

**U.S. DEPARTMENT OF COMMERCE**

DANIEL C. ROPER, Secretary

**NATIONAL BUREAU OF STANDARDS**

LYMAN J. BRIGGS, Director

**BINDERS BOARD**  
**FOR BOOKBINDING AND OTHER PURPOSES**

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**COMMERCIAL STANDARD CS50-34**

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[Issued November 2, 1934]

Effective Date for New Production, October 1, 1934



**A RECORDED STANDARD OF THE INDUSTRY**

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Approved by the American Standards Association  
as American Standard CS50-34

UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1934

## PROMULGATION STATEMENT

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On April 19, 1934, at the instance of the Binders Board Manufacturers Association, a final joint conference of representative manufacturers and users of binders board for bookbinding and other purposes adopted Commercial Standard CS50-34 for this commodity. The industry has since accepted and approved for promulgation by the United States Department of Commerce through the National Bureau of Standards the standard as shown herein.

The standard became effective for new production October 1, 1934.

Promulgation recommended.

I. J. Fairchild,  
*Chief, Division of Trade Standards.*

Promulgated.

Lyman J. Briggs,  
*Director, National Bureau of Standards.*

Promulgation approved.

Daniel C. Roper,  
*Secretary of Commerce.*

# BINDERS BOARD FOR BOOKBINDING AND OTHER PURPOSES

## COMMERCIAL STANDARD CS50-34

### SCOPE

1. *Definition.*—For the purpose of establishing definite specifications for binders board, this general definition is accepted:  
A single-ply, solid board made on a wet machine from a base stock of mixed papers, kiln or plate dried, and ranging in thickness from 30 points (0.030 inch) to 300 points (0.300 inch).

### GENERAL REQUIREMENTS

#### SURFACE

2. Binders board shall be free from surface lumps and reasonably smooth and flat; the usable portion of the sheet shall be reasonably free from all clip indentations and other mechanical imperfections.

#### DESIGNATION

3. Binders board is sold by weight; the size and thickness being specified. The weight is to be net weight, including trim. The specified size of the board, expressed in inches, is exclusive of trim. Thickness is expressed either in points or in parts of an inch, a point being one-thousandth part of an inch. The bursting strength is expressed in pounds per square inch pressure, and the density in grams per cubic centimeter.

#### STANDARD BUNDLE WEIGHT

4. Binders board shall be put up in bundles, the standard bundle weighing 50 pounds, including trim allowance. A tolerance of 3 pounds over or under the standard weight shall be allowed.

#### DIRECTION OF GRAIN

5. Unless the direction of grain is otherwise specified by the purchaser, the grain will be understood to run parallel to the direction of the second dimension of area.

### DETAIL REQUIREMENTS

6. Binders board shall meet the requirements as given in tables 1 and 2, as well as the requirements which refer to physical qualities, methods of test, etc.; all tests being made according to the methods herein described.

#### STANDARD SIZES

7. The standard sizes of binders board shall be those adopted from time to time and published as a simplified practice recommendation by the National Bureau of Standards, United States Department of Commerce, or any other nationally recognized standardizing body.<sup>1</sup>

<sup>1</sup> See Simplified Practice Recommendation R31-28.

## COLOR, DENSITY, AND TRIM

8. *Color*.—The natural pulp color, without the addition of coloring matter, shall be regarded as standard.

9. *Density*.—The density of individual sheets of binders board shall be not less than 0.8 nor more than 1.0 gram per cubic centimeter.

10. *Trim*.—An overage of ½-inch minimum to 1-inch maximum of the ordered size shall be provided on both dimensions for trim.<sup>2</sup>

## THICKNESS, BURSTING STRENGTH, AND FLEXURAL PROPERTIES

11. The thickness, bursting strength, and flexural properties (see paragraph 18) of binders board shall conform to the requirements given in table 1.

## THICKNESS TOLERANCE

12. A variation of 0.003 inch (3 points) above or below the specified thickness is permitted on boards to and including 0.120 inch in thickness. A variation of 5 percent above or below the specified thickness is permitted on boards over 0.120 inch in thickness. On boards over 32 inches in the shorter dimension of area, an additional tolerance of 50 percent of the above amounts is allowed.

TABLE 1.—*Thickness, bursting strength, and flexural properties*

Thickness, nominal		Bursting strength, minimum	Flexural properties			
			Breaking load, mini- mum		Deflection at rup- ture, minimum	
			Length- wise	Crosswise	Length- wise	Crosswise
<i>In.</i>	<i>Points</i>	<i>Lb / In.<sup>2</sup></i>	<i>Lb</i>	<i>Lb</i>	<i>In.</i>	<i>In.</i>
0.050	50	210	1.5	1.1	0.22	0.34
.058	58	235	2.1	1.6	.22	.34
.065	65	255	2.5	1.9	.22	.34
.070	70	275	2.8	2.1	.22	.34
.075	75	295	3.3	2.4	.22	.34
.080	80	315	3.8	2.8	.22	.34
.088	88	350	4.4	3.3	.22	.34
.098	98	385	5.1	3.8	.22	.34
.110	110	425	5.6	4.3	.22	.34
.120	120	450	6.0	4.7	.22	.34

## METHODS OF SAMPLING AND TESTING

13. *Sampling for tests*.—The test sample used for making thickness, density, and bursting strength determinations shall consist of 10 specimens cut 10 by 10 inches, each specimen being cut from a different board. Where a delivery consists of less than 30 bundles, not less than 3 bundles shall be sampled. On all deliveries of 30 bundles or more, at least 10 percent of the bundles shall be sampled, except where a delivery consists of more than 100 bundles, in which event 10 bundles shall be sampled.

