

CS80-41

Direction-Signal-Systems, Electric (other than semaphore type);  
(for commercial and other vehicles).

**U. S. DEPARTMENT OF COMMERCE**

JESSE H. JONES, Secretary

**NATIONAL BUREAU OF STANDARDS**

LYMAN J. BRIGGS, Director

**ELECTRIC DIRECTION SIGNAL SYSTEMS  
OTHER THAN SEMAPHORE TYPE  
FOR COMMERCIAL AND OTHER VEHICLES  
SUBJECT TO SPECIAL MOTOR-VEHICLE LAWS  
(AFTER MARKET)**

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**COMMERCIAL STANDARD CS80-41**

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Effective Date for New Production from January 1, 1941



**A RECORDED VOLUNTARY STANDARD  
OF THE TRADE**

UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1940

PROMULGATION  
of  
COMMERCIAL STANDARD CS80-41  
for

ELECTRIC DIRECTION SIGNAL SYSTEMS OTHER THAN  
SEMAPHORE TYPE FOR COMMERCIAL AND OTHER  
VEHICLES SUBJECT TO SPECIAL MOTOR-VEHICLE LAWS  
(AFTER MARKET)

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On January 11 and 12, 1940, at the instance of the Safety Equipment Manufacturers Association, a general conference of representative manufacturers, distributors, regulatory officials, testing laboratories, and users of electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor-vehicle laws (after market) adopted a recommended commercial standard for this commodity. Those concerned have 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 is effective for new production from January 1, 1941.

Promulgation recommended.

I. J. Fairchild,

*Chief, Division of Trade Standards.*

Promulgated.

Lyman J. Briggs,

*Director, National Bureau of Standards.*

Promulgation approved.

Jesse H. Jones,

*Secretary of Commerce.*

# **ELECTRIC DIRECTION SIGNAL SYSTEMS OTHER THAN SEMA- PHORE TYPE FOR COMMERCIAL AND OTHER VEHICLES SUBJECT TO SPECIAL MOTOR-VEHICLE LAWS (AFTER MARKET) <sup>1</sup>**

## **COMMERCIAL STANDARD CS80-41**

### **EXPLANATORY**

As the art of motor-vehicle lighting is a continually developing one, these specifications are necessarily of a current character and are subject to revision from time to time. They are intended to apply primarily to sample equipments submitted by the manufacturer to the testing laboratory for original approval but may be applied to equipments purchased on the open market or to equipments taken at random from regular production. Should the first sample fail to pass one or more of the test requirements, two more samples may be tested, and, if two out of the three samples comply with each of the requirements, the equipment shall be considered to be satisfactory.

### **PURPOSE**

1. The purpose is to establish standard specifications and methods of test for electric direction signal systems (after market) for the guidance of manufacturers, distributors, and users.

### **SCOPE**

2. This standard covers the requirements and methods for construction, vibration and shock, dust, moisture, corrosion, reliability, and understandability tests of direction signals.

### **DEFINITIONS**

3. An electric direction signal system is an equipment used to indicate the intention of the operator of a vehicle to change direction.

4. The term "signaling unit" shall mean that part of the signaling system by which is indicated the direction in which the deviation or turn will be made.

5. The term "operating unit" shall mean that part of the signaling system by which the operator of a vehicle causes the signaling unit to indicate his intention to deviate or turn, commonly known as the switch.

<sup>1</sup> The term "after market" shall be construed to mean any equipment or device manufactured for accessory installation on a vehicle, provided, however, it shall not be construed to mean any equipment or device regularly installed on or furnished for new vehicles by the vehicle manufacturer, and provided further, that it shall not be construed to include genuine replacements of original equipment.

## GENERAL REQUIREMENTS

6a. The direction signal indication shall be yellow or amber only.

