TESTING
For
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UNDERWRITERS' LABORATORIES, INC.

ORGANIZATION
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PROCEDURES
SERVICES AVAILABLE

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ORGANIZATION-PURPOSE ........................................ 4
FACILITIES-EQUIPMENT ........................................... 6
SERVICES AVAILABLE .............................................. 8
  PRODUCT LISTING SERVICE ...................................... 8
    Application For Investigation ............................... 8
    Cost of Investigation ....................................... 9
    Product Samples Required ................................... 10
    Time Required ................................................ 10
    Report and Procedure ....................................... 10
  LISTING AND FOLLOW-UP SERVICE ................................. 12
    General ........................................................ 12
    Follow-Up Service ......................................... 12
    Identification of Listed Products ......................... 13
    Cost of Services ........................................... 13
  CLASSIFICATION SERVICE ....................................... 14
  COMPONENT RECOGNITION SERVICE ................................. 14
  CERTIFICATE SERVICE ......................................... 15
  INSPECTION SERVICE ........................................... 15
  FACT-FINDING AND RESEARCH .................................. 15
ACCEPTANCE OF FINDINGS ........................................... 16
  APPEALS FROM LABORATORIES' OPINIONS ........................... 16
ENGINEERING COUNCILS ............................................ 17
COMMERCIAL AND INDUSTRIAL EQUIPMENT ............................. 18
  USERS ADVISORY CONFERENCES .................................. 18
CONSUMER ADVISORY COUNCIL ..................................... 18
  Membership of Consumer Advisory Council ..................... 19
PUBLICATIONS ...................................................... 20
  Listing Cards ................................................ 20
  Product Directories ......................................... 20
  The Standards .............................................. 21
  Research Bulletins .......................................... 21
  Card Data Service ........................................... 21
CORPORATE ORGANIZATION ........................................ 22
  Board of Trustees ........................................... 22
  Officers .................................................... 24
MEMBERSHIP OF ENGINEERING COUNCILS ............................. 24
  Burglary Council ............................................ 24
  Casualty Council ............................................ 25
  Electrical Council .......................................... 25
  Fire Council ................................................ 26
  Marine Council .............................................. 28
UL REPRESENTATIVES ............................................... 29
STANDARDS OF SAFETY INDEX .................................... 31
UNDERWRITERS’ LABORATORIES, INC., founded in 1894, is chartered as a not-for-profit organization under the laws of the State of Delaware, to establish, maintain, and operate laboratories for the investigation of materials, devices, products, equipment, constructions, methods and systems with respect to hazards affecting life and property.

A NOT-FOR-PROFIT CORPORATION

The Certificate of Incorporation states:

“The corporation shall have no capital stock. Its activities for the furtherance of its objects and purposes shall be for service and not for profit. No distribution of any of its property, assets, or income, or of any portion of them, however or wherever acquired, shall ever be made to or among any of its members, either by way of dividends or distributions, in liquidation or otherwise, but all of its property shall be considered and deemed to have been, and hereby is, dedicated to the accomplishment or furtherance of its objects and purposes. In the event of a dissolution of the corporation, its property and assets shall be transferred in trust for the furtherance of the objects of its incorporation in such manner and under such conditions and to such persons, firms, associations or any corporations, as its membership, by majority designation, may appoint.”

OBJECTIVES

As stated in the Certificate of Incorporation, the objectives are:

“By scientific investigation, study, experiments, and tests, to determine the relation of various materials, devices, products, equipment, constructions, methods, and systems to hazards appurtenant thereto or to the use thereof, affecting life and property and to ascertain, define and publish standards, classifications and specifications for materials, devices, products, equipment, constructions, methods, and systems affecting such hazards, and other information tending to reduce and prevent loss of life and property from such hazards.

“To contract with manufacturers, governmental agencies and others, for examination, classification, testing and inspection of materials, devices, products,
equipment, constructions, methods, and systems with reference to hazards appurtenant thereto or to the use thereof affecting life and property; and to report and circulate the results of such examination, test, inspection, and classification to insurance organizations, public safety authorities, governmental bodies or agencies, other interested parties and the public by the publication of lists and descriptions of such examined, tested, inspected or classified materials, devices, products, equipment, constructions, methods and systems by the provision for the attachment of markings or labels thereto or issuance of certificates thereon, or in such other manner as from time to time may be deemed advisable."

The Laboratories, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or subscriber to any other party. The opinions and findings of Underwriters' Laboratories, Inc. represent its judgment given with due consideration to the necessary limitations of practical operation. The Laboratories does not warrant or guarantee the correctness of its opinions, or that its findings will be recognized or accepted.

Many products investigated by Underwriters' Laboratories, Inc. may cease to meet its Standards or requirements because of misuse, exposure to adverse conditions, failure to follow instructions, failure to inspect and maintain the product and its constituent components, or other factors occurring after manufacture which affect the safety of the product. Underwriters' Laboratories, Inc. does not and cannot attempt to anticipate all abnormal conditions. Its Standards and requirements are predicated upon proper use and maintenance within the normal useful life of the product, as well as the assumption of certain stipulated abnormal conditions wherein the product must perform in a safe manner. Its opinions, findings, and evaluations are based upon and limited by these assumptions.
Examination and tests of submitted products are conducted by experienced engineers in one or more of the following departments: Burglary Protection and Signaling, Casualty and Chemical Hazards, Electrical, Fire Protection, Heating, Air Conditioning, and Refrigeration, and Marine.