14. *Control testing*.—For ordinary control testing, the prevailing temperature and humidity conditions are satisfactory. In controversial cases the specimens shall be tested at 70° F and at 50 percent to 65 percent relative humidity after being exposed to this condition for 72 hours. Such tests may be made in any accredited commercial testing laboratory satisfactory to both buyer and seller.

<sup>2</sup> Caution.—On board over 0.080 inch (80 points) thick, if additional trim is required for rotary cutting, purchaser should order board of sufficient size to provide such extra trim.

15. *Thickness.*—Twenty readings shall be made, 2 on each of the 10 test specimens cut 10 by 10 inches. Each of the 20 individual readings shall not vary over 0.003 inch above or below the designated nominal thickness. In test reports thickness shall be expressed in decimal parts of an inch.

16(a). *Density.*—The density is computed from the thickness and the weight per unit area. The latter is determined by measuring the dimensions of each of the 10 test specimens used for the thickness determination to an accuracy of 0.1 inch, and weighing each specimen separately in grams. The density is computed according to the following formula:

$$\text{Density (grams per cubic centimeter)} = \frac{\text{Weight of 1 test specimen in grams}}{\left[ \text{Area of test specimen in square inches} \right] \times \left[ \text{Thickness of test specimen in decimal parts of an inch} \right] \times 16.39.}$$

16(b). The density of each of the individual test specimens shall fall between the limits prescribed for minimum-maximum density under paragraph 9.

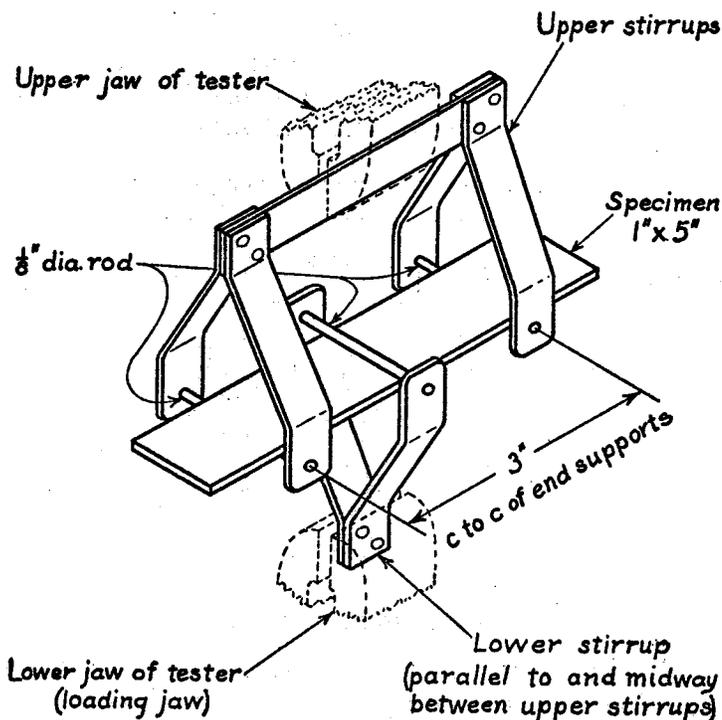


FIGURE 1.—Tensile testing machine attachment for determining flexural properties of binders board.

17. *Bursting strength.*—In determining the bursting strength, 20 bursts shall be made, one on each side of the 10 test specimens. The average of the 20 bursts shall be reported as the average bursting strength. The average bursting strength shall not be lower than the figures given under specific requirements for the designated nominal thickness.

18(a). *Flexural properties.*—The flexural properties shall be determined with a tensile testing machine, using an attachment by means of which a load is applied with the loading clamp to the specimen at midspan between 2 parallel supports 3 inches, apart suspended from the upper clamp of the tester. (See fig. 1.) The ends of the

test specimen shall be equidistant from the supports. The load is applied to the board at the rate of 12 inches per minute. The load in pounds required to break the specimen is recorded as breaking load and the deflection in inches at rupture is recorded as deflection at rupture (a recording device should be provided for convenience in measuring deflection).

18(b). Ten test specimens, 1 by 5 inches, shall be cut in each direction of the board and tested for flexural properties. Two results shall be reported for breaking load; the average of the 10 tests on samples cut lengthwise, and the average of the 10 tests on samples cut crosswise. These averages shall not fall below the corresponding figures for breaking load given in table 1 for the designated nominal thickness. Two results shall be reported for deflection at rupture; the average of the 10 tests on samples cut lengthwise, and the average of the 10 tests on samples cut crosswise. These averages shall not fall below the corresponding figures for deflection at rupture given in table 1 for the designated nominal thickness.

#### CALCULATION OF NUMBER OF SHEETS PER BUNDLE OR PER TON

19. To estimate the number of sheets of binders board of any given size in any of the thicknesses in a bundle or ton, divide the square inches per bundle or per ton as listed in table 2 for the given thickness by the area of the sheet desired, without any allowance for trim.

TABLE 2.—Area per bundle or per ton

Thickness	Per bundle	Per ton (2,000 lb)
<i>Inch</i>	<i>Inches<sup>2</sup></i>	<i>Inches<sup>2</sup></i>
0.050	29,120	1,164,800
.058	25,103	1,004,120
.065	22,400	896,000
.070	20,800	832,000
.075	19,413	776,520
.080	18,200	728,000
.088	16,545	661,800
.098	14,857	594,280
.110	13,236	529,440
.120	12,133	485,320

#### GUARANTEE LABEL

20. The following illustrates the guarantee statement used by the Binders Board Manufacturers Association, which is applied by rubber stamp to one outside sheet of each bundle.



