary Plumbing Co., Redlands, Calif.
Schaefer Plumbing Supply Co., Inc., Buffalo, N. Y.
Schulte Plumbing & Heating Co., The, Joplin, Mo.
Scoville Manufacturing Co., Waterville Division, Waterville, Conn. (General support.)
Sears Roebuck & Co., Chicago, Ill.
Seashore Supply Co., Atlantic City, N. J.
Seekell, H. H., Ypsilanti, Mich.
Selck, Walter E., & Co., Chicago, Ill.
Sembower, J. M., Pittsburgh, Pa.
Shivers, W. M., Plumbing Supply Co., Houston, Tex.
Sidells, Arthur F., Warren, Ohio.
Simpson, W. H., Inc., Olean, N. Y.
Sirrine, J. E., Co., Greenville, S. C.
Sleeper, Harold R., New York, N. Y.
Southern Supply Co., Jackson, Tenn.
Southside Plumbing & Heating Maintenance, Freeport, N. Y.
Spangler & Wittheoft, Redding, Calif.
Specification Record, Chicago, Ill.
Spiers, Archie & Allen, Newport News, Va.
Standard Supply Co., The, Portsmouth, Ohio.
Star Plumbing & Heating Supply Co., Yonkers, N. Y.
Starr Co., The, Klamath Falls, Oreg.
Staub & Rather, Houston, Tex.
Sterner, Edwin, Co., Flint, Mich.
Stoetzel, Ralph, Chicago, Ill.
Stravs, Carl B., Minneapolis, Minn.
Streeter, D. D., Brooklyn, N. Y.
Suiter, H. A., Plumbing Co., Oskaloosa, Iowa.
Sullivan County Plumbing & Heating Supply Co., Inc., Liberty, N. Y.
Swank Hardware Co., The, Johnstown, Pa.
Sweet's Catalog Service, New York, N. Y. (General support.)
Tallman Co., St. Louis, Mo.
Tay-Holbrook, Inc., San Francisco, Calif.
Taylor, Ellis Wing, Los Angeles, Calif.
Taylor, Ellery Kirke, Haddonfield, N. J.
Temple, Seth J.—Arthur Temple, Davenport, Iowa.
Texas Technological College, Department of Architecture, Lubbock, Tex. (General support.)
Thompson-Durkee Co., Allston, Mass.
Thorne, Henry Calder, Ithaca, N. Y.
Thorn, Louis F., Yonkers, N. Y.
Tomlinson Co., Inc., Richmond, Va.
Trant, Thomas, & Bro., Inc., Hartford, Conn.
Treaty Co., The, Greenville, Ohio.
Triangle Wholesale Supply, Inc., Muncie, Ind.
Trimble & Lutz Supply Co., Wheeling, W. Va.
Umbenhauer, Wm. E., Newark, N. J.
U. S. Supply Co., Omaha, Nebr.
U. S. Supply Co., Kansas City, Mo.
U. S. Supply Co., Wichita, Kans.
United States Testing Co., Inc., Hoboken, N. J.
Universal Sanitary Manufacturing Co., New Castle, Pa. (General support.).
Valley Supply Corp., Neenah, Wis.
Van Camp Hardware & Iron Co., Indianapolis, Ind.
Van Denberg Supply Co., Rockford, Ill.
Virginia Polytechnic Institute, Blacksburg, Va. (General support.)
Voell Co., Washington, D. C.
Vogel, Willis A., Toledo, Ohio.
Wagner, Michael, & Sons, Chicago, Ill.
Weatherhead Co., The, Cleveland, Ohio.
Webb, F. W., Manufacturing Co., Boston, Mass.
Weber, C. L., & Co., Inc., Philadelphia, Pa.
Weeks, Ralph E., Co., Scranton, Pa.
Weeks, John, & Son Co., Watertown, N. Y.
Welch, Carroll E., Huntington N. Y.
Welker Supply Co., The, Cleveland, Ohio.
West, Albert E., Boston, Mass.
Western Maryland Supply Corp., Hagerstown, Md.
Western Metal Supply Co., San Diego, Calif.
Western Supply Co., Lincoln, Nebr.
Westwater Supply Co., The, Columbus, Ohio.
Whitney & Ford Co., Chicago, Ill.
Wight & Wight, Kansas City, Mo.
Wilkins Pipe & Supply Co., Peoria, Ill.
Wisconsin River Supply Co., Wausau, Wis.
Wolverine Brass Works, Grand Rapids, Mich. (General support.)
Wood, Edward J., & Son, Clarksburg, W. Va.
Woolcock Plumbing & Heating Co., Niagara Falls, N. Y.
Worthen, A. B., Co., Methuen, Mass.
Worthington, Geo., Co., The, Cleveland, Ohio.
Wright & Wright, Detroit, Mich. (General support.)
Zimmer Supply Co., Youngstown, Ohio.
Zimmerman, A. C., Los Angeles, Calif.
Zimmerman Plumbing Supply Co., Inc., Staten Island, N. Y.