The equipment of the Laboratories allows comprehensive investigations to be conducted at convenient locations. Offices and testing stations are located at Chicago and Northbrook, Illinois; Melville, New York; Tampa, Florida; and Santa Clara, California.

The corporate office and a testing station located in Chicago, Illinois contains an Electrical Department, a section of the Fire Protection Department, and the headquarters of the Follow-Up Services Department.

The largest facility is at Northbrook, Illinois, and provides for large-scale tests conducted both indoors and outdoors. The Burglary Protection and Signaling, Casualty and Chemical Hazards, Heating, Air-Conditioning and Refrigeration Departments, and most of the Fire Protection Department are located at Northbrook.

The Melville, New York office and testing station provides a laboratory facility where the examination and testing of electrical equipment and fire alarm signaling apparatus can be conducted for manufacturers on the East Coast.

The Santa Clara, California office and testing station provides conveniently located test facilities for manufacturers on the West Coast. It is equipped for the examination and test of most electrical products, gas and oil equipment, and heating, air-conditioning and refrigeration equipment. Facilities are also provided for the flame spread testing of building materials, and for tests in other classifications investigated by UL. Products of certain types, sizes, and ratings must be sent to Chicago or Northbrook for test, as some of the more elaborate testing equipment cannot be duplicated economically.

The newest addition to UL facilities is the Marine Department (formerly the Yacht Safety Bureau) in Tampa, Florida. Testing of pleasure boats and equipment is done at this location.

Of equal importance with the examination and test work of Underwriters' Laboratories, Inc., is its Follow-Up Service in the factories where Listed devices are manufactured. This service is described on Pages 12 to 13.

Representatives charged with the responsibility for making periodic inspections are located in approximately 187 cities throughout the United States and in some foreign countries.
Measuring ignition point of plastic material.

The resistance of roof assemblies to the wind uplift forces experienced in wind storms is determined in this test apparatus.
Underwriters’ Laboratories, Inc. has six basic services it offers to manufacturers, inspection authorities or government officials. These are: Product Listing Service, Classification Service, Component Recognition Service, Certificate Service, Inspection Service, and Fact-finding and Research.

Following is a brief description of these various services. Anyone interested in more details should contact the nearest UL laboratory.

PRODUCT LISTING SERVICE

This is the most widely recognized of UL’s services. Products or systems are evaluated with respect to hazards to life and property.

Application for Investigation

A submitter desiring to secure an investigation and Listing of his product may address Underwriters’ Laboratories, Inc. at any of its testing stations, giving a description of the product in order that its character, purpose, size, rating, and other features may be understood. Such information makes it possible to determine in a general way the probable nature and extent of the necessary examinations and tests. If available for the product, the submitter may obtain a copy of the appropriate Safety Standard which contains the requirements.

An application form is sent to the submitter specifying a preliminary deposit, the maximum cost of engineering services, the work to be performed under the application, and the Follow-Up Service to be established if the product is found eligible for Listing.

If requested, the tests proposed will be discussed with the submitter either by correspondence or interview. An appointment may be made for his representative to witness the tests if desired.

Construction details are checked and physical properties of wires, cords, cables, hose of various types and other materials containing parts of rubber or plastic are determined in this testing area.
Cost of Investigation

A submitter makes a preliminary deposit with his original application based upon the nature and extent of the examination and tests anticipated. On completion of the work the submitter pays the balance of the cost, based on time and material charges. In the case of extensive or long-continued investigations, bills may be rendered periodically as the work progresses.

The cost of examination, tests, related conferences, etc., is applicable to any investigation, whether or not the samples show compliance with the requirements under which they are examined. The applicant's obligation to pay the charge is, therefore, the same whether the work does or does not lead to a Listing, or is found acceptable under the investigation performed.

To avoid the accrual of cost beyond the expectation of the applicant, a cost limit is established whenever possible. The Laboratories, however, is frequently asked to make investigations of subjects for which records are not available as a basis for advance cost estimates, or which are understood to be indeterminate in their extent. The amount of the preliminary deposits, under such applications, depends upon the estimated extent of the investigation. Invoices are rendered monthly as the work proceeds.

The cost limit shown in the individual application covers only one examination and one set of tests on a single pattern of device, system, or material, concluded by a Report to the submitter. Traveling expenses, carriers' charges, reimbursable expenses, or other advances to the account are not included in the cost limit set in the application. A statement of the cost of the work is rendered, with credit for the amount of the preliminary deposit. The balance is due on presentation of the invoice, as costs do not provide for the extension of credit. When the total cost is less than the amount of the preliminary deposit, the balance is returned.

A request for further examination or tests may be considered as a new application, or as a "supplementary application," and may require a new preliminary deposit.
Product Samples Required

In some cases one sample of the product is sufficient for the investigation, while in others several may be required, depending upon the number and nature of examinations or tests deemed necessary for the classification. The submitter is advised of the character and number of samples required after the program of investigation is determined. Samples may be damaged or completely destroyed during the investigation. Samples not completely destroyed are returned to the submitter unless authorization is received for scrapping.

Investigation of products or systems which cannot readily be shipped to the Laboratories may be made at the submitter's factory at additional cost covering the engineer's travel and living expenses.

In the case of products or systems involving a number of structural parts, or when large expense would be incurred for shipment, preliminary reports may be rendered following a review of detailed blueprints and specifications.

Investigations are normally conducted on factory production samples. Pre-production samples may be examined and tested and a report made to the submitter for his information and guidance in further development of his product. Listing will be contingent upon acceptance of actual production samples.