The \_\_\_\_\_ Company, manufacturer, certifies that this binders board of \_\_\_\_\_ thickness and \_\_\_\_\_ size complies with all requirements specified in Commercial Standard CS50-34, issued by the United States Department of Commerce, and approved by the American Standards Association. The liability of the manufacturer shall be limited to replacement of board before it has been cut.

LAMINATED BINDERS BOARD

21. Laminated binders board is a board made by laminating 2 or more sheets of binders board.

EFFECTIVE DATE

The standard became effective for new production October 1, 1934.

STANDING COMMITTEE

The following comprises the membership of the standing committee, which is to review, prior to circulation for acceptance, proposed revisions to keep the standard abreast of progress. Each association nominated its own representatives:

*Binders Board Manufacturers' Association:*

John A. Dodd, Chairman, the Davey Co.

Dayton O. Trubee, Fandango Mills.

Caroline L. Lloyd, Binders Board Manufacturers Association.

*Book Manufacturers' Institute:*

E. W. Palmer, Kingsport Press.

F. R. Blaylock, Research Associate, U.S. Government Printing Office.

Raymond E. Baylis, Eugene C. Lewis Co.

*National Association of Book Publishers:* John Benbow, Longmans, Green & Co.

HISTORY OF PROJECT

On October 14, 1931, at the request of the Binders Board Manufacturers Association, a general conference of representative producers, distributors, and users of binders board, referred the then proposed commercial standard to a joint committee of the Binders Board Manufacturers Association and the Research Committee of the Book Manufacturers' Institute for harmonization of some unsettled requirements.

Several meetings of the joint committee were held and finally on April 19, 1934, all items were harmonized and circulation of the recommended standard to manufacturers and consumers for written acceptance was approved. Official acceptances estimated to represent a satisfactory majority of production by volume having been received, and in the absence of active opposition, a circular letter dated July 25, 1934, was issued to the trade announcing successful completion of the standard as a guide for the specification, production, and acceptance of binders board. This Commercial Standard meets with the complete approval of the Book Manufacturers Institute and the Binders Board Manufacturers Association.

AMERICAN STANDARD

This Commercial Standard was approved as American Standard CS50-34 by the American Standards Association on October 29, 1934.



## TO THE ACCEPTOR

The following points are given in answer to the usual questions arising in connection with the acceptance form:

1. Commercial standards are commodity specifications voluntarily established by mutual consent of the industry. 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 industry as a whole, their provisions through usage soon become established as trade customs.

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 function performed by the Department of Commerce in the establishment of a commercial standard is fourfold; first, to act as an unbiased coordinator to bring all branches of the industry 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; and fourth, to add all possible prestige to the enterprise by publication and promulgation when accepted by the industry.

When the standard has been endorsed by companies representing a satisfactory majority of production, the success of the project is announced. If, however, in the opinion of the standing committee of the industry or the United States Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

## ACCEPTORS

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(Individuals and organizations listed below have indicated, in writing, acceptance of this specification as their standard of practice, but such endorsement does not signify that they may not find it necessary to deviate from the standard, or that they guarantee all their products to conform to the requirements of this standard).

### ASSOCIATION

American Baptists Publication Society, Philadelphia, Pa.  
 American Child Health Association, New York, N.Y. (in principle).  
 Bible Institute Colportage Association, The, Chicago, Ill.  
 Binders Board Manufacturers' Association, New York, N.Y.  
 Book Manufacturers' Institute, Inc., New York, N.Y.  
 Employing Bookbinders of America, New York, N.Y.  
 National Association of Book Publishers, New York, N.Y.  
 Southern Publishing Association, Nashville, Tenn.  
 State Historical Society of Wisconsin, Madison, Wis.

### FIRMS

Acco Products, Inc., Long Island City, N.Y.  
 Adams, Cushing & Foster, Inc., Boston, Mass.  
 Aldine Paper Co., New York, N.Y.  
 Allen Co., Thronton W., New York, N.Y.  
 Alling & Cory Co., The, Buffalo, N.Y.  
 Alling & Cory Co., The, New York, N.Y.  
 Altemus & Co., Inc., Philadelphia, Pa.  
 American Beauty Cover Co., Dallas, Tex.  
 American School of Home Economics, Chicago, Ill.  
 Anderson Book Bindery, Anderson, Ind.  
 Anderson Co., The W. H., Cincinnati, Ohio.  
 Andrews Co., O. B., Chattanooga, Tenn. (in principle).  
 Antietam Paper Co., Inc., Hagerstown, Md.  
 Appleton-Century Co., Inc., D., New York, N.Y. (in principle).  
 Arco Manifold Co., Inc., The, New York, N.Y.

Arvia Bindery, Chicago, Ill.  
 Augsburg Publishing House, Minneapolis, Minn.  
 Augustana Book Concern, Rock Island, Ill.  
 Baird & Bartlett Co., Boston, Mass.  
 Baker, Jones, Hausauer, Inc., Buffalo, N.Y.  
 Baldwin Paper Co., Inc., New York, N.Y.  
 Baldwin & Sons, A. C., Austin, Tex.  
 Banks Upshaw & Co., Dallas, Tex.  
 Barber's Sons, James S., Philadelphia, Pa.  
 Barrett Bindery Co., The, Chicago, Ill.  
 Bath Co., Ltd., M. L., Shreveport, La.  
 Battle Creek Sales Book Co., Inc., Battle Creek, Mich.  
 Bayne Co., The James, Grand Rapids, Mich.  
 Beacon Paper Co., St. Louis, Mo.  
 Beck-Nor Accounting System Co., Salina, Kans.  
 Beecher, Peck & Lewis, Flint, Mich.  
 Beil & Evans Co., The, Youngstown, Ohio.  
 Bellingham Bookbindery, So. Bellingham, Wash.  
 Berkheimer Mfg. Co., J. E., Tacoma, Wash. (in principle).  
 Bellows Reeve Co., Chicago, Ill.  
 Blackwell Wielandy Co., St. Louis, Mo.  
 Blake, Moffitt & Towne, San Francisco, Calif.  
 Bohn & Co., Inc., Chas. H., New York, N.Y.  
 Bonestell & Co., San Francisco, Calif.  
 Bookwalter-Ball-Greathouse Printing Co., Indianapolis, Ind.  
 Boston Bookbinding Co., Inc., Cambridge, Mass.  
 Bouer Paper Co., The, Milwaukee, Wis.  
 Bradley & Scoville, Inc., New Haven, Conn.  
 Brandt Printing & Binding Co., Manitowoc, Wis.  
 Braunstein & Son, Inc., Wm., New York, N.Y.

