CS81–41
Lamps, Electric; adverse-weather, (for vehicles)

U. S. DEPARTMENT OF COMMERCE
JESSE H. JONES, Secretary
NATIONAL BUREAU OF STANDARDS
LYMAN J. BRIGGS, Director

ADVERSE-WEATHER LAMPS FOR VEHICLES (AFTER MARKET)

COMMERCIAL STANDARD CS81–41

Effective Date for New Production From January 1, 1941

A RECORDED VOLUNTARY STANDARD
OF THE TRADE

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1940

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IJF: EVH

TS-3123
AUGUST 29, 1941

SUPPLEMENT TO

ADVERSE-WEATHER LAMPS FOR VEHICLES (AFTER MARKET)

COMMERCIAL STANDARD CS81-41

ADOPTED BY THE INDUSTRY
ON RECOMMENDATION OF THE STANDING COMMITTEE
EFFECTIVE DATE FOR NEW PRODUCTION, SEPTEMBER 15, 1941.

- - - - - - - - - - - - -

IN THE ABOVE PAMPHLET, CORRECT PARAGRAPH 8 TO READ AS FOLLOWS:

"ALL WIRE USED SHALL BE STRANDED COPPER, CONFORMING TO SAE STANDARD SPECIFICATIONS KNOWN AS TYPE NO. 2 OR BETTER, AND SHALL HAVE AN ELECTRICAL RESISTANCE NOT IN EXCESS OF 4.71 OHMS PER 1000 FEET AT 68°F OR SHALL HAVE A CROSS-SECTIONAL AREA OF NOT LESS THAN 2361 CIRCULAR MILS - AT LEAST 10 FEET LONG FOR EACH UNIT. WHEN A WIRING HARNESS IS SUPPLIED WITH A PAIR OF LAMPS, ONE LENGTH OF WIRE HAVING AN ELECTRICAL RESISTANCE NOT IN EXCESS OF 2.97 OHMS PER 1000 FEET AT 68°F OR HAVING A CROSS-SECTIONAL AREA OF NOT LESS THAN 3753 CIRCULAR MILS IS SUFFICIENT TO SERVE BOTH LAMPS, IF PROPER CONNECTORS ARE USED."

IN PARAGRAPH 11, LINE 5, AFTER THE WORD "DUST", INSERT THE WORDS "(WHERE REQUIRED)".

INSERT A NEW SENTENCE AT THE BEGINNING OF PARAGRAPH 16A TO READ AS FOLLOWS:

"WHERE COMPOSITE (REFLECTOR-LENS) LIGHTING UNITS ARE USED, THE DUST TEST SHALL NOT BE REQUIRED."

DIVISION OF TRADE STANDARDS

NATIONAL BUREAU OF STANDARDS

INSERT OPPOSITE PAGE 2.

U. S. DEPARTMENT OF COMMERCE

NATIONAL BUREAU OF STANDARDS

WASHINGTON

ADDRESS REPLY TO
NATIONAL BUREAU OF STANDARDS

IN YOUR REPLY
REFER TO FILE

IJF:BEW

February 27, 1941

XI-2/spc
TS-3013

To the Manufacturers, Distributors,
Regulatory Officials and Users of
Lamps and Signal Equipment for Vehicles.

Subject: Lamps and Signal Equipment for Vehicles (After Market), CS80-41 to CS86-41 - Extention of Effective Date to July 1, 1941.

Gentlemen:

Under date of January 28, the Safety Equipment Manufacturers' Association reported the current impracticability of obtaining stranded copper wire and amber lenses conforming to Commercial Standards CS80-41 to CS86-41, inclusive, and requested, therefore, that the effective date on these Standards be postponed.

According to our understanding, the SEMA is now working in cooperation with the Electrical Testing Laboratories, the Society of Automotive Engineers, the wire manufacturers, and the lens manufacturers, in an effort to obtain material which will conform respectively with the S.A.E. specifications for wire, and with the commercial standards' limits for amber glass, and it is their belief that this can be accomplished prior to July 1, 1941.

