UNITED STATES DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS

# DOMESTIC AND INDUSTRIAL FUEL OILS

## COMMERCIAL STANDARD CS12-29

ELIMINATION OF WASTE
Through
SIMPLIFIED COMMERCIAL PRACTICE

Below are described some of the series of publications of the Department of Commerce which deal with various phases of waste elimination.

**Simplified Practice Recommendations.**

These present in detail the development of programs to eliminate unnecessary variety in sizes, dimensions, styles, and types of over 100 commodities. They also contain lists of associations and individuals who have indicated their intention to adhere to the recommendations. These simplified schedules, as formulated and approved by the industries, are indorsed by the Department of Commerce.

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These are developed by various industries under a procedure similar to that of simplified practice recommendations. They are, however, primarily concerned with considerations of grade, quality, and such other characteristics as are outside the scope of dimensional simplification.

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These are promulgated by the American Marine Standards Committee, which is controlled by the marine industry and administered as a unit of the division of simplified practice. Their object is to promote economy in construction, equipment, maintenance, and operation of ships. In general, they provide for simplification and improvement of design, interchangeability of parts, and minimum requisites of quality for efficient and safe operation.

Lists of the publications in each of the above series can be obtained by applying to the Commercial Standardization Group, Bureau of Standards, Washington, D. C.

UNITED STATES DEPARTMENT OF COMMERCE
R. P. LAMONT, Secretary
BUREAU OF STANDARDS
GEORGE K. BURGESS, Director

# DOMESTIC AND INDUSTRIAL FUEL OILS

## COMMERCIAL STANDARD CS12–29

[ISSUED NOVEMBER 7, 1929]

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# COMMERCIAL STANDARD CS12-29

## ACCEPTED BY

ASSOCIATIONS

American Oil Burner Association (Inc.).
District of Columbia Home Economics Association (home-makers section).
Heating and Piping Contractors District of Columbia Association (Inc.).
Heating and Piping Contractors National Association.
National Association of Building Owners and Managers.
National Association of Purchasing Agents.
National Warm Air Heating Association.

FIRMS

Ace Combustion Engineering Co. (Inc.), Shreveport, La.
Acme Petroleum Co., Chicago, Ill.
Aetna Heating Co., Chicago, Ill.
American Nokol Corporation, Chicago, Ill.
American Oil Corporation, Jackson, Mich.
American Plumbing Co., Winona, Minn.
Arrow Petroleum Co., Forest Park, Ill.
Asiatic Petroleum Corporation, New York, N. Y.
Automatic Burner Corporation, Chicago, Ill.
Baker Oil Burners (Inc.), Denver, Colo.
Barnsdall Refineries (Inc.), Tulsa, Okla.
Beacon Oil Co., Everett, Mass.
Berry's Sons Co. of Illinois, James B., Chicago, Ill.
Best Corporation, W. N., New York, N. Y.
Bettendorf Oil Burner Co., Bettendorf, Iowa.
Boston Machine Works Co., Lynn, Mass.
Bradford Gasoline Co., Bradford, Pa.
Braun Bros. Oil Co., Winnetka, Ill.
Carborundum Co., The, Perth Amboy, N. J.
Chalmers Oil Burner Co., Minneapolis, Minn.
Christian & Co., B. W., Delavan, Wis.
City of Duluth, Minn.
Coltex Refining Co., Oklahoma City, Okla.
Combustion Fuel Oil Burner Co., Milwaukee, Wis.
Combustion Publishing Corporation, New York, N. Y. (in principle).
Commerce Petroleum Co., Chicago, Ill.
Connecticut General Life Insurance Co., Hartford, Conn.
Crystal Oil Works, Oil City, Pa.
Davis Iron Works, Stockton, Calif.
De Laval Separator Co., The, Poughkeepsie, N. Y.
Devonian Oil Co., Tulsa, Okla.
Electrol (Inc.), St. Louis, Mo.
Empire Oil & Refining Co., Tulsa, Okla.
Empire Oil Works (Inc.), Oil City, Pa.
Enterprise Oil Burner Co., San Francisco, Calif.
Fair-Chester Oil Co. (Inc.), Port Chester, N. Y.
Franklin Oil Heating (Inc.), Columbus, Ohio.
Fuel Oil Journal, New York, N. Y. (in principle).
General Petroleum Corporation of California, Los Angeles, Calif.
Gibson, John G., Ventnor City, N. J.
Gibson-Zahniser Oil Corporation, Tulsa Okla.
Gilmore Oil Co., Los Angeles, Calif.
Glenbard-McIlvaine Co., Glen Ellyn, Ill.
Goodman, Charles H., Kenosha, Wis.
Griffith-Consumers Co., Washington, D. C.
Gulf Oil Burner Co., Philadelphia, Pa.
Hagan Co., George J., Pittsburgh, Pa.
Hancock Oil Co., Long Beach, Calif.
Hardinge Bros. (Inc.), Chicago, Ill.
Harker Plumbing & Heating Co., The, Duluth, Minn.
Heating & Ventilating Magazine, The, New York, N. Y. (in principle).
Heating Journals (Inc.), New York, N. Y. (in principle).
Hemphill & Co. (Inc.), J. L., North Bergen, N. J.
Henry & Co., E. C., Bay City, Mich.
Hoffman Oil Burner Co., Minneapolis, Minn.
Holby Burner Corporation, New York, N. Y.
Homaokla Oil Co., Oklahoma City, Okla.
Honolulu Consolidated Oil Co., San Francisco, Calif.