6b. A yellow or amber lens shall be a lens the color of which, under service conditions, employing a light source having the quality of International Commission on Illumination illuminant *A* (incandescent lamp at 2,848° K), has a value of  $y$  which is not greater than 0.429 nor less than 0.398, and a value of  $z$  not greater than 0.007,  $y$  and  $z$  being trichromatic coefficients derived on the basis of the 1931 ICI standard observer and coordinate system.

6c. Standard (1) light-limit and (2) dark-limit glasses, representing respectively (1) the pale and green limits and (2) the red limit for yellow lenses may be obtained from the Electrical Testing Laboratories, East End Avenue and 79th Street, New York City.

6d. A yellow lens shall not be acceptable if it is paler or greener than the light-limit standard, or redder than the dark-limit standard when the lens and the standards are illuminated by incandescent-lamp light.

7. Direction signal systems shall include four independent signaling units. The front units shall show both to front and rear. The units on the left side shall indicate the left turn and the units on the right side indicate the right turn.

8. Location of the directional signals shall be not less than 18 inches to the right and left from the center of the vehicle.

9. A double-faced unit, when subjected to external light rays from either in front or behind, at any or all angles, shall not give the appearance of being internally illuminated to such an extent as to be confusing.

10. The screws or other means provided for attaching the cover to the body of the unit shall be of stainless steel or nonferrous metal.

11. The direction shall be indicated by an arrow or similar means. The construction of such indicator shall be such that it cannot rotate from its proper position.

12. The outside surface of an arrow or other indicating design shall not be recessed below the surface of the opaqued area around it.

13. Suitable means shall be provided to prevent any unit from turning when mounted in position.

14. All wiring shall conform to SAE standard specifications known as type No. 2 or better, of electrical conductivity not less than the equivalent of No. 16 AWG (B & S) gage solid copper wire—at least 60 feet per set.

## TELL-TALE

15. If any direction signaling unit is not readily visible to the operator of the vehicle, there should be a visible or audible means of giving a clear and unmistakable indication to the driver when that unit is functioning.

## INSTALLATION INSTRUCTIONS

16. Complete instructions for installing the direction signal systems, including a comprehensive wiring diagram, type and designation of bulb, shall accompany each system.



### LAMP BULBS

17. Lamp bulbs used in the direction signals shall be of American manufacture. The physical and electrical characteristics of the bulbs used in electric direction signals shall be in accordance with the current standard SAE or SEMA specifications for such bulbs.

### SAMPLES FOR TEST

18. Sample signal systems submitted for laboratory test shall be representative of the devices as regularly manufactured and marketed. Each sample shall include all accessory equipment peculiar to the device and necessary to operate it in normal manner. The vibration and shock, moisture, and dust tests shall be made on the same sample in that order.

19. All bulbs used in understandability tests shall be selected for accuracy in accordance with the Standard SAE Specifications covering lamp bulbs and be operated at their rated mean spherical candlepower during the tests. Unless otherwise specified, the lamp bulbs used in the tests shall be supplied by the laboratory and shall be representative of standard bulbs in regular production. Where special bulbs are specified, they shall be submitted with the devices and the same or similar bulbs used in the tests and operated at their rated mean spherical candlepower.

### LABORATORY FACILITIES

20. All laboratory tests shall be made by a recognized, impartial engineering laboratory having all facilities and equipment necessary to make accurate physical and optical tests herein specified in accordance with established laboratory practices, including a range for observation of the signal at a distance of at least 100 feet under normal sunlight and darkness.

### VIBRATION AND SHOCK TEST

21a. A sample signaling unit, as mounted on the support or supports supplied, shall be bolted to the anvil end of the table of the vibration rack and vibrated approximately 750 times per minute through a distance of  $\frac{1}{4}$  inch. The table shall be spring mounted at one end and fitted with steel calks on the under side of the other end. These calks are to make contact with the steel anvil once during each cycle at the completion of the fall. The rack shall be operated under a spring tension of 60 to 70 pounds. This test shall be continued for one hour.