- Braunworth & Co., Inc., Brooklyn, N.Y.
- Brock & Rankin, Chicago, Ill.
- Brooklyn Dental Publishing Co., Brooklyn, N.Y.
- Brown & Son, James, Jersey City, N.J.
- Brown Printing & Binding Co., M. B., New York, N.Y.
- Buckeye Press, Inc., The, Mansfield, Ohio.
- Burgmeier Book Bindery, Inc., Chicago Ill.
- Burke & Gregory, Inc., Norfolk, Va.
- Burkert-Walton Co., Evansville, Ind.
- Burkhardt Co., The, Detroit, Mich.
- Butler Ward Co., The, New York, N.Y.
- Butte Paper Co., The, Butte, Mont.
- Byam Printing Co., The, North Adams, Mass.
- California Press, University of, Berkeley, Calif.
- Carpenter Paper Co. of Utah, Salt Lake City, Utah.
- Carter & Co., Inc., John, Hartford, Conn.
- Carter Paper Co., The, Springfield, Mass.
- Carter, Rice & Co. Corporation, Boston, Mass.
- Carter, Rice & Co. Corporation, San Francisco Division, San Francisco, Calif.
- Caxton Printers, Ltd., The, Caldwell, Idaho.
- Century Paper Co., Indianapolis, Ind.
- Champion Container Co., Inc., Philadelphia, Pa. (in principle).
- Chatfield Co., The Minotte E., New Haven, Conn.
- Chaucer Head Book Shop, Inc., The, New York, N.Y.
- Chemical Catalog Co., Inc., New York, N.Y.
- Chicago Press, The University of, Chicago, Ill.
- Church Co., William A., Ithaca, N.Y.
- Claffin & Co., Inc., W. H., Boston, Mass. (in principle).
- Clarke Press, The, Manchester, N.H.
- Clark Printing & Binding Co., Inc., W. R., New York, N.Y.
- Clark's Sons, John W., Philadelphia, Pa.
- Cleveland Book Binding Co., Cleveland, Ohio.
- Clinton Paper Co., Clinton, Iowa (in principle).
- Coast Envelope and Leather Products Co., Los Angeles, Calif.
- Cole Printing Co., Will H., Pittsburgh, Pa.
- Coleman Co., George, Boston, Mass.
- Collins' Sons, Inc., J. J., Chicago, Ill.
- Colonial Board Co., The, Manchester, Conn.
- Colorado, University of, Boulder, Colo.
- Commercial Paper Corporation, San Francisco, Calif.
- Commercial Press, Pittsburgh, Pa.
- Conkey Co., W. B., Hammond, Ind.
- Conolly Co., Henry, Rochester, N.Y.
- Consolidated Paper Co., Monroe, Mich.
- Continental Bank-Supply Co., Mexico, Mo.
- Cook Co., The Robert C., New York, N.Y.
- Cook Printshop, The Henry, Elizabeth, N.J.
- Co-operative Publishing Co., Guthrie, Okla.
- Copeland Co., Inc., Lewis, New York, N.Y.
- Cortright Paper Co. Div., Battle Creek, Mich.
- Cottrell Allen-Clarke, Inc., Detroit, Mich.
- Council on Foreign Relations, Inc., New York, N.Y. (in principle).
- Coy Hunt & Co., New York, N.Y.
- Cramer-Force Co., Inc., The, Rochester, N.Y.
- Crane & Co., Topeka, Kans.
- Crowell Co., Thomas Y., New York, N.Y.
- Curtiss Philosophic Book Co., The, Washington, D.C.
- Davey Co., The, Jersey City, N.J.
- Decatur Paper House, Inc., The, Decatur, Ill. (in principle).
- DeJonge & Co., Louis, Chicago, Ill.
- DeJonge & Co., Louis, New York, N.Y.
- Detroit Mailing & Binding Co., Detroit, Mich.
- Diem & Wing Paper Co., The, Cincinnati, Ohio.
- Dillingham's, Bangor, Maine.
- Dittus, Rudolph C., Teaneck, N.Y.
- Dixon & Co., Denver, Colo.
- Dixon & Co., Salt Lake City, Utah.
- Dodge Publishing Co., New York, N.Y.
- Donnelley & Sons Co., R. R., Chicago, Ill.
- Dudley Paper Co., Lansing, Mich. (in principle).
- Duluth Paper & Specialties Co., Duluth, Minn.
- Dura Binding Co., Marlboro, Mass.
- Dwight Bros. Paper Co., Milwaukee, Wis.
- Dyson Paper Board Co., Philadelphia, Pa.
- Eagle Printing & Binding Co., Pittsfield, Mass.
- Eagle Printing Co., Marinette, Wis.
- Economical Filing Co., Chicago, Ill.
- Educator Supply Co., Mitchell, S. Dak.
- Egging Book Bindery, New York, N.Y.
- Enderlin & Son, F., Newark, N.J.
- Engel & Son, H., Kansas City, Mo.
- Erickson Co., Wm. L., Chicago, Ill.
- Evangelical Press, Harrisburg, Pa.