UNITED STATES GOVERNMENT

Agriculture, Department of, Division of Purchase, Sales & Traffic, Washington, D. C.
Army, Department of the, Washington, D. C.
Housing & Home Finance Agency, Washington, D. C.
Interior, Department of the, National Capital Parks, Washington, D. C.
Interior, Department of the, Office of Indian Affairs, Washington, D. C.
Justice, Department of, Bureau of Prisons, Washington, D. C.
Public Housing Administration, Chicago, Ill.
Navy Department, Bureau of Yards & Docks, Washington, D. C.
Veterans' Administration, Washington, D. C.

COMMERCIAL STANDARDS

Item

CS No.

0-40. Commercial standards and their value to business (third edition).
1-42. Clinical thermometers (third edition).
2-30. Mopsticks.
3-40. Stoddard solvent (third edition).
4-29. Staple porcelain (all-clay) plumbing fixtures.
5-46. Pipe nipples; brass, copper, steel and wrought-iron (second edition).
6-31. Wrought-iron pipe nipples (second edition). Superseded by CS5-46.
7-29. Standard weight malleable iron or steel screwed unions.
8-41. Gage blanks (third edition).
9-33. Builders' template hardware (second edition).
10-29. Brass pipe nipples. Superseded by CS5-46.
11-41. Moisture regains of cotton yarns (second edition).
12-40. Fuel oils (fifth edition).
13-44. Dress patterns (fourth edition).
14-43. Boys' button-on waists, shirts, junior and sport shirts (made from woven fabrics) (third edition).
15-46. Men's pajama sizes (made from woven fabrics) (third edition).
16-29. Wall paper.
17-47. Diamond core drill fittings (fourth edition).
18-29. Hickory golf shafts.
19-32. Foundry patterns of wood (second edition).
20-47. Staple vitreous china plumbing fixtures (fourth edition).
21-39. Interchangeable ground-glass joints, stopcocks, and stoppers (fourth edition).
22-40. Builders' hardware (nontemplate) (second edition).
23-30. Feldspar.
24-43. Screw threads and tap-drill sizes.
25-30. Special screw threads. Superseded by CS24-43.
26-30. Aromatic red cedar closet lining.
27-36. Mirrors (second edition).
28-46. Cotton fabric tents, tarpaulins, and covers (second edition).
29-31. Staple seats for water-closet bowls.
30-31. Colors for sanitary ware. (Withdrawn as commercial standard March 15, 1948.)
31-38. Wood shingles (fourth edition).
32-31. Cotton cloth for rubber and pyroxylin coating.
33-43. Knit underwear (exclusive of rayon) (second edition).
34-31. Bag, case, and strap leather.
35-47. Hardwood plywood (third edition).
36-33. Fourdrinier wire cloth (second edition).
37-31. Steel bone plates and screws.
38-32. Hospital rubber sheeting.
39-37. Wool and part wool blankets (second edition). (Withdrawn as commercial standard, July 14, 1941.)
40-32. Surgeons' rubber gloves.
41-32. Surgeons' latex gloves.
42-43. Structural fiber insulating board (third edition).
43-32. Grading of sulphonated oils.
44-32. Apple wraps.
45-47. Douglas fir plywood (seventh edition).