21b. The unit shall then be examined. Any unit showing evidence of material physical weakness, loosening of parts, rotation of indicating means, or rupture of parts shall be considered to have failed. Failure of the bulb shall not be considered as failure of the unit.

21c. It is recommended that for the purpose of standardizing the vibration and shock test, the testing machine shall be made substantially in accordance with the drawing, figure 1.

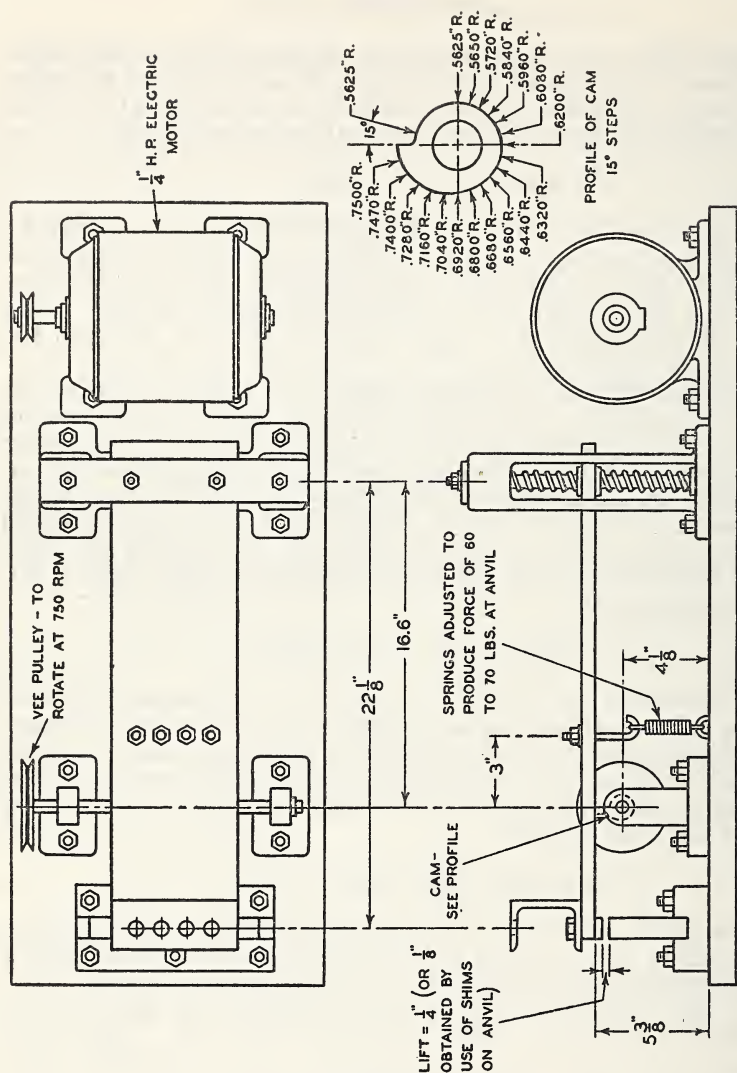


FIGURE 1.—Vibration and shock-testing machine.

## MOISTURE TEST

22a. A sample signaling unit shall be mounted in its normal operating position with any drain holes open and subjected to a precipitation of 0.1 inch of water per minute, delivered at an angle of 45 degrees from a nozzle with a solid-cone spray. During the moisture test, the lamp shall revolve about its vertical axis at a rate of 4 rpm. This test shall be continued for 12 hours. The water shall then be turned off and the unit permitted to drain for 1 hour.

22b. The unit shall then be examined. Any accumulation of more than  $\frac{1}{2}$  ml of water in the unit, warpage, or shrinkage of the lens shall constitute a failure.

## DUST TEST

23a. A sample signaling unit with any drain hole closed shall be mounted in its normal operating position, at least 6 inches from the wall, in a box measuring 3 feet in all directions, containing 10 pounds of fine powdered cement in accordance with ASTM Specification C9-38. At intervals of 15 minutes, this dust shall be agitated by compressed air or fan blower by projecting blasts of air for a 2-second period in a downward direction into the dust in such a way that the dust is completely and uniformly diffused throughout the entire cube. The dust is then allowed to settle. This test shall be continued for 5 hours.