Imperial Refining Co., Tulsa, Okla.
Independent Oil & Gas Co., Tulsa, Okla.
Industrial Power, Chicago, Ill. (in principle).
International Burners Corporation, New York, N. Y.
Jefferson, C. J., New York, N. Y.
Jewett Sowers Co., Chicago, Ill.
Johnson Co., S. T., Oakland, Calif.
Kentucky Consumers Oil Co., Louisville, Ky.
Kettle Creek Refining Co., Tulsa, Okla.
Keystone Oil Distributing Co., Chicago, Ill.
Lammert & Mann Co., Chicago, Ill.
Lindsay-McMillan Co., Milwaukee, Wis.
Littleford Bros., Cincinnati, Ohio.
Long, George Thiell, White Plains, N. Y.
Lord Lumber Co., La Grange, Ind.
Lynch-Clarisey Co., Chicago, Ill.
Macy & Co. (Inc.), R. H., New York, N. Y.
Marr Oil Heat Machine Corporation, Minneapolis, Minn.
Marwall Sales Co., Milwaukee, Wis.
May Oil Burner Corporation, Baltimore, Md.
McIlvaine Burner Corporation, Evanston, Ill.
Mills Oil Co., C. E., Syracuse, N. Y.
Minneapolis Oil Burner Co., Minneapolis, Minn.
Miocene Oil Co., San Francisco, Calif.
Nassau Utilities Corporation, Roslyn, N. Y.
New York Edison Co., New York, N. Y.
Northern Oil Burner Co., Minneapolis, Minn.
Nu-way Corporation, The, Rock Island, Ill.
Olympic Heating Supply Co., Seattle, Wash.
Palmer Corporation of Louisiana, The, Shreveport, La.
Panhandle Refining Co., Wichita Falls, Tex.
Pennsylvania Oil Co. of Evanston, Evanston, Ill.
Pennsylvania Refining Co., Karns City, Pa.
Pennzoil Co., The, Oil City, Pa.
Peppers Gasoline Co., Enid, Okla.
Perfection Stove Co., Cleveland, Ohio.
Petroleum Heat & Power Co., New York, N. Y.
Philadelphia Electric Co., The, Philadelphia, Pa.
Porter Corporation, J. E., Ottawa, Ill.
Power Plant Engineering, Chicago, Ill., (in principle).
Preferred Oil Burners (Inc.), Peoria, Ill.
Producers & Refiners Corporation, Independence, Kans.
Pure Oil Co., The, Chicago, Ill.
Pyramid Petroleum Products Co., Kearny, N. J.
Ray Manufacturing Co. (Inc.), W. S., San Francisco, Calif.
Rio Grande Oil Co., Los Angeles, Calif.
Rockwell Co., W. S., New York, N. Y.
Royce, William, Lakeside, Mich.
Ryan, Scully & Co., Philadelphia, Pa.
Schock Independent Oil Co., Mount Joy, Pa.
Schrafft & Sons Corporation, W. F., Charlestown, Mass.
Schutte & Koerting Co., Philadelphia, Pa.
Seaboard Petroleum Corporation, Los Angeles, Calif.
Security Stove & Manufacturing Co., Kansas City, Mo.
Seneca Petroleum Co., Chicago, Ill.
Seymour Manufacturing Co., The, Seymour, Conn.
Shaffer Oil & Refining Co., Chicago, Ill.
Shell Eastern Petroleum Products (Inc.), Boston, Mass.
Shell Petroleum Corporation, St. Louis, Mo.
Silent Automatic Corporation, Detroit, Mich.
Simms Oil Co., Dallas, Tex.
Skelly Oil Co., El Dorado, Kans.
Smith Oil Co. (Inc.), E. L., Mexia, Tex.
Standard Oil Co. (Indiana), Chicago, Ill.
Standard Oil Co. (Kansas), Neodesha, Kans.
Standard Oil Co. (Nebraska), Omaha, Nebr.
Standard Oil Co. (New York), New York, N. Y.
Standard Oil Development Co., New York, N. Y.:
Humble Oil & Refining Co.
Standard Oil Co. (Louisiana).
Standard Oil Co. (New Jersey).
Starlight Refining Co., Karns City, Pa.
Sterling Fuel Oil Corporation, Chicago, Ill.
Sunburst Oil & Refining Co., Great Falls, Mont.
Sundstrand Engineering Co., Rockford, Ill.
Super Oil Heator Co., Pawtucket, R. I.
Swan Finch Oil Corporation, New York, N. Y.
Swan-Finch Refining Co., Warren, Pa.
Sweney Gasoline & Oil Co., Peoria, Ill.
Sylvestre Oil Co. (Inc.), New York, N. Y.
Texas Pacific Coal & Oil Co., Fort Worth, Tex.
Tillinghast Oil Corporation, Troy, N. Y.
Timkin-Detroit Co., The, Detroit, Mich.
Transcontinental Oil Co., Tulsa, Okla.
Tri-State Refining Co. (Inc.), Kenova, W. Va.
Trowbridge & Schellens, Boston, Mass.
United Refining Co., Warren, Pa.
Universal Engineer, The, New York, N. Y. (in principle).