Time Required for Investigation

The time required for the completion of the investigation necessarily varies in accordance with the character of the product, system, or material, and the requirements under which it is to be judged. Before starting the program, an indication is given of the time that should be required.

Report and Procedure

The investigation of the product may or may not result in Listing. If the product is found not to be in compliance with the requirements, a report of the Laboratories' findings will be made to the submitter. The report, which presents the results of tests conducted and any construction features not in compliance with the requirements, provides the manufacturer with information for the submission of corrected or improved samples.

If the product is found to be eligible for Listing, a Follow-Up Service Procedure and any appropriate report will be prepared in anticipation of the establishment of Listing and Follow-Up Service. The Procedure identifies, describes, and sets forth the requirements for the Listed products and specifies the UL Listing Mark to be used on it.
Types of labels which appear on products Listed by Underwriters' Laboratories, Inc.

UL technician prepares to remove test sample from Steiner Tunnel Furnace.
LISTING AND FOLLOW-UP SERVICE

General

Upon successful completion of the investigation, and after agreement to the terms and conditions of the Listing and Follow-Up Service, the Laboratories publishes the names of the companies who have demonstrated the ability to provide a product conforming to the established requirements. Listing signifies that production samples of the product have been found to comply with the requirements, and that the manufacturer is authorized to use the Laboratories’ Listing Mark on the Listed products which comply with the requirements. It should be noted, however, that Listed products are not necessarily equivalent in quality or merit.

Follow-Up Service

The Listing of the product, as already described, is contingent upon the establishment of the Laboratories’ Follow-Up Service. The nature of the Service to be applied to a particular class of product rests with the Laboratories.

The Follow-Up Service is designed to serve as a check on the means which the manufacturer exercises to determine compliance of the product with the requirements of the Laboratories. Experience has shown that a program of this nature can be operated efficiently without calling upon the manufacturer to give undue publicity to his manufacturing processes or subjecting him to unwarranted production delays.

Under the Follow-Up Service the manufacturer attaches labels, markers or other authorized evidences of Listing (Listing Marks) to such of his products as are found by him to be in compliance with UL requirements.

Representatives of the Laboratories make periodic examinations or tests of the products at the factory and may, from time to time, select samples from the factory, the open market, or elsewhere, to be sent to a Laboratories’ testing station for examination or test to determine compliance with the Laboratories’ requirements.

Should examination and tests by the Laboratories’ representative disclose features not in compliance with the requirements, the manufacturer is required either to correct such items or to remove the Listing Mark from the product.
Identification of Listed Products

The Listing Mark of Underwriters' Laboratories, Inc. is the only means provided for the identification of Listed Products produced under the Follow-Up Service. The appearance of a company's name in the published Lists of Underwriters' Laboratories, Inc. does not signify that all of the manufacturer's products are Listed under the Follow-Up Service. Only those products bearing the Listed company's name and the Listing Mark should be considered as being Listed by Underwriters' Laboratories, Inc.

The name Underwriters' Laboratories, Inc. in various forms and abbreviations and the ® symbol are registered with the U.S. Patent Office, and in numerous foreign countries, as certification marks. Listed subscribers, subject to the terms of a Listing and Follow-Up Service Agreement, are permitted to use specified forms of the Laboratories' name or symbols as a Listing Mark on products which are Listed and which comply with the Laboratories' requirements.

The Listing Mark generally appears in one of the following forms, together with the product designation.

Certain Listed products which are authorized to bear the Listing mark may also be covered under a service designated as “Listed by Report.” These are usually products or constructions for which there are no generally recognized installation requirements. The description of such product or construction, and information concerning proper field assembly and/or installation, are contained in a Report identified by the reference and date shown by the Listing. Copies of the Report may be obtained upon application to the manufacturer.

Cost of Follow-Up Services

The cost of the Service is covered by charges which vary according to the nature and extent of follow-up services required. Charges are billed to the subscriber at current rates in effect. If rates are changed, written notice is sent to all affected subscribers.
CLASSIFICATION SERVICE

Under this service the Laboratories will evaluate and classify products with respect to specific hazards, limitations or conditions of performance. This service is for the guidance of builders, rating bureaus, inspection authorities, commercial and industrial users, and retailers.

Identification of Classified Product

Products covered under this service are identified by a Classification Marking which consists of the statement:

Classified by Underwriters' Laboratories, Inc. with respect to (nature of hazard) only.
(Necessary rating or classification)

Such classified products are published in an annual "Index of Classified Products," and in the Quarterly Supplement issued throughout the year.

The application for Classification Service, cost, samples required, report and follow-up service are generally the same as for Listing Service covered on pages 8-12.

COMPONENT RECOGNITION SERVICE

This service covers the evaluation of component parts which will be later used in a complete product or system. These parts would be incomplete in construction or restricted in performance capabilities so as not to warrant their acceptance as field-installed components. They would be intended solely as factory-installed components in other equipment covered by the Listing, Classification or Certificate Service of UL.

Identification of Recognized Components

Except where otherwise specified in the general information for the classification, the Recognized Marking consists of the manufacturer's identification and catalog number, model number, or other product designation as specified under "Marking" for the particular Recognition. A "Recognized Component Index" is published annually.