23b. After the dust test, the exterior surface shall be cleaned, and if the maximum candlepower is within 10 percent of the maximum as compared with the condition after the unit is cleaned inside and out, it shall be considered adequately dust tight.

## CORROSION TEST

24a. A sample signaling unit, including mounting bracket, if any, shall be subjected to a 20-percent salt-spray solution for a period of fifty (50) hours consisting of two (2) periods of 24 hours' exposure and 1 hour's drying each, at a temperature of 95° F (35° C).

24b. There shall be no evidence of undue or excessive corrosion immediately after the above test has been completed.

## RELIABILITY TEST

25a. A sample signal system shall be set up in complete form and operated for 175,000 complete cycles (right and left), using the operating unit or switch submitted with the device as a part thereof. This test shall be made at a rate not to exceed 25 complete cycles per minute. In the case of flashing units, the rate shall be slow enough to permit the unit to flash at least twice for each operation of the switch.

25b. During this test, the operating unit shall function in normal manner. The "on" period for the flasher, if one is provided, shall be long enough at all times to permit the filament to come up to full brightness. The rate of flashing during the test shall not exceed 150 cycles per minute. The unit or units shall be connected in the circuit with the wire provided with the signaling system and operated upon a fully charged 100-ampere-hour battery with the charge operating at 10 amperes.

25c. If the signaling system is still operative after the completion of the test (except that bulbs may be replaced during the period of test), it shall be considered as satisfactory.

26a. *Proof Voltage Test.*—A complete sample of the operating unit shall be subjected to a proof voltage test by applying a potential of 500 volts alternating current between current-carrying parts and the case for a period of one (1) minute.

26b. There shall be no break-down in insulation as a result of this test.



## UNDERSTANDABILITY TEST

27a. A sample signaling unit shall be mounted in front of a matte blackboard 3 by 4 feet. The significance of the lighted signal under normal sunlight and in darkness as indicating a turn either to the left or to the right shall be recognized and understood by five out of seven observers (with normal vision) positioned at the level of the lamp axis at the following distances and angles. Normal sun shall be construed as sunlight falling upon the signal at an angle not to exceed 45 or less than 20 degrees to the signal axis. This angle should be recorded in the report.

27b. A signal shall be understandable at the following angles and distances:

Angles	Distances	
	Daytime	Nighttime
5° R to 5° L-----	100 feet-----	100 feet.
30° R to 30° L----	50 feet-----	50 feet.

## MARKING AND LABELING

28. Each signaling unit, lens, and operating unit manufactured and sold as conforming to this standard shall bear a distinctive designation prominently and permanently indicating the trade-mark of the manufacturer duly applied for or registered under the laws of the United States, or the trade name or other distinctive model, designation, or other means of identification.

29. In order to provide the purchaser with a ready means for distinguishing between electric directional signals which meet the requirements of this standard and those which do not, the Safety Equipment Manufacturers Association has adopted the wording quoted below for labels or statements on cartons. The mark "SEMA-APPROVED" on the lamps, and the lens where so specified, is based upon tests on samples and reexaminations by a recognized impartial engineering laboratory. It illustrates a method of certifying that these items comply with the commercial standard.

This Electric Direction Signal System, marked SEMA-APPROVED, is certified by the Safety Equipment Manufacturers Association and by the manufacturer as conforming to Commercial Standard CS80-41.

## EFFECTIVE DATE

The standard is effective for new production from January 1, 1941.

## 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 association nominated its own representatives. Comment concerning



the standard and suggestions for revision, may be addressed to any member of the committee or to the Division of Trade Standards, National Bureau of Standards, which acts as secretary for the committee.