Vickers Petroleum Co. of Delaware, The, Wichita, Kans.
Wadhams Oil Co., Milwaukee, Wis.
Ward Oil Co. (Inc.), Ossining, N. Y.
Warner Quinlan Co., New York, N. Y.
Waverly Oil Works Co., Pittsburgh, Pa.
Wayne Home Equipment Co., Fort Wayne, Ind.
Western Maryland Railway Co., Baltimore, Md.
Western Oil & Refining Co., Los Angeles, Calif.
Westinghouse Air Brake Co., Wilmerding, Pa.
White Eagle Oil Refining Co., Kansas City, Mo.
Winkler-Koch Engineering Co., Wichita, Kans.
Wirt Frankling Petroleum Corporation, Ardmore, Okla.

GOVERNMENT

Federal Specifications Board, Washington, D. C. (in principle).

# DOMESTIC AND INDUSTRIAL FUEL OILS

## COMMERCIAL STANDARD CS12–29

On January 9, 1929, a joint conference of representative refiners, distributors, and consumers of fuel oil, manufacturers of oil burners, and general interests, adopted a commercial standard for domestic and industrial fuel oils. The industry has since accepted and approved for promulgation by the Department of Commerce the specifications as shown herein.

This recommendation is effective from July 15, 1929.

These specifications make no reference to the gravity of oil, a quality that has been widely used in the past as an index of volatility. Gravity is of no value as an indicator of the volatility or viscosity of fuel oil, and consequently no gravity limits are given.

Promulgation recommended.

R. M. Hudson,
*Assistant Director for Commercial Standardization.*

Promulgated.

George K. Burgess,
*Director, Bureau of Standards.*

Approved.

R. P. Lamont,
*Secretary of Commerce.*

# COMMERCIAL STANDARD CS12–29

## SCOPE

1. These specifications cover light, medium, and heavy domestic fuel oils, and light, medium, and heavy industrial fuel oils for domestic and industrial oil-burning equipment.

## GENERAL REQUIREMENTS

2. PROPERTIES.—Grades 1 to 4, inclusive, shall be hydrocarbon oils free from water, acid, grit, and fibrous or other foreign matters likely to clog or injure the burner or valves. Grades 5 and 6 shall be hydrocarbon oils, free from grit, acid, and fibrous or other foreign matters likely to clog or injure the burner or valves. If required, it shall be strained by being drawn through filters or wire gauze of 16 meshes to the inch. The clearance area through the strainers shall be at least twice the area of the suction pipe, and the strainers shall be in duplicate.

TABLE 1.—*Detailed requirements for domestic fuel oils*

[For method of test see paragraph indicated]

| Grade of oil | Flash point | | Water and sediment maximum | Pour [1] point, maximum | Distillation test | | | Viscosity, maximum |
|---|---|---|---|---|---|---|---|---|
| | Minimum | Maximum | | | 10 per cent point, maximum | End point, maximum | 90 per cent point, maximum | |
| No. 1, light domestic fuel oil. (A light distillate oil for use in burners requiring a high-grade fuel.) | 110° F. or legal (Par. 3) | 165° F. (Par. 4) | *Per cent* 0.05 (Par. 5) | 15° F. (Par. 7) | 420° F. (Par. 8) | 600° F. (Par. 8) | --------- --------- | |
| No. 2, medium domestic fuel oil. (A medium distillate oil for use in burners requiring a high-grade fuel.) | 125° F. or legal (Par. 3) | 190° F. (Par 4.) | .05 (Par. 5) | 15° F. (Par. 7) | 440° F. (Par. 9) | --------- --------- | 620° F. (Par. 9) | |
| No. 3, heavy domestic fuel oil. (A distillate fuel oil for use in burners where a low-viscosity oil is required.) | 150° F. or legal (Par. 3) | 200° F. (Par. 4) | .1 (Par. 5) | 15° F. (Par. 7) | 460° F. (Par. 9) | --------- --------- | 675° F. (Par. 9) | Saybolt universal at 100° F. 55 seconds. (Par. 10) |

[1] Lower or higher pour points may be specified whenever required by conditions of storage and use. However, these specifications shall not require a pour point less than 0° F. under any conditions.