The application for Recognition Service, cost, samples required, report and follow-up service are generally the same as covered on pages 8-12.
CERTIFICATE SERVICE

For certain types of products which have met UL requirements, a Certificate is provided which the manufacturer may use to identify quantities of material intended for specific job sites or to identify field installed systems. In these cases it is impractical to apply the UL Listing Mark or Classification Marking to the individual product. The extent of protection, coverage time limit or classification is indicated on the Certificate.

The authorized UL Certificate is issued by the installer or manufacturer to property owners or ultimate users.

The application for service, cost, samples required, report and follow-up service are generally the same as covered on pages 8-12.

INSPECTION SERVICE

UL's trained inspectors located throughout the United States and many foreign countries are available to perform specific inspections for inspection authorities, government officials and others. This service is limited to the specific arrangements made.

Upon completion of the inspection a report is issued. No result of the inspection is published, no follow-up inspection is made, nor is a UL marking applied to the inspected product, system or situation. Cost is based on the time, expenses, and materials required.

FACT-FINDING AND RESEARCH

Projects conducted on contract basis for manufacturers, trade association, government agencies, and others in the interest of public safety.

Fact-Finding investigations develop product or system information and data for use by applicant in seeking recognition in or amendment of a nationally-recognized installation code or standard.

Research develops basic information, properties, and characteristics of materials, products and systems as related to safety to life or property—generally in the area of standards development.

A report is issued upon completion of the investigation. No results are published, no follow-up inspection is made, nor is a UL marker issued. The cost of this service is based on time, expense and materials required.
The wide experience and the methods employed over a long period of years in maintaining close and co-operative contact with manufacturers, users, inspection authorities, and others in a position to furnish information of practical value, has resulted in general recognition of the Standards, recommendations, and findings of Underwriters' Laboratories, Inc.

Many insurance underwriters, federal, state, and municipal authorities, plant operators, architects, building owners, and users recognize the Listing Mark of Underwriters' Laboratories, Inc., as evidence of acceptability in connection with their requirements for the installation and use of devices, systems, and materials having a bearing on hazards to life or property.

**APPEALS FROM LABORATORIES' OPINIONS**

In the event of a disagreement between Underwriters' Laboratories, Inc. and any of its clients with respect to an engineering or technical matter involving the method of measurement used in the tests applied by Underwriters' Laboratories, Inc., the results of the tests so used, or the interpretation of these results, the question may be submitted to the National Bureau of Standards; provided that in the opinion of the Bureau the importance of the case justifies its acceptance by the Bureau and that the parties to the submission agree in writing to accept and abide by the finding of the Bureau. Any costs involved shall be borne by the Laboratories and its clients.
UL has created Engineering Councils to assist in the establishment of its requirements to assure that its findings are, in fact, based on adequate consideration of practical field experiences as well as Laboratory tests and engineering judgment.

Members of the Councils are selected from persons having enforcement authority in the field of public safety, government officials having responsibility in establishing safety standards, and others having special knowledge and experience in the area of interest of the Council. Members are appointed by the Laboratories on the basis of personal qualifications and interest.

Final reports on product investigations may be sent to the appropriate Council for the comment of the members. This provides a countercheck on the findings of the staff with men of wide field experience. Copies of Standards and Reports which are submitted to the Casualty, Electrical and Fire Councils are also filed with the National Bureau of Standards.

The five Engineering Councils functioning in the Laboratories' major areas of interest are Burglary Protection, Casualty, Electrical, Fire Protection, and Marine.
Having the same objective as the Consumer Advisory Council, these conferences will provide information and field experience to the Laboratories based on the use of commercial and industrial products.

The chairman of each Commercial and Industrial Equipment Users Advisory Conference is a UL engineer in the capacity of a department manager or section head having responsibility for the product classification falling under the jurisdiction of that conference. The members of the conferences will be asked to provide input in the standards-making activity of those product classifications under the jurisdiction of their conference.

Membership has been established for eleven conferences: Building Materials; Burglary Protection & Signaling Systems; Equipment for Gases & Flammable Liquids; Fire Protection Equipment; Heating, Air Conditioning & Refrigeration; Industrial Hazardous Locations Products; Industrial Power Distribution Products; Industrial Trucks (internal-combustion engine); Medical and Dental Products; Products Classified as to Fire Hazard Only; and Products Submitted for Casualty Evaluation.

The purpose of the Consumer Advisory Council of Underwriters' Laboratories, Inc. is to establish more meaningful communication with informed consumer interests in the product safety field.

The members of the Consumer Advisory Council are drawn from various groupings within the United States of America Standards Institute, from representatives of organized consumer groups throughout the United States, from representatives of large mail order and department stores who have knowledge of and reflect a close concern for consumers, from representatives of government who have responsibilities involving consumers, and from persons who were formerly associated with public safety activities.

The broad responsibilities of this Council are as follows: To advise Underwriters' Laboratories, Inc. in establishing levels of safety for consumer products; to provide Underwriters' Laboratories, Inc. with additional user field experience and failure information in the field of product safety; and to aid in educating the general public in the limitations and safe use of specific consumer products.