#### *Manufacturers:*

- H. B. DONLEY (chairman), Columbus Metal Products, Inc., 767 North 4th St., Columbus, Ohio. Representing Safety Equipment Manufacturers Association.
- A. B. DETTMER, K-D Lamp Co., 610 West Court St., Cincinnati, Ohio. Representing Safety Equipment Manufacturers Association.
- R. R. WHIPPLE, The Trippe Manufacturing Co., 564 W. Adams, Chicago, Ill. Representing Safety Equipment Manufacturers Association.
- CHARLES W. ANKLAM, C. M. Hall Lamp Co., 1035 E. Hancock Ave., Detroit, Mich. Representing Society of Automotive Engineers.
- R. N. FALGE, Guide Lamp Division, General Motors Corp., Anderson, Ind. Representing Society of Automotive Engineers.
- WILLIAM F. LITTLE, Electrical Testing Laboratories, East End Ave. at 79th St., New York, N. Y. Representing Society of Automotive Engineers.

#### *Distributors:*

- W. E. BLANCHARD, National Automobile Dealers Association, 154 Bagley Avenue, Detroit, Mich.
- G. B. CORNWELL, Sears, Roebuck & Co., Homan Ave. & Arthington St., Chicago, Ill. Representing Mail Order Association of America.
- L. S. JULIEN, L. S. Jullien, Inc., 1439 P St., N. W., Washington, D. C. Representing Motor & Equipment Wholesalers Association.

#### *Users:*

- CHARLES G. MORGAN, Jr., American Trucking Associations, Inc., 1013 16th St., N. W., Washington, D. C.
- LEON F. BANIGAN, National Council of Private Motor Truck Owners, Inc., National Press Bldg., Washington, D. C.
- BURTON W. MARSH, American Automobile Association, Mills Bldg., 17th and Pennsylvania Ave., Washington, D. C.
- Alternate: EARL ALLGAIER.
- MARTIN SCHREIBER, Public Service Coordinated Transport, 80 Park Place, Newark, N. J. Representing National Association of Motor Bus Operators.

#### *General Interest:*

- H. H. ALLEN, Interstate Commerce Commission, Washington, D. C.
- H. H. Kelly, Interstate Commerce Commission, Washington, D. C. Representing Federal Interdepartmental Safety Council.
- Alternate: H. H. ALLEN.
- FRANK W. MATSON, Minnesota Railroad and Warehouse Commission, St. Paul, Minn. Representing National Association of Railroad and Utilities Commissioners.
- J. J. SHANLEY, Department of Motor Vehicles, Trenton, N. J. Representing American Association of Motor Vehicle Administrators.

#### *Laboratories:*

- Sydney V. James, Underwriters' Laboratories, Inc., 207 E. Ohio St., Chicago, Ill.
- MONROE L. PATZIG, American Council of Commercial Laboratories, 2215 Ingersoll Ave., Des Moines, Iowa.
- WM. F. LITTLE, Electrical Testing Laboratories, East End Ave., at 79th St., New York, N. Y.
- Alternate: HERMAN KOENIG.

## HISTORY OF PROJECT

Pursuant to a request on July 18, 1938, from the Safety Equipment Manufacturers Association (then known as the MEMA Light and Signal Group) for the cooperation of the National Bureau of Standards in the establishment of commercial standards for nine items of lamps and signal equipment for vehicles (after market), preliminary con-

ferences of all interested manufacturers were held in Detroit on September 22 and 23, 1938, and again on March 1 and 2, 1939, in order to adjust the drafts to suit the consensus of producers.

The proposed standards, as adjusted by the preliminary manufacturers' conferences, were then submitted to the American Association of Motor Vehicle Administrators and other key organizations for advance consideration and recommendations. Following receipt of these recommendations, a general conference was held in Washington, D. C., on January 11 and 12, 1940, to which all interested producers, distributors, users, regulatory bodies, and testing laboratories were invited. The report of the general conference was circulated on February 20, 1940.