- Ewing Paper Co., B. G., Spokane, Wash.
- Falconer Co., The, Baltimore, Md.
- Fandango Mills, Inc., Millburn, N.J.
- Faxon Loose Leaf Co., Philadelphia, Pa.
- Federbush Co., Inc., The, New York, N.Y.
- Fibreboard Products, Inc., San Francisco, Calif.
- Financial Publishing Co., Boston, Mass. (in principle).
- Finch & McCullough, Aurora, Ill.
- Flanigan-Pearson Co., Champaign, Ill.
- Flohr Co., Geo. A., Cincinnati, Ohio.
- Flynn, Inc., William F., St. Louis, Mo.
- Fort Hill Press, The, Boston, Mass.
- Fort Pitt Lithographing Co., Pittsburgh, Pa.
- Foulds & Co., The Wm., Manchester, Conn.
- Franklin & Charles, Lancaster, Pa.
- Franklin Printing Co., Inc., Newport News, Va.
- Franklin Publishing & Supply Co., Philadelphia, Pa. (in principle).
- Gammel's, Inc., Austin, Tex.
- Gane Bros. & Lane, Inc., Chicago, Ill.
- Gane Bros. & Lane, Inc., St. Louis, Mo.
- General Bookbinding Co., Cleveland, Ohio.
- Gilmartin Co., Inc., San Francisco, Calif.
- Ginn & Co., East Cambridge, Mass.
- Gotham-Ebert, Inc., New York, N.Y.
- Grabau Art Bookbinding Studio, John F., Buffalo, N.Y.
- Graham Paper Co., St. Louis, Mo.
- Grand Rapids Loose Leaf Binder Co., Grand Rapids, Mich.
- Grand Rapids Paper Co., Grand Rapids, Mich.
- Great Falls Paper Co., Great Falls, Mont.
- Griffin, Campbell, Hayes, Walsh, Inc., New York, N.Y.
- Grimm Book Bindery, Madison, Wis.
- Groneweg Printing Co., Dayton, Ohio (in principle).
- Grosset & Dunlap, Inc., New York, N.Y.
- Gruver Co., Edward F., Washington, D.C. (in principle).
- Gubitz & Sons, W. F., Glens Falls, N.Y.
- Guerney, Bernard Guilbert, New York, N.Y.
- Guide Printing Co., Inc., Brooklyn, N.Y.
- Hale, Cushman & Flint, Inc., Boston, Mass. (in principle).
- Hall, Norman F., San Francisco, Calif.
- Hall & McChesney, Inc., Syracuse, N.Y.
- Hampton Roads Paper Co., Norfolk, Va.
- Hano Co., Inc., Philip, Holyoke, Mass.
- Hano Paper Corporation, Long Island City, N.Y.
- Harcourt Bindery, The, Boston, Mass.
- Harcourt, Brace & Co., New York, N.Y. (in principle).
- Harper & Bros., New York, N.Y.
- Hartmann-Bruderlin Printing Co., The, Denver, Colo.
- Hartman Co., The, Philadelphia, Pa. (in principle).
- Hartung & Co., A., Philadelphia, Pa.
- Hassenfeld Bros., Inc., Providence, R.I.
- Heinn Co., The, Milwaukee, Wis.
- Heitman-Garand Co., Detroit, Mich.
- Herkimer Fibre Co., Herkimer, N.Y.
- Herman, Mandel, Book Bindery, Chicago, Ill.
- Hertzberg Bindery, Inc., Des Moines, Iowa.
- Hertzberg & Craftsmen, Arthur, Chicago, Ill.
- Hewitt & Bros., Inc., C. B., New York, N.Y.
- Heywood-Bookbinding Co., West Springfield, Mass.
- Hibberd Printing Co., Inc., South Bend, Ind.
- Hillig, Frank, St. Louis, Mo.
- Hine & Co., Edward, Peoria, Ill.
- Hobart Paper Co., Chicago, Ill.
- Holzer, Inc., U., Boston, Mass.
- Hopper Paper Co., Inc., Richmond, Va. (in principle).
- Hornig Ruling & Binding Co., Minneapolis, Minn.
- Horwitz Bros., Elmira, N.Y.
- Houck Bindery, D. M., Reading, Pa.
- Housh Co., Inc., The, Boston, Mass.
- Howard Publishing Co., Chicago, Ill.
- Hubbs & Co., Charles F., New York, N.Y.
- Hubbs & Hastings Paper Co., Rochester, N.Y.
- Hurley Bros., Bay City, Mich.
- Imperial Ruling & Binding Co., Pittsburgh, Pa.
- Import Paper Co., Chicago, Ill.
- Import Publications, Inc., New York, N.Y.
- Inland Printing Co., Springfield, Mo.
- International Textbook Press, Scranton, Pa.
- Irwin Paper Co., Quincy, Ill. (in principle).
- Jenkins, Inc., L. H., Richmond, Va.
- J. L. Bindery, Chicago, Ill.
- Johnson Publishing Co., Richmond, Va.
- Johnson Co., Inc., Wm. R., Seattle, Wash.
- Jontzen Printing Co., Cleveland, Ohio.
- Judy Publishing Co., Chicago, Ill.
- Kah-Patterson Printing Co., The, Portsmouth, Ohio.
- King Printing Co., Bristol, Tenn.
- Kingsport Press, Inc., Kingsport, Tenn.
- Knapp-Printing, Pittsburgh, Pa.