The Consumer Advisory Council is one of the media through which Underwriters' Laboratories, Inc. disseminates information concerning the detection of new and unusual hazards associated with products, and conveys the limitations and restrictions to be exercised in the use of a product to enhance its safety.
CONSUMER ADVISORY COUNCIL MEMBERSHIP

S. D. HOFFMAN, J.D., Underwriters' Laboratories, Inc., Chicago, Chairman

Bert C. Ahrens.............................................National Association of Educational Buyers
Dr. L. B. Altman..........................................American Society of Agricultural Engineers
Theodore H. Anderson..................................Cos Cob, Connecticut
Paul E. Baseler..........................................House Springs, Missouri
R. J. Bishop..............................................Florida Department of Agriculture and Consumer Services
William G. Bohm.........................................American Hotel and Motel Association
Mrs. Judy Braiman........................................Consumer Association of New York, and
Rochester Committee for Scientific Information
Merwin M. Brandon......................................Baton Rouge, Louisiana
William Burston........................................National Retail Merchants Association
Loren S. Bush.............................................Oakland, California
Jane Byrne................................................Department of Consumer Sales, Weights and Measures, City of Chicago
Edward S. Clarkey.......................................American Insurance Association
Warren A. Clohisy.......................................Mail Order Association of America
Miss Jane Creel...........................................Homemaking Center, Lever Brothers
Norman H. Davis, Jr......................................Pearland, Texas
Charles A. Farish.......................................The National Sanitation Foundation
Monte Florman...........................................The Consumer’s Union of the U. S., Inc.
Dick Goodenote..........................................Sears, Roebuck and Company
Dr. Leland Gordon......................................Weights and Measures Research Center, Denison University
Hans Grigo................................................Chicago, Illinois
R. D. Hobbs...............................................National Association of Electrical Distributors
Fern E. Hunt..............................................School of Home Economics, Ohio State University
Mary-Beth Kuester.......................................Wisconsin Michigan Power Co.
Willis S. MacLeod......................................Alexandria, Virginia
Arron F. McCrary........................................American Hospital Association
K. L. McIntosh............................................Little Rock, Arkansas
Frank McLaughlin......................................President’s Committee on Consumer Interests
Wm. G. McLean..........................................School of Engineering, Lafayette College, Easton, Pennsylvania
G. E. Manning..........................................Service Managers Association, Inc.
Lawrence Markman......................................National Better Business Bureau, Inc.
H. B. Michael.............................................Sun City, Arizona
Frank J. Moch...........................................National Alliance of Television and Electronic Service Association
Thomas H. Moore.......................................Association of Illinois Electric Cooperatives
Rear Adm. C. P. Murphy.................................Rotterdam, The Netherlands
Sarah H. Newman......................................National Consumers League
Y. D. Oleksiw...........................................J. C. Penney Co., Inc.
Henry Ott................................................R. H. Macy and Company
Arnold C. Renner.......................................Clearwater, Florida
Douglas J. Roach........................................Hendersonville, Tennessee
Anna F. Rush............................................McCail’s Changing Times, the Kiplinger Magazine
Charles Schaeffer.......................................Association of General Merchandise Chains, Inc.
Phillip W. Schindel......................................Consumers’ Research, Inc.
F. J. Schlink..............................................San Francisco, California
E. J. Sheridan............................................Merchandise Research Laboratories
Charles L. Simon........................................Consumer Association of West Virginia
Mrs. J. N. Sizemore....................................Cooperative League of the USA
Shelby Southard.........................................San Francisco Redevelopment Agency
Mrs. Virginia Spaeth....................................American Federation of Labor-CIO
George H. Taylor........................................General Services Administration
Charles C. Travis.......................................American Association of University Women
Dr. Emogene Trexel.....................................American Hotel and Motel Association
Daniel J. Turcott........................................AIMCEE Wholesale Corporation
Kay Valory................................................Consumer Relations Counsel
Dr. T. R. VanDellen.....................................Chicago Tribune
Donald G. Vaughan....................................Groton, Connecticut
A. C. Veit................................................Laguna Hills, California
Dr. G. S. Wham...........................................Good Housekeeping Institute
Rose V. White............................................American National Standards Institute
William V. White.........................................Bureau of Product Safety, Department of Health, Education and Welfare
Mrs. Arness J. Wickens................................Consumer Program Adviser, U. S. Department of Labor
LISTING CARDS

The names of companies who have demonstrated the ability to provide Listed products under the Listing Service are promulgated on printed cards filed according to product classifications. The submitter is provided with a copy of each card bearing his name. Additional cards may be obtained at the cost of printing. Complete files of these Listing Cards are maintained at the offices of the principal boards of underwriters and inspection bureaus in the United States, at many of the general offices of insurance companies, in certain federal, state, and municipal departments, at the offices of the Laboratories, and at the offices of its representatives in many of the larger cities. Interested persons desiring to receive Listing Cards may subscribe to the Listing Card service at a nominal annual charge.

Listing Cards are used to compile the directories of Listed products in the form of Annual Lists and Quarterly Supplements.

PRODUCT DIRECTORIES

Lists

Underwriters' Laboratories, Inc. annually publishes the names of submitters whose products have met its Listing requirements and are subject to the Laboratories' Follow-Up Service described on pages 12 and 13. These Lists, and Quarterly Supplements thereto, are published regularly as indicated.

- Building Materials Directory: January
- Fire Protection Equipment List: January
- Fire Resistance Index: January
- Electrical Appliance and Utilization Equipment List: May
- Electrical Construction Materials List: May
- Hazardous Location Equipment List: May
- Marine Products List: July
- Accident, Automotive, and Burglary Protection Equipment List: September
- Gas and Oil Equipment List: November
- Classified Products Index: July
- Recognized Component Index: March
THE STANDARDS

The Standards of Underwriters' Laboratories, Inc., have been drawn up to provide specifications and requirements for the construction and the performance under test and in actual use of systems, devices, materials, and appliances of numerous classes submitted to the Laboratories. The requirements of these Standards (see pages 31 to 35, inclusive) are based upon sound engineering principles, research, records of tests and field experience. The problems of manufacture, installation, and use are considered after consultation with manufacturers, users, inspection authorities, and others having specialized experience. Standards are subject to revision as further experience and investigation may show is necessary or desirable.