On April 8, 1940, copies of the recommended commercial standards, as adopted by the general conference, including recommendations of two subcommittees appointed by the conference, were circulated to all concerned for written acceptance. Upon receipt of written acceptances from a preponderant majority, announcement was issued on July 10, 1940, that the standards would become effective for new production from January 1, 1941.

## ACCEPTANCE OF COMMERCIAL STANDARD

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this commercial standard.

Date -----

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

Gentlemen:

Having considered the statements on the reverse side of this sheet, we accept the Commercial Standard CS80-41 as our standard of practice in the

Production <sup>1</sup>

Distribution <sup>1</sup>

Use <sup>1</sup>

of electric direction signal systems.

We will assist in securing its general recognition and use and will cooperate with the standing committee to effect revisions of the standard when necessary.

Signature of individual 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 and State -----

<sup>1</sup> Please designate which group you represent by drawing lines through the other two. Please file separate acceptances for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade papers, colleges, etc., desiring to record their general approval, the words "in principle" should be added after the signature.



## TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement*.—Commercial standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. *The acceptor's responsibility*.—The purpose of commercial standards is to establish, for specific commodities, nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility*.—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is fourfold: first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation*.—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

## ACCEPTORS

The organizations and individuals listed below have accepted this standard as their standard of practice in the production, distribution, and use of electric direction signal systems. Such endorsement does not signify that they may not find it necessary to deviate from the standard, nor that producers so listed guarantee all of their products in this field to conform with the requirements of this standard. Therefore, specific evidence of conformity should be obtained where required.

## ASSOCIATIONS

American Transit Association, New York, N. Y.	National Standard Parts Association, Detroit, Mich. (In principle.)
Michigan Trucking Association, Detroit, Mich.	Safety Equipment Manufacturer's Association, Inc., New York, N. Y.
National Council of Women of the U. S., Inc., New York, N. Y.	

## FIRMS

A. G. Sales Co., Inc., New York, N. Y. (In principle.)	Connecticut Telephone & Electric Corporation, Meriden, Conn.
Aetna Motor Products Co., Boston (Dorchester), Mass.	Crescent Co., The, Pawtucket, R. I.
Anthes Force Oiler Co., Fort Madison, Iowa.	Culver-Stearns Manufacturing Co., Worcester, Mass.
Appleton Electric Co., Chicago, Ill.	Dallas, Better Business Bureau of Dallas, Tex. (In principle.)
Approved Patents Corporation, New York, N. Y.	Detroit Testing Laboratory, The, Detroit, Mich. (In principle.)
Arrow Safety Device Co., Medford, N. J.	Dietz Co., R. E., New York, N. Y. (In principle.)
Atlantic Greyhound Corporation, Charleston, W. Va.	Divco-Twin Truck Co., Detroit, Mich.
Atlantic Refining Co., The, Philadelphia, Pa.	Dixie Motor Coach Corporation, Dallas, Tex.
Autocar Co., The, Ardmore, Pa.	Economy Electric Lantern Co., Inc., Milwaukee, Wis.
Automotive Lighting Equipment, Inc., Franklinton, La.	Electric Service Supplies Co., Philadelphia, Pa.
Bendix Aviation Corporation, Bendix Products Division, New York, N. Y.	Electrical Testing Laboratories, New York, N. Y. (In principle.)
Bolser Corporation, The, Cedar Falls, Iowa.	Firestone Tire & Rubber Co., The, Akron, Ohio.
Carlton Lamp Corporation, Union City, N. J. (In principle.)	Hunt & Co., J. R., Baltimore, Md.
Casco Products Corporation, Bridgeport, Conn.	Idaho, State of, Boise, Idaho.
Central Co-operative Wholesale, Superior, Wis.	K-D Lamp Co., The, Cincinnati, Ohio.
Coleman Motors Corporation, Littleton, Colo.	Kilborn-Sauer Co., The, Fairfield, Conn.
Colorado, State Highway Department of, Traffic Division, Denver, Colo. (In principle.)	Lancaster Lens Co., The, Lancaster, Ohio.
Columbus Metal Products, Inc., Columbus, Ohio.	Long Beach, Calif., Ltd., Better Business Bureau of, Long Beach, Calif.
Connecticut, State Motor Vehicle Department of, Hartford, Conn.	Machine Reporter Corporation, Portland, Oreg.
	Maryland Casualty Co., Baltimore, Md. (In principle.)
	McKee Glass Co., Jeannette, Pa.
	Miller Co., The A. J., Bellefontaine, Ohio.