Agreeable to the above request and with the approval of the Standing Committee, the effective date for new production of the corresponding items of Lamps and Signal Equipment (After Market) according to Commercial Standards CS80-41 to CS86-41, inclusive, is hereby extended from January 1, 1941, to July 1, 1941.

It may be well to note that this extension of the effective date does not apply to Red Electric Warning Lanterns, CS87-41, and Liquid-Burning Flares, CS88-41.

Cordially yours,

I. J. Fairchild

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

U. S. DEPARTMENT OF COMMERCE NATIONAL BUREAU OF STANDARDS

PROMULGATION

of

COMMERCIAL STANDARD CS81-41

for

ADVERSE-WEATHER LAMPS FOR VEHICLES (AFTER MARKET)

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 adverse-weather lamps for vehicles (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.

ADVERSE-WEATHER LAMPS FOR VEHICLES (AFTER MARKET) [1]

COMMERCIAL STANDARD CS81-41

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 adverse-weather lamps (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, and photometric tests of adverse-weather lamps.

DEFINITION

3. "Adverse-weather lamps" are lamps which shall be used in combination with or in lieu of head lamps to provide road illumination under conditions of rain, snow, dust, or fog.

GENERAL REQUIREMENTS

4. The light from an adverse-weather lamp shall be white, yellow or amber, or within the range from white to yellow or amber.

5. A white 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 values of x and y, neither of which differs from those of illuminant A by more than ± 0.01, x and y being trichromatic coefficients derived on the basis of the 1931 ICI standard observer and coordinate system.

[1] 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.

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6a. 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.

6b. 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.

6c. A yellow lens shall not be acceptable for adverse-weather lamps if it is redder than the dark-limit standard when the lens and the standard are illuminated by incandescent-lamp light.

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

8. 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 10 feet long for each unit. When a wiring harness is supplied with a pair of lamps, one length of No. 14 wire equivalent to No. 14 AWG (B & S) gage solid copper wire is sufficient to serve both lamps if proper connectors are provided.

INSTALLATION INSTRUCTIONS

9. Complete instructions for installing adverse-weather lamps, including a comprehensive wiring diagram, type and designation of bulb, shall accompany each lamp. Aiming instructions shall be in accordance with aim required for photometric tests.

LAMP BULBS

10. Lamp bulbs used in adverse-weather lamps shall be of American manufacture. The physical and electrical characteristics of the bulbs used in adverse-weather lamps shall be in accordance with the current standard SAE or SEMA specifications for such bulbs.

SAMPLES FOR TEST

11. Sample adverse-weather lamps 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.

12. All bulbs used in photometric 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 device, and the same or similar bulbs used in the tests and operated at their rated mean spherical candlepower.

LABORATORY FACILITIES

13. 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.

VIBRATION AND SHOCK TEST

14a. A sample 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 ¼ 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