RESEARCH BULLETINS

Underwriters' Laboratories, Inc. undertakes research projects in numerous areas of safety. Over 60 Research Bulletins have been published and are available. Write for the Directory of Research Bulletins.

CARD DATA SERVICE

General data on materials, devices, and special hazards disclosed in the Laboratories' investigations are distributed in condensed form on reference cards for the benefit of officials charged with public safety, the engineering personnel of insurance companies, boards and bureaus, and others interested in safety for life and property.
BOARD OF TRUSTEES

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Regional Administrator,
Occupational Safety & Health Administration, Chicago, Illinois

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Great American Insurance Companies, New York, New York

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Director, Emeritus,
National Bureau of Standards, Washington, D.C.

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Continental Illinois National Bank and Trust Co.,
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RICHARD O. SIMPSON
Deputy Assistant Secretary,
Commerce, Washington, D.C.
H. CLAY JOHNSON
CHAIRMAN, UL BOARD OF TRUSTEES
President and Chairman of the Boards,
Royal-Globe Insurance Companies,
New York, New York

DR. JAMES J. BROPHY
Vice-President, Illinois
Institute of Technology,
Chicago, Illinois

MRS. MARGARET DANA
Consumer Relations Counsel

PAUL C. LAMB
Consultant, Fire and
Accident Prevention,
Englewood, New Jersey

DR. FRANCIS L. LaQUE
Standardization Expert
Verona, New Jersey

DR. EDWARD PRESS
Egon State Health Officer
and Secretary of Oregon
State Board of Health

SHERMER L. SIBLEY
President, Pacific Gas and
Electric Co., San Francisco,
California

FREDERICK D. WATKINS
President, Aetna Insurance
Company, Hartford,
Connecticut

BARON WHITAKER
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Assistant Secretary
Mrs. A. Schuett
Chicago, Illinois
Assistant Secretary
H. G. Powell
Northbrook, Illinois
Assistant Treasurer

ENGINEERING COUNCILS

Burglary Protection Council
Donal Breting, Chicago, Chairman

Robert I. Bouck
Federal Reserve System,
Washington, D. C.
Kenneth Moritz
Hartford Accident & Indemnity Co.,
Hartford, Conn.
Harry Haacke
Marsh & McLennan, New York, N. Y.
D. D. Pillsbury
Insurance Service Office,
New York, N. Y.
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Maryland Casualty Company,
Baltimore, Md.
R. K. Ruesch
Continental Insurance Companies,
Chicago, Ill.
Dr. Richard Hellman
Small Business Administration,
Washington, D. C.
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International Conference of Building Officials, Whittier, Cal.