Minnesota Department of Highways, St. Paul, Minn.	Purdue University, Engineering Experiment Station, Lafayette, Ind. (In principle.)
Moreland Motor Truck Co., Los Angeles, Calif.	Reo Motors, Inc., Lansing, Mich.
National Transportation Co., Inc., Bridgeport, Conn.	Signal-Stat Corporation, Brooklyn, N. Y.
Nebraska State Railway Commission, Lincoln, Nebr.	Sunshine Bus Lines, Inc., Dallas, Tex.
New Orleans, Inc., Better Business Bureau of, New Orleans, La. (In principle.)	Tennessee Department of Safety, Nashville, Tenn.
Oklahoma Department of Public Safety, Oklahoma City, Okla.	Trippe Manufacturing Co., Chicago, Ill.
Packard Properties, Inc., General Accessories Division of, New York, N. Y.	Turnsignal Corporation, Germantown, Philadelphia, Pa.
Patzig Testing Laboratories, Des Moines, Iowa.	U. S. Metal Products Co., New York, N. Y.
Peltier Glass Co., The, Ottawa, Ill.	Underwriters Laboratories, Inc., Chicago, Ill. (In principle.)
Perfection Motor Products Co., The, Bridgeport, Conn.	Unity Manufacturing Co., Chicago, Ill.
Pittsburgh & Weirton Bus Co., Weirton, W. Va.	Walter Motor Truck Co., Ridgewood, L. I., N. Y.
Pollak Corporation, Joseph, Boston (Dorchester), Mass.	Ward Motor Vehicle Co., Mt. Vernon, N. Y.
Premier Signal Co., Bellevue, Ohio.	Washington, State of, Olympia, Wash.
Protectall Motor Signal, Inc., Syracuse, N. Y.	Western Auto Supply Co., Kansas City, Mo.
	Wisconsin, Motor Vehicle Department of, Madison, Wis.
	Yankee Metal Products Corporation, Norwalk, Conn.

## U. S. GOVERNMENT

Agriculture, U. S. Department of, Office of Plant & Operations, Washington, D. C.	Panama Canal, The, Transportation Division, Supply Department, Balboa Heights, Canal Zone.
Foreign & Domestic Commerce, Bureau of, Electrical Division, Washington, D. C. (In principle.)	Veteran's Administration, Washington, D. C.
	War Department, Washington, D. C.