TABLE 2.—*Detailed requirements for industrial fuel oils*

[For method of test see paragraph indicated]

| Grade of oil | Flash point | | Water and sediment, maximum | | Pour point, maximum | Viscosity, maximum |
|---|---|---|---|---|---|---|
| | Minimum | Maximum | | | | |
| No. 4, light industrial fuel oil. (An oil known to the trade as a light fuel oil for use in burners where a low viscosity industrial fuel oil is required.) | 150° F. (Par. 3) | (1) (Par. 4) | *Per cent* 1.0 (Par. 5) | | (2) (Par. 7) | Saybolt universal at 100° F. 125 seconds. (Par. 10) |
| No. 5, medium industrial fuel oil. (Same as Federal Specifications Board specification for Bunker Oil "B" for burners adapted to the use of industrial fuel oil of medium viscosity.) | 150° F. (Par 3) | ---------- | 1.0 (Par. 5) | | ---------- | Saybolt Furol at 122° F. 100 seconds. (Par. 10) |
| | | | Water | Sediment | | |
| No. 6, heavy industrial fuel oil. (Same as Federal Specifications Board specification for Bunker Oil "C" for burners adapted to oil of high viscosity.) | 150° F. Par. 3) | ---------- | (3) (Par. 6) | 0.25 (Par. 6) | ---------- | Saybolt Furol at 122° F. 300 seconds. (Par. 10) |

[1] Whenever required, as, for example, in burners with automatic ignition, a maximum flash point may be specified. However, these specifications shall not require a flash point less than 250° F. under any conditions.

[2] Pour point may be specified whenever required by conditions of storage and use. However, these specifications shall not require a pour point less than 15° F. under any conditions.

[3] The total water plus sediment shall not exceed 2.0 per cent.

## METHODS OF TEST

### FLASH POINT

3. MINIMUM.—The flash point, instrument, and method for determining minimum flash point shall be that legal for the locality in which the oil is sold. In absence of legal requirements, the mimimum flash point shall be determined in accordance with the standard method of test for flash point by means of the Pensky-Martens closed tester as in American Society for Testing Materials D93–22, or method 110.22 Bureau of Mines, Technical Paper 323B.

4. MAXIMUM.—Standard method of test for flash point by means of the Pensky-Martens closed tester as in American Society for Testing Materials D93–22 or method 110.22, Bureau of Mines, Technical Paper 323B.

### WATER AND SEDIMENT

5. Standard method of test for water and sediment in petroleum products by means of centrifuge as described under method 300.31 in Bureau of Mines Technical Paper 323B for United States Federal specification bunker fuel oil "B," or American Society for Testing Materials. D96–28.

6. Standard method of test for water and sediment in petroleum products by means of distillation and extraction as described under methods 300.12 for water and 300.2 for sediment in Bureau of Mines Technical Paper 323B for United States Federal specification bunker fuel oil "C." A deduction in quantity will be made for all water plus sediment in excess of 1.0 per cent.

### POUR POINT

7. Tentative method of test for pour points of petroleum products as in American Society for Testing Materials D97–28 or method 20.12 in Bureau of Mines, Technical Paper 323B.

### DISTILLATION TEST

8. Standard method of test for distillation of gasoline, naphtha, kerosene, and similar petroleum products as in American Society for Testing Materials D86–27.

9. Standard method of testing gas oils as in American Society for Testing Materials, D158–28, except as to the procedure in taking readings, which shall be taken as required in these specifications.

### VISCOSITY

10. Standard method of test for viscosity of petroleum products and lubricants as in American Society for Testing Materials, D88–26 and method 30.41, Bureau of Mines, Technical Paper 323B.

### REFERENCES

11. Complete information regarding the procedure for making the tests specified is to be found in the publications of the American Society for Testing Materials, 1315 Spruce Street, Philadelphia, or in the United States Bureau of Mines, Technical Paper 323B, obtainable at the office of the Superintendent of Documents, Government Printing Office, Washington, D. C. The price of the latter is 15 cents.

## SIGNIFICANCE OF TESTS PRESCRIBED

### FLASH POINT

12. The flash point of a product may be defined as the temperature to which it must be heated in order to give off sufficient vapor to form an inflammable mixture with air. This temperature varies with the apparatus and procedure employed and consequently both must be specified when the flash point of an oil is stated.

13. The minimum flash point of oils used for fuel is usually controlled by law. When there are no legal requirements, the minimum values in the table are to be employed. Maximum values are specified in oils Nos. 1, 2, and 3 to insure the required ease of ignition.

### WATER AND SEDIMENT

14. Water and sediment are impurities which are almost entirely excluded in oils Nos. 1, 2, and 3 and which are permitted in somewhat larger quantities in oils Nos. 4, 5, and 6. It is difficult to eliminate them entirely from this latter group of oils, and the advantage is not sufficient to justify the cost.

15. Water and sediment are determined together by the centrifuge, except with oil No. 6, where water is determined by a distillation method, and sediment by extraction with benzol.

### POUR POINT

16. The pour point of an oil is the lowest temperature at which it will flow under prescribed conditions. Pour-point specifications are included in order that oil may be secured which will not cause difficulty in handling or in use at the lowest temperatures to which it may normally be subjected.

### DISTILLATION

17. Laboratory distillation of a sample under prescribed conditions gives an index of the volatility of the oil. The 10 and 90 per cent points represent, respectively, the temperatures at which 10 and 90 per cent of the sample are distilled over. The end point is the maximum temperature recorded by the distillation thermometer at the end of the distillation.

18. The 10 per cent point serves as an index of the ease of ignition of the oil and the 90 per cent point and the end point are specified to make sure that the oil will burn completely and produce a minimum amount of carbon.

### VISCOSITY

19. The viscosity of an oil is the measure of its resistance to flow. Maximum limits are placed on this property because of its effect upon the rate at which oil will flow through pipe lines and upon the degree of atomization that may be secured in any given equipment.