C. N. Christiansen
Bureau of Buildings, Portland, Ore.
<table>
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<tr>
<th>Name</th>
<th>Organization/Position</th>
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<td>Kern E. Church</td>
<td>North Carolina Insurance Department, Raleigh, N. C.</td>
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<td>E. H. Doane, Jr.</td>
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<td>James R. Dowling</td>
<td>American Institute of Architects, Washington, D. C.</td>
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<td>Buell B. Dutton</td>
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<td>Joseph F. Fitzgerald</td>
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<td>Hobart E. Fountain</td>
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<td>L. J. Gillis</td>
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<td>Alfred Goldberg</td>
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<td>National Aeronautics and Space Administration, Washington, D. C.</td>
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<tr>
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<td>General Services Administration, Washington, D. C.</td>
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<td>Albert Hole</td>
<td>California State Fire Marshal, Sacramento, Calif.</td>
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<tr>
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<td>Illinois Institute of Technology, Chicago, Illinois</td>
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<td>Fire Prevention and Engr. Bureau of Texas, Dallas, Texas</td>
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<td>P. H. Kesselring</td>
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<td>Fred R. Marcon</td>
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<td>C. Sutton Mullen</td>
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<td>M. B. Rook</td>
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<td>M. J. Sasser</td>
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<td>Thomas E. Scott</td>
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<td>Yale University, Hartford, Conn.</td>
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<td>Insurance Services Offices of Kentucky, Louisville, Ky.</td>
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<td>Arthur Spiegelman</td>
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<td>J. E. Troutman</td>
<td>Factory Insurance Association, Hartford, Conn.</td>
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</table>
M. Ray Walker  
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Les May, 2108 Emerson Road
<table>
<thead>
<tr>
<th>Item</th>
<th>Page</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna-Discharge Units</td>
<td>452</td>
<td>1967</td>
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<tr>
<td>Arc-Welding Machines, Transformer-Type</td>
<td>551</td>
<td>1971</td>
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<tr>
<td>Armored Cable</td>
<td>4</td>
<td>1970</td>
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<td>Attachment Plugs and Receptacles</td>
<td>498</td>
<td>1970</td>
</tr>
<tr>
<td>Ballasts, Fluorescent-Lamp</td>
<td>935</td>
<td>1971</td>
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<tr>
<td>Bead-Heated Equipment, Electric</td>
<td>62</td>
<td>1972</td>
</tr>
<tr>
<td>Beauty-Parlor Equipment</td>
<td>859</td>
<td>1971</td>
</tr>
<tr>
<td>Bedding, Electrically Heated</td>
<td>964</td>
<td>1972</td>
</tr>
<tr>
<td>Busways and Associated Fittings</td>
<td>857</td>
<td>1972</td>
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<tr>
<td>Cabinets and Boxes</td>
<td>50</td>
<td>1971</td>
</tr>
<tr>
<td>Capacitors</td>
<td>810</td>
<td>1971</td>
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<tr>
<td>Christmas-Tree and Decorative-Lighting Outfits</td>
<td>588</td>
<td>1971</td>
</tr>
<tr>
<td>Circuit Breakers, Branch-Circuit and Service</td>
<td>489</td>
<td>1970</td>
</tr>
<tr>
<td>Cleats, Knobs, and Tubes, Porcelain</td>
<td>511</td>
<td>1971</td>
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<tr>
<td>Clocks, Household Electric</td>
<td>826</td>
<td>1968</td>
</tr>
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<td>Conduit, Fiber</td>
<td>543</td>
<td>1971</td>
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<td>Conduit, Flexible Metal</td>
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<td>1971</td>
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<td>Conduit, Rigid Nonmetallic</td>
<td>646</td>
<td>1971</td>
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<td>Conduit, Rigid Metallic</td>
<td>651</td>
<td>1971</td>
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<tr>
<td>Cooking Appliances, Commercial Electric</td>
<td>197</td>
<td>1971</td>
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<tr>
<td>Cord Reels</td>
<td>355</td>
<td>1968</td>
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<tr>
<td>Cord Sets and Power-Supply Cords</td>
<td>817</td>
<td>1971</td>
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<tr>
<td>Data-Processing Units and Systems, Electronic</td>
<td>478</td>
<td>1970</td>
</tr>
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<td>Dishwashers, Commercial Electric</td>
<td>921</td>
<td>1972</td>
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<td>Dishwashers, Household</td>
<td>749</td>
<td>1970</td>
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<tr>
<td>Disposers, Waste</td>
<td>430</td>
<td>1970</td>
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<tr>
<td>Dry-Cleaning Machines, Commercial (Class IV), for Use in Hazardous Locations</td>
<td>664</td>
<td>1969</td>
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<tr>
<td>Electrical Circuits and Equipment, Intrinsically Safe, for Use in Hazardous Locations</td>
<td>913</td>
<td>1971</td>
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<tr>
<td>Electrical Metallic Tubing</td>
<td>797</td>
<td>1970</td>
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<tr>
<td>Electrode Receptacles for Gas-Tube Signs</td>
<td>879</td>
<td>1966</td>
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<tr>
<td>Emergency Lighting Equipment</td>
<td>924</td>
<td>1970</td>
</tr>
<tr>
<td>Fans, Electric</td>
<td>507</td>
<td>1970</td>
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<tr>
<td>Fence Controllers, Electric</td>
<td>69</td>
<td>1970</td>
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<tr>
<td>Fixtures, Electric Lighting</td>
<td>57</td>
<td>1971</td>
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<td>Fixtures, Electric Lighting, for Use in Hazardous Locations</td>
<td>844</td>
<td>1969</td>
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<tr>
<td>Fixtures, Electric Lighting, Marine Type</td>
<td>595</td>
<td>1969</td>
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<tr>
<td>Flashlights and Lanterns, Electric, for Use in Hazardous Locations, Class I, Groups C and D</td>
<td>783</td>
<td>1971</td>
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<tr>
<td>Flatirons and Ironing Machines, Electric</td>
<td>141</td>
<td>1971</td>
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<tr>
<td>Flexible Cord and Fixture Wire</td>
<td>852</td>
<td>1971</td>
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<tr>
<td>Floorings, Electrically Conducting</td>
<td>779</td>
<td>1971</td>
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<td>Frames, Electrically Illuminated</td>
<td>368</td>
<td>1969</td>
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<tr>
<td>Fuseholders</td>
<td>512</td>
<td>1970</td>
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<td>Fuses</td>
<td>198</td>
<td>1971</td>
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<td>Fuses, High-Interrupting-Capacity, Current Limiting Types</td>
<td>198.2</td>
<td>1971</td>
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<td>Fuses, High-Interrupting-Capacity, Capacity Class K Fuses</td>
<td>198.3</td>
<td>1972</td>
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<td>Gas-Tube-Sign and Ignition Cable</td>
<td>814</td>
<td>1969</td>
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<td>Grounding and Bonding Equipment</td>
<td>467</td>
<td>1970</td>
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<td>Heaters, Electric, for Use in Hazardous Locations, Class I, Groups C and D, and Class II, Groups E, F, and G</td>
<td>823</td>
<td>1971</td>
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<tr>
<td>Heaters, Electric, Dry Bath</td>
<td>875</td>
<td>1970</td>
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<tr>
<td>Heating Appliances, Electric</td>
<td>699</td>
<td>1971</td>
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<tr>
<td>Home-Laundry Equipment, Electric</td>
<td>560</td>
<td>1971</td>
</tr>
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<td>Industrial Control Equipment</td>
<td>508</td>
<td>1971</td>
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<td>Industrial Control Equipment for Use in Hazardous Locations</td>
<td>698</td>
<td>1972</td>
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<tr>
<td>Lampholders, Edison-Base</td>
<td>496</td>
<td>1970</td>
</tr>
<tr>
<td>Lampholders, Starters, and Starter Holders for Fluorescent Lamps</td>
<td>542</td>
<td>1972</td>
</tr>
<tr>
<td>Lamps, Portable Electric</td>
<td>153</td>
<td>1971</td>
</tr>
<tr>
<td>Lamps, Therapeutic</td>
<td>482</td>
<td>1968</td>
</tr>
<tr>
<td>Lighting Fixtures and Junction Boxes, Underwater, for Swimming Pools</td>
<td>676</td>
<td>1972</td>
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<td>Lighting Units, Portable Electric, for Use in Hazardous Locations, Class I, Groups C and D, and Class II, Group G</td>
<td>781</td>
<td>1971</td>
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<tr>
<td>Meter Sockets</td>
<td>414</td>
<td>1970</td>
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<td>Motor Control Center</td>
<td>845</td>
<td>1971</td>
</tr>
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<td>Motor-Operated Appliances</td>
<td>73</td>
<td>1970</td>
</tr>
<tr>
<td>Motors and Generators, Electric, for Use in Hazardous Locations, Class II, Groups F and G</td>
<td>674(a)</td>
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### ELECTRICAL DEPARTMENT—Continued