## COMMERCIAL STANDARDS

CS No.	Item	CS No.	Item
0-40.	Commercial standards and their value to business (third edition).	49-34.	Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.
1-32.	Clinical thermometers (second edition).	50-34.	Binders board for bookbinding and other purposes.
2-30.	Mopsticks.	51-35.	Marking articles made of silver in combination with gold.
3-40.	Stoddard solvent (third edition).	52-35.	Mohair pile fabrics (100-percent mohair plain velvet, 100-percent mohair plain frieze, and 50-percent mohair plain frieze).
4-29.	Staple porcelain (all-clay) plumbing fixtures.	53-35.	Colors and finishes for cast stone.
5-40.	Pipe nipples; brass, copper, steel, and wrought iron.	54-35.	Mattresses for hospitals.
6-31.	Wrought-iron pipe nipples (second edition). Superseded by CS5-40.	55-35.	Mattresses for institutions.
7-29.	Standard weight malleable iron or steel screwed unions.	56-36.	Oak flooring.
8-33.	Gage blanks (second edition).	57-40.	Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings (second edition).
9-33.	Builders' template hardware (second edition).	58-36.	Woven elastic fabrics for use in overalls (overall elastic webbing).
10-29.	Brass pipe nipples. Superseded by CS5-40.	59-39.	Woven dress fabrics—testing and reporting (second edition).
11-29.	Regain of mercerized cotton yarns.	60-36.	Hardwood dimension lumber.
12-40.	Fuel oils (fifth edition).	61-37.	Wood-slat venetian blinds.
13-39.	Dress patterns (second edition).	62-38.	Colors for kitchen accessories.
14-39.	Boys' button-on waists, shirts, junior and polo shirts (made from woven fabrics) (second edition).	63-38.	Colors for bathroom accessories.
15-29.	Men's pajamas.	64-37.	Walnut veneers.
16-29.	Wall paper.	65-38.	Wool and part-wool fabrics.
17-32.	Diamond core drill fittings (second edition).	66-38.	Marking of articles made wholly or in part of platinum.
18-29.	Hickory golf shafts.	67-38.	Marking articles made of karat gold.
19-32.	Foundry patterns of wood (second edition).	68-38.	Liquid hypochlorite disinfectant, deodorant and germicide.
20-36.	Staple vitreous china plumbing fixtures (second edition).	69-38.	Pine oil disinfectant.
21-39.	Interchangeable ground-glass joints, stopcocks, and stoppers (fourth edition).	70-38.	Coal tar disinfectant (emulsifying type).
22-40.	Builders' hardware (nontemplate) (second edition).	71-38.	Cresylic disinfectants.
23-30.	Feldspar.	72-38.	Household insecticide (liquid spray type).
24-30.	Standard screw threads.	73-38.	Old growth Douglas fir standard stock doors.
25-30.	Special screw threads.	74-39.	Solid hardwood wall paneling.
26-30.	Aromatic red cedar closet lining.	75-39.	Automatic mechanical draft oil burners.
27-36.	Mirrors (second edition).	76-39.	Hardwood interior trim and molding.
28-32.	Cotton fabric tents, tarpaulins, and covers.	77-40.	Sanitary cast-iron enameledware.
29-31.	Staple seats for water-closet bowls.	78-39.	Ground-and-polished lenses for sun glasses.
30-31.	Colors for sanitary ware.	79-39.	Blown, drawn, and dropped lenses for sun glasses.
31-38.	Wood shingles (fourth edition).	80-41.	Electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor vehicle laws (after market).
32-31.	Cotton cloth for rubber and pyroxylin coating.	81-41.	Adverse-weather lamps for vehicles (after market).
33-32.	Knit underwear (exclusive of rayon).	82-41.	Inner-controlled spot lamps for vehicles (after market).
34-31.	Bag, case, and strap leather.	83-41.	Clearance, marker, and identification lamps for vehicles (after market).
35-31.	Plywood (hardwood and eastern red cedar).	84-41.	Electric tail lamps for vehicles (after market).
36-33.	Fourdrinier wire cloth (second edition).	85-41.	Electric license-plate lamps for vehicles (after market).
37-31.	Steel bone plates and screws.	86-41.	Electric stop lamps for vehicles (after market).
38-32.	Hospital rubber sheeting.	87-41.	Red electric warning lanterns.
39-37.	Wool and part wool blankets (second edition).	88-41.	Liquid-burning flares.
40-32.	Surgeons' rubber gloves.	89-40.	Hardwood stair treads and risers.
41-32.	Surgeons' latex gloves.		
42-35.	Fiber insulating board (second edition).		
43-32.	Grading of sulphonated oils.		
44-32.	Apple wraps.		
45-40.	Douglas fir plywood (domestic grades) (fourth edition).		
46-40.	Hosiery lengths and sizes (third edition).		
47-34.	Marking of gold-filled and rolled-gold-plate articles other than watch cases.		
48-34.	Domestic burners for Pennsylvania anthracite (underfeed type).		

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