20. Viscosity is measured as the seconds required for a definite volume of oil to pass through a small tube of specified dimensions at a definite temperature. Viscosity decreases rapidly as temperature increases, and preheating makes possible the use of oils of relatively high viscosity at normal temperatures. The Saybolt Universal Viscosimeter is used for fuel oils of fairly low viscosity and the Saybolt Furol Viscosimeter for heavier oils.

## HISTORY OF THE PROJECT

The manufacturers of oil burners and many petroleum refiners had long felt the need of uniform specifications for fuel oils. The American Oil Burner Association assumed the initiative in this matter and developed specifications for six grades of domestic and industrial fuel oils with the cooperation of the American Society for Testing Materials and the American Petroleum Institute.

In order to bring these specifications into broader use the cooperation of the Bureau of Standards was requested. Anticipating the benefits to be derived from a commonly understood basis of quality, all interests of the industry freely participated in a conference held in New York City January 9, 1929, and recommended that the standards be accepted as an everyday basis for the production, sale, and use of fuel oils.

## GENERAL CONFERENCE

Pursuant to a request from the American Oil Burner Association, a general conference of refiners, distributors, and consumers of fuel oil, manufacturers of oil burners, and general interests was held on January 9, 1929, at the Pennsylvania Hotel, New York, N. Y.,

to consider the establishment of commercial standard grades of domestic and industrial fuel oils on the basis of a preliminary draft prepared by American Oil Burner Association in cooperation with individual oil refiners, the American Society for Testing Materials, and the American Petroleum Institute.

Harry H. Steidle, of the division of trade standards, National Bureau of Standards, presided as chairman of the conference. The specifications were presented for discussion by Harry F. Tapp, of the American Oil Burner Association, and a number of changes were made to make them consistent with economic refining practices. Upon motion by Dr. E. W. Dean, seconded by H. M. Hancock, a unanimous vote was cast to adopt the proposed commercial standard as revised.

The conference was informed of the services of the Bureau of Foreign and Domestic Commerce in the matter of translating, printing, and broadcasting the commercial standards in foreign countries that are important consumers of fuel oil, but the consensus of opinion seemed to be that a thorough test of the standards should first be made in domsetic use before promulgating them abroad.

The following individuals were present:

ALMERT, HAROLD, Columbia Gas & Electric Co., 61 Broadway, New York, N. Y.
ANDERSON, ROSS P., American Petroleum Institute, 250 Park Avenue, New York, N. Y.
BAILEY, EDWARD P., National Airoil Burner Co., 1327 Girard Avenue, Philadelphia, Pa.
BAXTER, FLORUS R., Vacuum Oil Co., Rochester, N. Y.
BECKER, LEOD D., Fuel Oil Journal, 420 Madison Avenue, New York, N. Y.
BINKLEY, M. J., International Burners Corporation, 225 West Thirty-fourth Street, New York, N. Y.
BLAKE, EDWARD, Super Oil Heater Co., Pawtucket, R. I.
BOYE, B. L., Standard Oil Co. of New York, 26 Broadway, New York, N. Y.
BUTLER, WILEY H., Standard Oil Co. of New Jersey, 26 Broadway, New York, N. Y.
CANNON, J. W., The Carborundum Co., Perth Amboy, N. J.
CAVENAUGH, R., W. Winslow Boiler Engineering Co., 11 West Forty-second Street, New York, N. Y.
CHRISTIE, GEORGE R., Standard Oil Co. of New York, 26 Broadway, New York, N. Y.
CONALL, A. A., Standard Oil Co. of California, 120 Broadway, New York, N. Y.
CUNNINGHAM, G. C., Shell Petroleum Corporation, St. Louis, Mo.
DEAN, E. W., Standard Oil Co. of New Jersey, 26, Broadway, New York, N. Y.
DEVER, HARVEY C., Petroleum Heat & Power Co., 511 Fifth Avenue, New York, N. Y.
FANTOZZI, C. T., Shaffer Oil & Refining Co., 300 West Adams Street, Chicago, Ill.
FARMER, HAROLD C., American Society for Testing Materials, Philadelphia Electric Co., 2301 Market Street, Philadelphia, Pa.
FISHER, ROY R., Argo Oil Corporation, 2539 Woodward Street, Detroit, Mich.
FREITAG, THEODORE R., Vaccum Oil Co., 61 Broadway, New York, N. Y.
FULWEILER, WALTER H., American Society for Testing Materials, United Gas Improvement Co., Philadelphia, Pa.
GRIFFIN, H. M., Asiatic Petroleum Corporation, 65 Broadway, New York, N. Y.
GOLDTHORP, D. W., Fuel Oil Journal, 420 Madison Avenue, New York, N. Y.
HANCOCK, H. M., Atlantic Refining Co., Philadelphia, Pa.
HASKELL, R., The Texas Co., 17 Battery Place, New York, N. Y.
HULL, F. A., American Society for Testing Materials, General Electric Co., Schenectady, N. Y.
JEFFERSON, C. J., American Marine Standards Committee, Department of Commerce, and United States Shipping Board, 45 Broadway, New York, N. Y.
KUTTNER, JULIUS, Oil Engine Power, 101 West Thirty-first Street, New York, N. Y.