- Knight Bros. Paper Co., Jacksonville, Fla.  
 Kohlhaas Co., The, Chicago, Ill. (in principle).  
 Kolarik Bookbinding Co., Cedar Rapids, Iowa.  
 Kranz Co., W. H., Racine, Wis. (in principle).  
 Kroner & Co., Wm. F., Cincinnati, Ohio (in principle).  
 Kuenstner & Lucie Paper Co., Inc., New York, N.Y.  
 Lafayette Printing Co., Lafayette, Ind.  
 Languille & Co., V. J., Spokane, Wash.  
 Launder Bookbindery, New York, N.Y.  
 Laux & Co., A. J., Lockport, N.Y.  
 Law Co., Robert O., Chicago, Ill.  
 Lawrence Bindery Co., Lawrence, Mass.  
 Lee Co., The Wilson H., Orange, Conn.  
 Leland, Inc., Samuel R., New York, N.Y.  
 Leslie Paper Co., F.G., St. Paul, Minn.  
 Leslie Paper Co., The John, Minneapolis, Minn.  
 Lewis Co., Eugene C., New York, N.Y.  
 Library Bindery, St. Louis, Mo.  
 Linde Paper Co., J. E., New York, N.Y.  
 Linotype Printing Co., Memphis, Tenn.  
 Lippincott Co., J. B., Philadelphia, Pa.  
 Little Brown & Co., Cambridge, Mass.  
 Lloyd Co., W. G., Chicago, Ill.  
 Long-Johnson Printing Co., Jackson, Tenn.  
 Longmans, Green & Co., New York, N.Y.  
 Louisville Paper Co., Louisville, Ky.  
 Lutheran Book Concern, The, Columbus, Ohio.  
 Lyons & Carnahan, Chicago, Ill. (in principle).  
 Mack Printing Co., Easton, Pa.  
 Magee Bros. Co., The, Piqua, Ohio.  
 Majestic Paper Corporation, New York, N.Y.  
 Marvel Bindery Co., Inc., New York, N.Y.  
 Master-Craft Corporation, Kalamazoo, Mich.  
 Mathers Lamm Paper Co., Washington, D.C.  
 McBride & Co., Robert M., New York, N.Y.  
 McKee Printing Co., Butte, Mont.  
 McMillan Book Co., Syracuse, N.Y.  
 Mentzer, Bush & Co., Chicago, Ill.  
 Messinger Paper Co., Chicago, Ill.  
 Mexico Bank-Supply Co., Mexico, Mo.  
 Michigan, University of, Ann Arbor, Mich.  
 Midwest Publishers Co., Minneapolis, Minn.  
 Midwestern Paper Co., Kansas City, Mo. (in principle).  
 Millar & Co., Inc., Geo. W., New York, N.Y.  
 Miller Blank Book Co., Fred R., Williamsport, Pa.  
 Miller & Co., Henry A., Hoboken, N.J.  
 Miller-Davis Co., Minneapolis, Minn.  
 Miller-Kaimer Paper Co., Elizabeth, N.J.  
 Miller Press, The, Jacksonville, Fla.  
 Mississippi Valley Paper Co., St. Louis, Mo.  
 Mitchell Publishing Co., Mitchell, S.Dak.  
 Modern Library, Inc., New York, N.Y.  
 Monmouth Blank Book Co., Monmouth, Ill.  
 Monroe Paper Co., Inc., Monroe, Mich. (in principle).  
 Montag Bros., Inc., Atlanta, Ga. (in principle).  
 Moore & Co., Inc., Baltimore, Md.  
 Morehouse Publishing Co., Milwaukee, Wis.  
 Morton & Co., John P., Louisville, Ky.  
 Moser Paper Co., Chicago, Ill. (in principle).  
 Mosher, Mrs. Thomas Bird, Portland, Maine.  
 Murphy-Travis Co., Minneapolis, Minn.  
 Mutual Library Bindery, Inc., Syracuse, N.Y.  
 Myers & Co., Inc., R. M., Rochester, N.Y.  
 Nankervis Co., C. T., Indianapolis, Ind.  
 National Blank Book Co., Holyoke, Mass.  
 National Bureau of Economic Research, New York, N.Y.  
 National Library Bindery Co., East Cleveland, Ohio.  
 National Library Bindery Co., Indianapolis, Ind.  
 National Library Bindery Co., Philadelphia, Pa.  
 Nelson Printing and Stationery Co., St. Joseph, Mo.  
 Newman & Co., S. B., Knoxville, Tenn.  
 Newport News Overfold Co., Newport News, Va.  
 Nickerson & Collins Co., Chicago, Ill. (in principle).  
 North Carolina Press, University of, Chapel Hill, N.C.  
 North & Co., Jacob, Lincoln, Nebr.  
 Northwestern Bindery, The, Evanston, Ill.  
 Northwestern Press, The, Minneapolis, Minn.  
 Norton Co., The C. H., North Westchester, Conn.  
 Oberly & Newell, Inc., New York, N.Y.  
 Oconto Manufacturing Co., Chicago, Ill.  
 Ogilvie, J. S., Publishing Co., New York, N.Y.