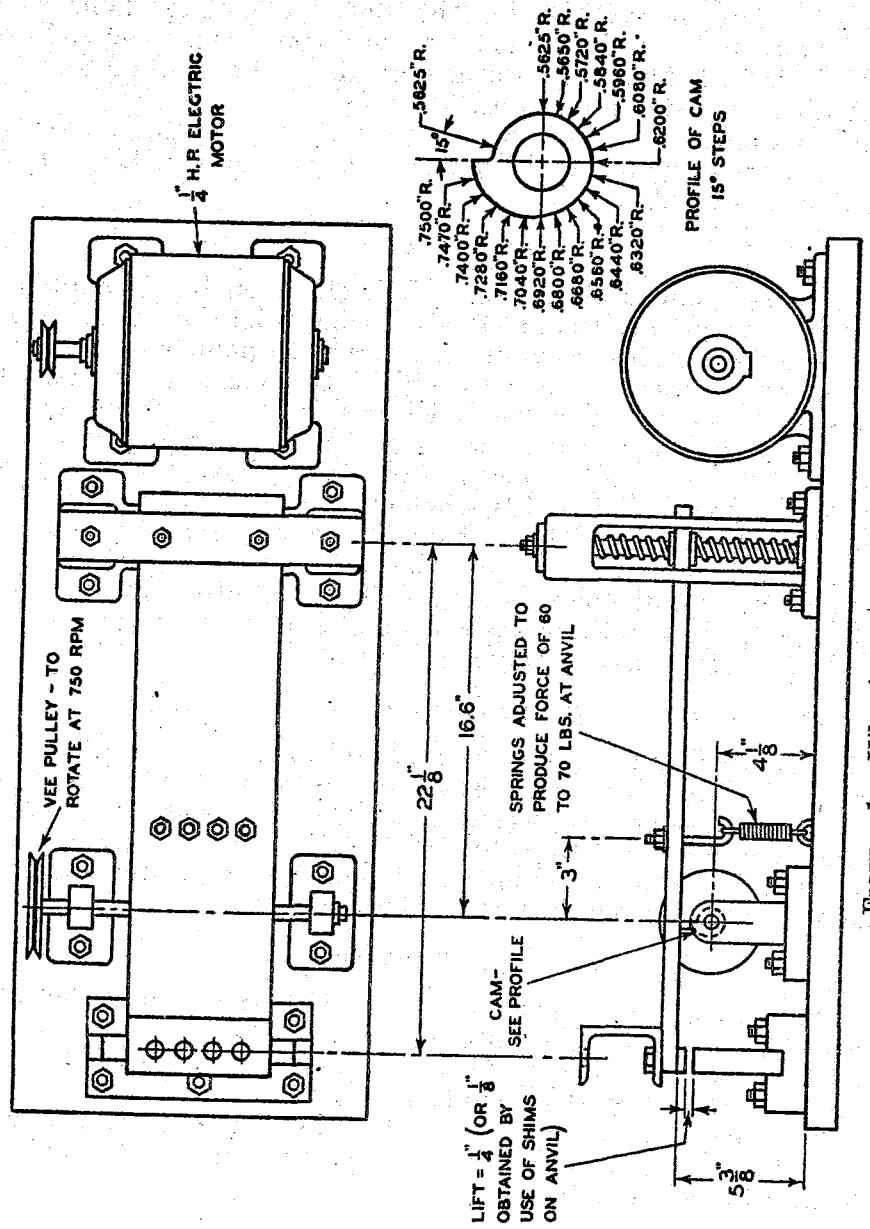

FIGURE 1.—*Vibration and shock-testing machine.*

completion of the fall. The rack shall be operated under a spring tension of 60 to 70 pounds. This test shall be continued for 1 hour.

14b. The unit shall then be examined. Any unit showing evidence of material physical weakness, lens rotation, or loosening or rupture of parts shall be considered to have failed. Failure of the bulb shall not be considered as failure of the unit.

14c. 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.

MOISTURE TEST

15a. A sample 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.

15b. The unit shall then be examined. Any accumulation of more than 1 ml. of water in the unit, or warpage or shrinkage of the lens shall constitute a failure.

DUST TEST

16a. A sample 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.

16b. 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

17a. A sample 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).

17b. There shall be no evidence of undue or excessive corrosion immediately after the above test has been completed.

PHOTOMETRIC TEST

18a. Photometric tests shall be made with the photometer at a distance of at least 60 feet from the lamps.

18b. *At-focus tests.*—The light source shall be located in the designed position, as specified by the manufacturer.

18c. The beam from each lamp shall be aimed vertically with reference to the horizontal line through the photometer axis, as specified by the manufacturer.

18d. The beam from each lamp shall be aimed laterally with reference to the vertical center line through the photometer axis in the same manner as the manufacturer specifies that it be aimed on the car with respect to the vertical center line ahead of each lamp.

18e. Candlepower values shall be recorded at 1-degree intervals for all points within the angles bounded by *1U*, *4D*, *12L*, and *12R*, except that in the cases of beams which are symmetrical laterally, the complete distribution may be recorded for the left half only.