LYBECK, R. F., Beacon Oil Co., Boston (Everett), Mass.
MARKLEY, FRANK R., Sun Oil Co., 420 Lexington Avenue, New York, N. Y.
MASON, FRANK B., Swan Finch Oil Corporation, Elizabeth, N. J.
MORGAN, A. B., National Electric Light Association, 420 Lexington Avenue, New York, N. Y.
MULVEY, J. J., The Atlantic Refining Co., 260 South Broad Street, Philadelphia, Pa.
MUSTOR, W. R., City Ice & Coal Co., 1225 Seaview Avenue, Bridgeport, Conn.
NEWELL, H. E., National Board of Fire Underwriters, Underwriters Laboratories, and National Fire Protective Association, 85 John Street, New York, N. Y.
O'BRIEN, J. L., Silent Automatic Corporation, 255 Meldrum Avenue, Detroit, Mich.
ORR, B. N., New York Edison Co., 130 East Fifteenth Street, New York, N. Y.
PARSONS, LEON W., Tide Water Oil Co., Bayonne, N. J.
RAMAGE, J. E., Domestic Engineering Co., 110 East Forty-second Street, New York, N. Y.
RATHER, J. B., Standard Oil Co. of New York, 412 Greenpoint Avenue, Brooklyn, N. Y.
REED, C. W., Tide Water Oil Co., 11 Broadway, New York, N. Y.
RIKER, N. D., Standard Oil Co. of New York, 370 Seventh Avenue, New York, N. Y.
SMITH, H. E., New York Central Lines, 466 Lexington Avenue, New York, N. Y.
SPACE, F. G., National Association of Purchasing Agents, The Seymour Manufacturing Co., Seymour, Conn.
TAPP, HARRY F., American Oil Burner Association, 342 Madison Avenue, New York, N. Y.
TILLINGHAST, C. W., Tillinghast Oil Corporation, Troy, N. Y.
WARWICK, C. L., American Society for Testing Materials, 1315 Spruce Street, Philadelphia, Pa.
WATSON, R. C., Oil, Paint & Drug Reporter, 12 Gold Street, New York, N. Y.
WESCOTT, W. N., Crew-Levick Co., 219 North Broad Street, Philadelphia, Pa.
WILSON, ABRAM, Petroleum Iron Works, 25 West Forty-third Street, New York, N. Y.
WOLFORD, J. K., Sylvestre Oil Co. (Inc.), 420 Lexingotn Avenue, New York, N. Y
DEPARTMENT OF COMMERCE:
FOSTER, A. L., Bureau of Mines.
KENNEDY, HARVEY T., Bureau of Standards.
STEIDLE, HARRY H., division of trade standards, Bureau of Standards.

## STANDING COMMITTEE AND EFFECTIVE DATE

The standing committee, which was appointed to represent the various elements in the industry, will receive all comments and suggestions for the improvement of the specifications and, at the expiration of one year from the date on which the standard becomes effective, will consider what changes, if any, shall be made.

The members of the committee are:

*Harold C. Farmer, chief chemist, The Philadelphia Electric Co., 2301 Market Street, Philadelphia, Pa., chairman.
*J. T. B. Bowles, technologist, Crown Central Petroleum Corporation, Houston, Tex.
*J. G. Detwiler, assistant consulting chemist, The Texas Co., 17 Battery Place, New York, N. Y.
Harvey C. Dever, vice president, Petroleum Heat & Power Co., 511 Fifth Avenue, New York, N. Y.
*A. L. Foster, Bureau of Mines, Washington, D. C.
Dr. B. C. Frichot, Shaffer Oil & Refining Co., Cushing, Okla.
*M. A. Herzog, chief chemist, St. Louis-San Francisco Railway Co., department of chemistry and tests, Springfield, Mo.
*H. C. Loudenbeck, Westinghouse Air Brake Co., Wilmerding, Pa.
*R. C. Osterstrom, chief chemist, The Pure Oil Co., The Pure Oil Building, 35 East Wacker Drive, Chicago, Ill.

* Members of subcommittee on fuel oil, American Society for Testing Materials.

*H. B. Pullar, secretary, James B. Berry's Sons Co., 310 South Michigan Avenue, Chicago, Ill.
*C. F. Ramey, chief chemist, Richmond Refinery, Standard Oil Co. of California, Richmond, Calif.
*Dennistoun Wood, engineer of tests, Southern Pacific Co., 65 Market Street, San Francisco, Calif.
*T. H. Rogers, Standard Oil Co. (Indiana), 910 South Michigan Avenue, Chicago, Ill.
F. G. Space, representing National Association of Purchasing Agents, The Seymour Manufacturing Co., Seymour, Conn.
*Harry F. Tapp, assistant secretary, American Oil Burner Association, 342 Madison Avenue, New York, N. Y.
S. S. Seltzer, general manager, Sylvestre Oil Co. (Inc.), 420 Lexington Avenue, New York, N. Y.
*H. T. Kennedy, Bureau of Standards, Washington, D. C.
Harry H. Steidle, Bureau of Standards, Washington, D. C. (ex officio).

The conference decided that the selection of an effective date for the standard should be determined when the program had secured the necessary support from those concerned.