- Old Dominion Paper Co., The, Norfolk, Va.  
 Old Dominion Press, Inc., Richmond, Va.  
 Orchard Paper Co., St. Louis, Mo.  
 Oregon, University of, Eugene, Oreg.  
 Otter River Mills, Inc., Otter River, Mass.  
 Oxford Book Co., Inc., New York, N.Y.  
 Pacific Coast Paper Co., Fresno, Calif.  
 Pacific Coast Publishing Co., Santa Barbara, Calif.  
 Pacific Library Binding Co., Los Angeles, Calif.  
 Palmer, E. C., & Co., Ltd., Tampa, Fla.  
 Palmer, E. C., & Co., Ltd., New Orleans, La.  
 Palmer Co., The, Boston, Mass.  
 Palmer, Lester W., Corporation, New York, N.Y.  
 Paper House of New England, The, Springfield, Mass. (in principle).  
 Paper Manufacturers Co., Inc., Philadelphia, Pa.  
 Paper Supply Co., The, Houston, Tex.  
 Paper Supply Co., The, Kansas City, Mo. (in principle).  
 Paragon Binder Corporation, New York, N.Y.  
 Parke, Davis & Co., Detroit, Mich.  
 Parker, C. A. A., Medford, Mass.  
 Parker Paper & Twine Co., High Point, N.C. (in principle).  
 Pease, C. F., Co., The, Chicago, Ill.  
 Peerless Album Co., Inc., New York, N.Y.  
 Peerless Printing Corporation, Marion, Ind. (in principle).  
 Pencil Points Press, Inc., New York, N.Y.  
 Penn Card & Paper Co., Inc., Philadelphia, Pa.  
 Peterson Lithograph & Printing Co., Omaha, Nebr.  
 Pill Bros. Co., Sioux City, Iowa (in principle).  
 Pioneer, Inc., Tacoma, Wash.  
 Plimpton Press, The, Norwood, Mass.  
 Port Huron Sulphite & Paper Co., Port Huron, Mich.  
 Portland Printing House, Inc., Portland, Oreg.  
 Prime, Charles H., Co., Inc., New York, N.Y. (in principle).  
 Princeton University Press, Princeton, N.J.  
 Prospect Press, Inc., New York, N.Y.  
 Provence, Jarrard & Martin, Greenville, S.C.  
 Pugh Printing Co., The A. H., Cincinnati, Ohio.  
 Queen City Paper Co., The, Cincinnati, Ohio.  
 Quincy Bookbinding, Quincy, Mass.  
 Reinhold Publishing Co., New York, N.Y.  
 Remington Rand, Inc., Buffalo, N.Y.  
 Riverside Paper Corporation, Appleton, Wis. (in principle).  
 Riverside Paper Manufacturing Co., Glastonbury, Conn.  
 Rogers, John C., Co., Inc., The, New York, N.Y.  
 Rohner Paper Co., The, Arkon, Ohio.  
 Rowland Paper Co., The, Louisville, Ky.  
 Royal Card & Paper Co., New York, N.Y.  
 Russell Sage Foundation, New York, N.Y.  
 Ruzicka, Joseph, Baltimore, Md.  
 San Antonio Paper Co., San Antonio, Tex.  
 Schiller Book Bindery, San Diego, Calif.  
 Schwarz Paper Co., Lincoln, Nebr.  
 Scribner Press, The, New York, N.Y.  
 Searcy & Pfaff, Ltd., New Orleans, La.  
 Seavey Co., The, Portland, Maine.  
 Scioto Paper Co., Columbus, Ohio.  
 Seeman Printery, Inc., The, Durham, N.C.  
 Service Bindery, Chicago, Ill.  
 Settlement Cook Book Co., The, Milwaukee, Wis.  
 Shelby Salesbook Co., The, Shelby, Ohio.  
 Shiner-Sien Paper Co., San Antonio, Tex.  
 Shryock Bros., Philadelphia, Pa.  
 Slade, Hipp & Meloy, Inc., Chicago, Ill.  
 Slingerland-Comstock Co., Ithaca, N.Y. (in principle).  
 Smith Printing Co., Williamsport, Pa.  
 Southern Publishing Co., The, Dallas, Tex.  
 Southwest Press, Inc., The, Dallas, Tex.  
 Southwestern Paper Co., Houston, Tex.  
 Southworth-Anthoensen Press, The, Portland, Maine.  
 Spokane Paper & Stationery Co., Spokane, Wash.  
 Springer, Walter G., Carthage, Mo.  
 Springfield Paper Co., Springfield, Mo.  
 Standard Bookbinding Co., Cleveland, Ohio.  
 Standard Diary Co., The, Cambridge (A), Mass.  
 Standard Paper Co., Milwaukee, Wis.  
 Stanford University Press, Stanford University, Calif.  
 Stanhope Bindery, Inc., Boston, Mass.  
 State Co., The, Columbia, S.C.  
 Stationers Loose Leaf Co., Milwaukee, Wis.  
 Stenglein Printing Co., Marquette, Mich.  
 Stewart Co., S. A., Pittsburgh, Pa.  
 Stikeman & Co., Inc., New York, N.Y.  
 Stockett-Fiske Co., The, Washington, D.C.