18f. In case of reexamination test, the candlepower values shall be taken at the specific test points only and in the at-focus position only.

18g. The lamps shall meet the current photometric requirements [2] of the IES, SAE, and SEMA (Illuminating Engineering Society, Society of Automotive Engineers, and Safety Equipment Manufacturers Association).

18h. In locating the test points, the following nomenclature shall apply. The line formed by the intersection of the median vertical plane parallel to the lamp axes and the test screen is designated as *V*. The line formed by the intersection of the horizontal plane through the lamp centers and the test screen is designated as *H*. The point at the intersection of these two lines is designated as *H–V*. The other points on the screen are designated by similar symbols to indicate the number of degrees of arc above or below *H* and the number of degrees of arc to the left or right of *V*, for example: *4D–3L* is a point 4 degrees below *H* and 3 degrees to the left of *V*, and *1U–V* is a point 1 degree above *H* in the median vertical plane.

MARKING AND LABELING

19. Each adverse-weather lamp and lens 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.

20. In order to provide the purchaser with a ready means for distinguishing between adverse-weather lamps 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

[2] The 1939 photometric requirements of the IES, SAE, and SEMA are as follows:

The combined beams from two lamps shall then meet the following specifications which are based on the premise that best lighting will result for all conditions of adverse weather when the beam is aimed so that its top is 3 inches below the lamp center level at 25 feet when the vehicle is not loaded.

Line *4U* to line *90U*	150 cp max.
Line *2U*	250 cp max.
Line *1U*	500 cp max.
Line *H*	1,000 cp max.
1D, 3L to *3R*	4,000 cp to 8,000 cp.
1D, 9L to *9R*	2,000 cp min.

Maximum beam candlepower between 1½ *D* and 2½ *D*.

Out-of-focus tests.—Similar tests shall be made for each of four out-of-focus filament positions, except that the complete distribution may be omitted. Where conventional bulbs with two pin bayonet bases are used, candlepower tests shall be made with the light source 0.060 inch above, below, ahead, and behind the designed position. If prefocused bulbs are used, the limiting positions at which tests are made shall be 0.020 inch above, below, ahead, and behind the designed position.

The beam from each lamp may be reaimed in accordance with the instructions above for each of the out-of-focus positions of the light source.

laboratory. It illustrates a method of certifying that these items comply with the commercial standard.

This Adverse-Weather Lamp, marked SEMA-APPROVED, is certified by the Safety Equipment Manufacturers Association and by the manufacturer as conforming to Commercial Standard CS81-41.

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 St., 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. and Arthington St., Chicago, Ill. Representing Mail Order Association of America.

L. S. JULLIEN, L. S. Jullien, Inc., 1439 P St. NW., 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 conferences 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.

CS81–41

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 CS81–41 as our standard of practice in the

Production [1] Distribution [1] Use [1]

of adverse-weather lamps.

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.

(Cut on this line)

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 _____

[1] 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 adverse weather lamps. 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.
Michigan Trucking Association, Detroit Mich.
National Council of Women of the U. S. Inc., New York, N. Y.
National Standard Parts Association, Detroit, Mich. (In principle.)
New York State Motor Truck Association, Inc., New York, N. Y. (In principle.)
Safety Equipment Manufacturers' Association, Inc., New York N. Y.