As a result of the circularization of the industry, adequate support was received and the standard made effective as of July 15, 1929.

## CERTIFICATION PLAN

Lack of time prevented the conference on domestic and industrial fuel oils from discussing this plan. However, the Bureau of Standards will, if requested, extend it to include domestic and industrial fuel oils.

The certification plan as applied by the Bureau of Standards to commercial standards consists in the compilation and distribution of lists of manufacturers who are willing, when requested to do so, to certify to purchasers that products supplied by them comply with all the requirements and tests set forth in nationally recognized commercial standards. The plan is also applied to selected Federal specifications.

These lists are available on request to individual consumers, consumer groups, companies, and, in fact, to any prospective purchasers for their guidance.

The benefits now derived from the use of specifications by large consumers are thus made immediately available to the small consumer, with incidental advantage to the larger consumers of convenience in ordering and accepting material with fewer laboratory tests, and of lowering the price by reason of broadening the field of supply. The manufacturer also benefits from the well-known economies accompanying mass production.

The lists of manufacturers willing to certify to the quality of certain commodities are made by corresponding with, as nearly as possible, all the manufacturers of that product and listing only those who signify their willingness to certify to the purchaser, when requested to do so, that the commodities delivered actually comply with the commercial standard.

Obviously, the purchaser making use of the lists of willing-to-certify manufacturers will select therefrom such manufacturers as are known (or assumed) by him to be reliable.

*Members of subcommittee on fuel oil, American Society for Testing Materials.

The trend toward the purchase of materials of certified quality from sources shown on such willing-to-certify lists supplies added incentive to standardization on the part of other producers, and thus the benefits of the certification plan will be felt by purchasers either directly or indirectly, whether or not they make use of the plan themselves.

## COMMERCIAL STANDARDS SERVICE

Industry has long sensed the need for a wider application and use of specifications developed and approved by nationally recognized organizations. To assist these bodies and the producers and consumers in securing this result and as a natural outgrowth of the movement toward elimination of waste through simplified practice, the Bureau of Standards has set up a procedure under which specifications, properly indorsed, may be printed as official publications of the Department of Commerce and promulgated as commercial standards. This service parallels that of simplified practice in many respects, and is available only upon request.

Broadly speaking, the aim is to continue the same character of cooperative service in this field that is being rendered in simplification. The division of trade standards is not designed to act as a standardizing body, nor will it engage in the preparation of specifications. Its service is mainly promotional in character, since its chief mission is to get behind a standard or a specification which any branch of industry may want to promulgate on a nation-wide basis; to determine its eligibility for promulgation; to publish and broadcast it in the event the prerequisites of procedure have been met, including a satisfactory majority acceptance; to facilitate the application of the certification plan for the assurance and convenience of the purchaser; to provide means for periodic audits of adherence; and to cooperate with the Bureau of Foreign and Domestic Commerce in determining the desire of industry relative to translation and promulgation of such specifications as a basis for foreign commerce.

In general, it may be said that a simplification covers types, sizes, and varieties of a commodity which are retained by industry on the basis of demand, whereas a commercial standard establishes definite requirements as to grade, quality, or dimensional tolerances in addition to any limitation of variety desired and accepted by the industry.

## ORGANIZATION AND DUTIES OF STANDING COMMITTEE

In order to carry on the aims and desires of the industry in the standardization of their product, a standing committee is appointed at the general conference. This committee consists of members from each division of the industry, namely, producers, distributors, and consumers, and thus reflects the well-balanced viewpoint of all concerned.

The members of the committee receive all suggestions regarding the commercial standard and consider its revision in the event that such action is desirable and mutually beneficial.

If the commercial standard does not warrant revision, it is reaffirmed in its existing form, but if any important changes are found desirable, their adoption is recommended by the committee, whereupon the

industry is again solicited for written acceptance of the standard in its revised form.

The committee is, in effect, a centralizing agency for criticisms and comments regarding the commercial standard and is charged with the responsibility of recommending revisions to keep the standard abreast with current industrial practice.

The proper functioning of the committee requires that, when necessary, its members be willing to attend meetings held at some central place, although in many cases it will be possible to conduct the work by correspondence.

When any deceptions in reference to the commercial standard are reported to the standing committee, it applies moral suasion or such other corrective measures as seem desirable. The Department of Commerce has no police power to compel adherence, therefore, it is incumbent upon the standing committee to do all in its power to encourage all divisions of the industry to follow the provisions of the commercial standard and contribute in every way possible to its general adoption and usefulness.

## YOUR COOPERATION

As a producer, distributor, or consumer of some of the commodities for which commercial standards have already been established, you are in a position to avail yourself of the benefits arising from the use of quality standards and incidentally to add impetus to this method of eliminating waste.

The first step is a declaration in favor of the standard by recording your intention to adhere, as closely as circumstances will allow, to the standards for those products which you may buy or sell.

The receipt of your signed acceptance will permit the listing of your company in new editions of the commercial standards that you accept.