- Stokes Co., Frederick A., New York, N.Y.  
 Stoll & Westerlin, Chicago, Ill.  
 Stone & Co., Jos. J., Greensboro, N.C.  
 Stuart's Wilmington Bookbindery, Wilmington, Del.  
 Sutherland Binder & Punch Co., New York, N.Y.  
 Sweetman, Inc., Geo. H., Cambridge, Mass. (in principle).  
 Taylor & Greenough Co., The, Hartford, Conn. (in principle).  
 Technical Composition Co., Cambridge, Mass. (in principle).  
 Texas University Press, Austin, Tex.  
 Theosophical University Press, Point Loma, Calif.  
 Thornton-Levey Co., Indianapolis, Ind.  
 Tobey Fine Papers, Inc., St. Louis, Mo.  
 Todd Co., Inc., The, Rochester, N.Y.  
 Torch Press, The, Cedar Rapids, Iowa.  
 Traver Corporation, Chicago, Ill.  
 Triangle Bookbinding Co., Detroit, Mich.  
 Trimmer Printing Co., York, Pa.  
 Tri-State Wholesale Paper Co., Shreveport, La.  
 Trussell Manufacturing Co., Poughkeepsie, N.Y.  
 Tuttle Press Co., The, Appleton, Wis.  
 Union Bindery, New York, N.Y. (in principle).  
 Union of American Hebrew Congregations, Sinai Press, Cincinnati, Ohio.  
 Union of American Hebrew Congregations, Department of Synagogue and School Extension, Cincinnati, Ohio.  
 Union Paper Supply Co., Los Angeles, Calif.  
 United Bindery, New York, N.Y.  
 United Educators, Inc., Chicago, Ill.  
 Universal Bookbinding Co., Inc., New York, N.Y.  
 University Publishing Co., The, Lincoln, Nebr.  
 Uptown Bindery, Inc., New York, N.Y. (in principle).  
 Vail Ballou Press, Binghamton, N.Y.  
 Vanguard Press, Inc., The, New York, N.Y. (in principle).  
 van Male, John, Denver, Colo. (in principle).  
 Van Nostrand Co., Inc., D., New York, N.Y. (in principle).  
 Virginia Paper Co., Washington, D.C.  
 Wagenfuehr Bookbinding Co., F. A., St. Louis, Mo.  
 Waldorf Bindery Co., St. Paul, Minn.  
 Walker, Evans & Cogswell Co., Charleston, S.C.  
 Walker Co., Frank R., Chicago, Ill.  
 Walker Goulard Plehn Co., Inc., New York, N.Y.  
 Ward's Bindery, Seattle, Wash.  
 Ward, Davis & Dunn, Inc., Los Angeles, Calif.  
 Warne & Co., Inc., Frederick, New York, N.Y.  
 Washington Printing & Binding Co., Seattle, Wash.  
 Waterbury Printing Co., The, Waterbury, Conn.  
 Waverly Press, Inc., Baltimore, Md.  
 Webb Publishing Co., St. Paul, Minn.  
 Weise Binding Co., Cincinnati, Ohio.  
 Welsh-Richards Co., Inc., Aberdeen, Wash.  
 Wenatchee Printing Co., Wenatchee, Wash.  
 Wesby & Sons, J. S., Worcester, Mass.  
 Western Newspaper Union, Des Moines, Iowa.  
 Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.  
 Whitaker Paper Co., The, Chicago, Ill.  
 Whitaker Paper Co., The, Cincinnati, Ohio.  
 White Book House, Chicago, Ill.  
 White Sun Co., Boston, Mass.  
 Whitman & Co., Albert, Chicago, Ill.  
 Whitney Graham Co., Inc., The, Buffalo, N.Y.  
 Whitney Paper Co., Wichita, Kans.  
 Wilson-Jones Co., Chicago, Ill.  
 Wilson Paper Co., B. W., Richmond, Va.  
 World Book Co., Yonkers, N.Y.  
 Yakima Bindery & Printing Co., Yakima, Wash.  
 York Printing Co., The, York, Pa.  
 Youngstown Printing Co., Youngstown, Ohio.  
 Zellerbach Paper Co., San Francisco, Calif.  
 Zimmerman Co., E. F., Watsonville, Calif.  
 Zimmermann, E. F. W., Sheboygan, Wis.  
 Zimmermann, Wm. G., Newark, N.J. (in principle).
- U.S. GOVERNMENT DEPARTMENTS  
 U.S. Treasury, Washington, D.C.  
 Veterans' Administration, Washington, D.C.

## COMMERCIAL STANDARDS

CS	Item	CS	Item
0-30.	The commercial standards service and its value to business.	26-30.	Aromatic red cedar closet lining.
1-32.	Clinical thermometers (second edition).	27-30.	Plate glass mirrors.
2-30.	Mopsticks.	28-32.	Cotton fabric tents, tarpaulins, and covers.
3-28.	Stoddard solvent.	29-31.	Staple seats for water-closet bowls.
4-29.	Staple porcelain (all-clay) plumbing fixtures.	30-31.	Colors for sanitary ware.
5-29.	Steel pipe nipples.	31-33.	Wood shingles (second edition).
6-31.	Wrought-iron pipe nipples (second edition).	32-31.	Cotton cloth for rubber and pyroxylin coating.
7-29.	Standard weight malleable iron or steel screwed unions.	33-32.	Knit underwear (exclusive of rayon).
8-33.	Gage blanks (second edition).	34-31.	Bag, case, and strap leather.
9-33.	Builders' template hardware (second edition).	35-31.	Plywood.
10-29.	Brass pipe nipples.	36-33.	Fourdrinier wire cloth (second edition).
11-29.	Regain of mercerized cotton yarns.	37-31.	Steel bone plates and screws.
12-33.	Fuel oils (second edition).	38-32.	Hospital rubber sheeting.
13-30.	Dress patterns.	39-32.	Wool and part wool blankets.
14-31.	Boys' blouses, button-on waists, shirts, and junior shirts.	40-32.	Surgeons' rubber gloves.
15-29.	Men's pajamas.	41-32.	Surgeons' latex gloves.
16-29.	Wall paper.	42-32.	Fiber insulating board.
17-32.	Diamond core drill fittings (second edition).	43-32.	Grading of sulphonated oils.
18-29.	Hickory golf shafts.	44-32.	Apple wraps.
19-32.	Foundry patterns of wood (second edition).	45-33.	Douglas fir plywood.
20-30.	Staple vitreous china plumbing fixtures.	46-33.	Hosiery lengths.
21-34.	Interchangeable ground-glass joints, stop-cocks, and stoppers (second edition).	47-34.	Marking of gold-filled and rolled-gold-plate articles other than watch cases.
22-30.	Builders' hardware (nontemplate).	48-34.	Domestic burners for Pennsylvania anthracite (underfeed type).
23-30.	Feldspar.	49-34.	Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.
24-30.	Standard screw threads.	50-34.	Binders' board for bookbinding and other purposes.
25-30.	Special screw threads.		

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