FIRMS

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

National Transportation Co., Inc., Bridgeport, Conn.
Nebraska State Railway Commission, Lincoln, Nebr.
New Orleans, Inc., Better Business Bureau of, New Orleans, La. (In principle.)
Oklahoma Department of Public Safety, Oklahoma City, Okla.
Packard Properties, Inc., General Accessories Division of, New York, N. Y.
Patzig Testing Laboratories, Des Moines, Iowa.
Peltier Glass Co., The, Ottawa, Ill.
Perfection Motor Products Co., The, Bridgeport, Conn.
Pittsburgh & Weirton Bus Co., Weirton, W. Va.
Pollak Corporation, Joseph, Boston (Dorchester), Mass.
Premier Signal Co., Bellevue, Ohio.
Protectall Motor Signal, Inc., Syracuse, N. Y.
Purdue University, Engineering Experiment Station, Lafayette, Ind. (In principle.)
Reo Motors, Inc., Lansing, Mich.
Rich Foglite, Inc., Bellaire, Ohio.
S&M Lamp Co., Los Angeles, Calif.
Sears, Roebuck & Co., Chicago, Ill.
Sunshine Bus Lines, Inc., Dallas, Tex.
Tennessee Department of Safety, Nashville, Tenn.
Trippe Manufacturing Co., Chicago, Ill.
U. S. Metal Products Co., New York N. Y.
Unity Manufacturing Co., Chicago, Ill.
Virginia, Division of Motor Vehicles of, Richmond, Va. (In principle.)
Walter Motor Truck Co., Ridgewood, L. I., N. Y.
Ward Motor Vehicle Co., Mt. Vernon, N. Y.
Washington, State of, Olympia, Wash.
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.
Foreign & Domestic Commerce, Bureau of, Electrical Division, Washington, D. C. (In principle.)
Panama Canal, The, Transportation Division, Supply Department, Balboa Heights, Canal Zone.
Veterans Administration, Washington, D. C.
War Department, Washington, D. C.

COMMERCIAL STANDARDS

CS No.	Item
0-40.	Commercial standards and their value to business (third edition).
1-32.	Clinical thermometers (second edition).
2-30.	Mopsticks.
3-40.	Stoddard solvent (third edition).
4-29.	Staple porcelain (all-clay) plumbing fixtures.
5-40.	Pipe nipples; brass, copper, steel, and wrought iron.
6-31.	Wrought-iron pipe nipples (second edition). Superseded by CS5-40.
7-29.	Standard weight malleable iron or steel screwed unions.
8-33.	Gage blanks (second edition).
9-33.	Builders' template hardware (second edition).
10-29.	Brass pipe nipples. Superseded by CS5-40.
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20-36.	Staple vitreous china plumbing fixtures (second edition).
21-39.	Interchangeable ground-glass joints, stopcocks, and stoppers (fourth edition).
22-40.	Builders' hardware (nontemplate) (second edition).
23-30.	Feldspar.
24-30.	Standard screw threads.
25-30.	Special screw threads.
26-30.	Aromatic red cedar closet lining.
27-36.	Mirrors (second edition).
28-32.	Cotton fabric tents, tarpaulins, and covers.
29-31.	Staple seats for water-closet bowls.
30-31.	Colors for sanitary ware.
31-38.	Wood shingles (fourth edition).
32-31.	Cotton cloth for rubber and pyroxylin coating.
33-32.	Knit underwear (exclusive of rayon).
34-31.	Bag, case, and strap leather.
35-31.	Plywood (hardwood and eastern red cedar).
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).
40-32.	Surgeons' rubber gloves.
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).
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.
56-36.	Oak flooring.
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).
59-39.	Woven dress fabrics—testing and reporting (second edition).
60-36.	Hardwood dimension lumber.
61-37.	Wood-slat venetian blinds.
62-38.	Colors for kitchen accessories.
63-38.	Colors for bathroom accessories.
64-37.	Walnut veneers.
65-38.	Wool and part-wool fabrics.
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.
70-38.	Coal tar disinfectant (emulsifying type).
71-38.	Cresylic disinfectants.
72-38.	Household insecticide (liquid spray type).
73-38.	Old growth Douglas fir standard stock doors.
74-39.	Solid hardwood wall paneling.
75-39.	Automatic mechanical draft oil burners.
76-39.	Hardwood interior trim and molding.
77-40.	Sanitary cast-iron enameled ware.
78-39.	Ground-and-polished lenses for sun glasses.
79-39.	Blown, drawn, and dropped lenses for sun glasses.
80-41.	Electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor vehicle laws (after market).
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.

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.