You will, of course, want to examine any commercial standards before signing a formal acceptance. The commercial standardization group will, therefore, furnish a copy of any standard under consideration for acceptance. To facilitate this procedure, a list appears on page 14 that may be checked and mailed to the commercial standardization group, Bureau of Standards, Washington, D. C. The publications may also be secured singly or in quantities at a nominal price from the Government Printing Office. Prices will be furnished upon request.

The acceptance of a commercial standard is an entirely voluntary action and applies to the production, sale, and use of stock items. It is not meant to interfere with the manufacture or sale of special sizes and types sometimes required.

Trade associations and individual companies often distribute large numbers of the printed standard for the information and guidance of their members or customers. In such cases it is possible to extend the scope and degree of adherence by urging each recipient to send in an acceptance, bearing in mind that the practical value of any standardization is measured by the observance it receives.

An acceptance form for the commercial standard herein covered is included on page 11.

## ACCEPTANCE OF COMMERCIAL STANDARD

**Please Sign and Return This Sheet to Commercial Standardization Group, Bureau of Standards, Washington, D. C.**

Date _____

COMMERCIAL STANDARDIZATION GROUP,
BUREAU OF STANDARDS,
*Washington, D. C.*

GENTLEMEN:

We, the undersigned, do hereby accept the original draft of the commercial standard, as our standard practice in the production [1] / distribution [1] / use [1] } of _____,

beginning _____, and will use our best effort in securing its general adoption.

To permit intelligent review of the effectiveness of the commercial standard every year by an accredited committee of all interests, working in cooperation with the Department of Commerce, we plan to supply all data, upon request, which may be necessary for the development of constructive revisions. It is understood that any suggested modifications will be submitted as soon as formulated, and shall not be promulgated until accepted in form similar to this recommendation.

(Cut on this line)

Signed _____

(Kindly typewrite or print the following lines)

Title _____

Company _____

Street address _____

City and State _____

We are members of the following associations or other organizations interested in the production, sale, or use of

_____

_____

_____

_____

_____

[1] Please designate which group you represent by drawing lines through the other two. 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

In signing the acceptance blank, please bear the following points clearly in mind:

1. *Adherence.*—The Department of Commerce has no regulatory powers to enforce adherence to the commercial standards. Instead, this waste-elimination program is based on voluntary cooperation and self-government in industry. To make this specific standardization operate as a satisfactory example of self-government, it is highly desirable that it be kept distinct from any plan or method of governmental regulation or control. It will be successful according to the degree to which manufacturers, distributors, and purchasers adhere to its terms and conditions.

2. *The industry's responsibility.*—The department cooperates only on the request of the industry and assumes no responsibility for industrial acceptance or adherence. This program was developed by the industry on its own initiative. Its success depends wholly on the active cooperation of those concerned.

3. *The acceptor's responsibility.*—You are entering into an entirely voluntary arrangement, whereby the members of the industry—the distributors and consumers of the product, and others concerned—hope to secure the benefits inherent in commercial standardization. Those responsible for this standard realize that instances may occur in which it will be necessary to supply or purchase items not included therein. The purpose is, however, to secure wider support for nationally recognized standards covering grade, quality, and other characteristics of products. *Consumers* can make the program a success if, in their purchasing, they will make a definite and conscientious effort to *specify in terms of this commercial standard.*

4. *The department's responsibility.*—The function performed by the Department of Commerce is fourfold: First, to provide a neutral agency which will insure adequate consideration of the needs of all interests; second, to supply such assistance and advice in the development of this program as past experience with similar programs may suggest; third, to solicit and record the extent of adoption and adherence to the standard; and fourth, to add all possible prestige to this standardization movement by publication and promulgation if and when it is adopted and accepted by all elements directly concerned.

## REQUEST FOR COMMERCIAL STANDARDS

(Cut on this line)

Date ----------

COMMERCIAL STANDARDIZATION GROUP,
BUREAU OF STANDARDS,
*Washington, D. C.*

DEAR SIRS:

The undersigned wishes to examine the commercial standards checked on the reverse side of this page with a view toward accepting them as our standard of practice in the production, distribution, or consumption of the standardized lines.

Signed ----------

(Kindly typewrite or print the following lines:)

Title ----------

Company ----------

Street address ----------

City and State ----------

## COMMERCIAL STANDARDS

| CS. No. | Item |
|---|---|
| 1–28. | Clinical thermometers. |
| 2–29. | Surgical gauze (preparation postponed). |
| 3–28. | Stoddard solvent. |
| 4–29. | Staple porcelain (all-clay) plumbing fixtures. |
| 5–29. | Steel pipe nipples. |
| 6–29. | Wrought-iron pipe nipples. |
| 7–29. | Standard weight malleable iron or steel screwed unions. |
| 8–29. | Plain and thread plug and ring limit gage blanks (in preparation). |
| 9–29. | Builders' template hardware. |
| 10–29. | Brass pipe nipples. |
| 11–29. | Regain of mercerized cotton yarns. |
| 12–29. | Domestic and industrial fuel oils. |
| 13–30. | Dress patterns. |
| 14–29. | Boys' blouses, waists, shirts, and junior shirts (in preparation). |
| 15–29. | Men's pajamas (in preparation). |
| 16–29. | Wall paper. |
| 17–30. | Diamond core drill fittings (in preparation). |
| 18–29. | Hickory golf shafts (in preparation). |

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