CS No.

46-40. Hosiery lengths and sizes (third edition).
47-34. Marking of gold-filled and rolled-gold-plate articles other than watchcases.
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.
56-41. Oak flooring (second edition).
57-40. Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings (second edition).
58-36. Woven elastic fabrics for use in overalls (overall elastic webbing).
59-44. Textiles—testing and reporting (fourth edition).
60-48. Hardwood dimension lumber (second edition).
61-37. Wood-slat venetian blinds.
62-38. Colors for kitchen accessories.
63-38. Colors for bathroom accessories.
64-37. Walnut veneers.
65-43. Methods of analysis and of reporting fiber composition of textile products (second edition).
66-38. Marking of articles made wholly or in part of platinum.
67-38. Marking articles made of karat gold.
68-38. Liquid hypochlorite disinfectant, deodorant, and germicide.
69-38. Pine oil disinfectant.
70-41. Phenolic disinfectant (emulsifying type) (second edition) (published with CS71-41).
71-41. Phenolic disinfectant (soluble type) (second edition) (published with CS70-41).
72-38. Household insecticide (liquid spray type).
73-48. Old growth Douglas fir, Sitka spruce, and Western hemlock standard stock doors (fourth edition).
74-39. Solid hardwood wall paneling.
75-42. Automatic mechanical draft oil burners designed for domestic installations (second edition).
76-39. Hardwood interior trim and molding.
77-48. Enameled cast-iron plumbing fixtures (second edition).
78-40. Ground-and-polished lenses for sun glasses (second edition) (published with CS79-40).
79-40. Blown, drawn, and dropped lenses for sun glasses (second edition) (published with CS78-40).
80-41. Electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor vehicle laws (after market).

CS No.
81–41. Adverse-weather lamps for vehicles (after market).
82–41. Inner-controlled spotlamps for vehicles (after market).
83–41. Clearance, marker, and identification lamps for vehicles (after market).
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.
100–47. Porcelain-enameled steel utensils (third edition).
101–43. Flue-connected oil-burning space heaters equipped with vaporizing pot-type burners.
102– . (Reserved for Diesel and fuel-oil engines.)
103–48. Rayon jacquard velour (with or without other decorative yarn) (second edition).
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.
106–44. Boys' pajama sizes (woven fabrics) (second edition).
107–45. Commercial electric-refrigeration condensing units (second edition). (Withdrawn as commercial standard September 4, 1947.)
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.

CS No.
113–44. Oil-burning floor furnaces equipped with vaporizing pot-type burners.
114–43. Hospital sheeting for mattress protection.
115–44. Porcelain-enameled 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.
(E) 119–45.[1] Dial indicators (for linear measurements).
120–46. Standard stock ponderosa pine doors (second edition).
121–45. Women's slip sizes (woven fabrics).
122–45. Western hemlock plywood.
123–45. Grading of diamond powder.
(E) 124–45.[1] Master disks.
125–47. Prefabricated homes (second edition).
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).
129–47. Materials for safety wearing apparel (second edition).
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.
134–46. Cast aluminum cooking utensils (metal composition).
135–46. Men's shirt sizes (exclusive of work shirts).
136–46. Blankets for hospitals (wool, and wool and cotton).
137–46. Size measurements for men's and boys' shorts (woven fabrics).
138–47. Insect wire screening.
139–47. Work gloves.
140–47. Testing and rating convectors.
141–47. Sine bars, blocks, plates, and fixtures.
142–47. Automotive lifts.
143–47. Standard strength and extra strength perforated clay pipe.
144–47. Formed metal porcelain enameled sanitary ware.
145–47. Testing and rating hand-fired hot-water-supply boilers.
146–47. Gowns for hospital patients.
147–47. Colors for molded urea plastics.
148–48. Men's circular flat and rib knit rayon underwear.
149–48. Utility type house dress sizes.

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.

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

U. S. GOVERNMENT PRINTING OFFICE: 1948