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<td>Class I, Groups C and D</td>
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<td>1972</td>
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<td>Nonmetallic-Sheathed Cables</td>
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<td>1970</td>
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<td>Office Appliances and Business Equipment</td>
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<td>1970</td>
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<td>Outlet Boxes and Fittings</td>
<td>514</td>
<td>1972</td>
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<tr>
<td>Outlet Boxes and Fittings for Use in Hazardous Locations,</td>
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<td>Class I, Groups A, B, C, and D, and Class II, Groups E, F, and G</td>
<td>886</td>
<td>1969</td>
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<tr>
<td>Pads, Electric Heating</td>
<td>130</td>
<td>1971</td>
</tr>
<tr>
<td>Panelboards</td>
<td>67</td>
<td>1972</td>
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<td>Power Outlets</td>
<td>231</td>
<td>1971</td>
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<tr>
<td>Power Roof Ventilators</td>
<td>705</td>
<td>1970</td>
</tr>
<tr>
<td>Printed-Wiring Boards</td>
<td>706</td>
<td>1968</td>
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<tr>
<td>Protectors for Motors, Thermal</td>
<td>547</td>
<td>1969</td>
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<tr>
<td>Raceways and Fittings, Cellular Metal Floor</td>
<td>209</td>
<td>1970</td>
</tr>
<tr>
<td>Raceways and Fittings, Surface Metal</td>
<td>5</td>
<td>1970</td>
</tr>
<tr>
<td>Raceways and Fittings, Underfloor</td>
<td>864</td>
<td>1970</td>
</tr>
<tr>
<td>Radio and Television Receiving Appliances</td>
<td>492</td>
<td>1970</td>
</tr>
<tr>
<td>Ranges, Household Electric</td>
<td>858</td>
<td>1972</td>
</tr>
<tr>
<td>Receptacle-Plug Combinations for Use in Hazardous Locations</td>
<td>1010</td>
<td>1972</td>
</tr>
<tr>
<td>Rectifiers</td>
<td>516</td>
<td>1968</td>
</tr>
<tr>
<td>Rosettes</td>
<td>351</td>
<td>1969</td>
</tr>
<tr>
<td>Scales, Electrically Illuminated</td>
<td>466</td>
<td>1971</td>
</tr>
<tr>
<td>Service-Entrance Cables</td>
<td>854</td>
<td>1971</td>
</tr>
<tr>
<td>Service Equipment</td>
<td>869</td>
<td>1972</td>
</tr>
<tr>
<td>Signs, Electric</td>
<td>48</td>
<td>1971</td>
</tr>
<tr>
<td>Sound-Recording and -Reproducing Equipment</td>
<td>813</td>
<td>1970</td>
</tr>
<tr>
<td>Space-Heating Equipment, Electric</td>
<td>573</td>
<td>1971</td>
</tr>
<tr>
<td>Switchboards, Dead-Front</td>
<td>891</td>
<td>1972</td>
</tr>
<tr>
<td>Switches, Enclosed</td>
<td>98</td>
<td>1970</td>
</tr>
<tr>
<td>Switches, Knife</td>
<td>363</td>
<td>1971</td>
</tr>
<tr>
<td>Switches, Snap</td>
<td>20</td>
<td>1971</td>
</tr>
<tr>
<td>Switches for Use in Hazardous Locations</td>
<td>894</td>
<td>1972</td>
</tr>
<tr>
<td>Tape, Insulating</td>
<td>510</td>
<td>1964</td>
</tr>
<tr>
<td>Temperature-Indicating and -Regulating Equipment</td>
<td>873</td>
<td>1972</td>
</tr>
<tr>
<td>Thermal Cutoffs for Use in Electrical Appliances and Components</td>
<td>1020</td>
<td>1972</td>
</tr>
<tr>
<td>Time-Indicating and -Recording Appliances</td>
<td>863</td>
<td>1971</td>
</tr>
<tr>
<td>Tools, Electric</td>
<td>45</td>
<td>1971</td>
</tr>
<tr>
<td>Tools, Stationary and Fixed Electric</td>
<td>987</td>
<td>1971</td>
</tr>
<tr>
<td>Toys, Electric</td>
<td>696</td>
<td>1970</td>
</tr>
<tr>
<td>Transformers, Specialty</td>
<td>506</td>
<td>1971</td>
</tr>
<tr>
<td>Trucks, Power-Operated Industrial</td>
<td>583</td>
<td>1967</td>
</tr>
<tr>
<td>Tubing, Extruded Thermoplastic Insulating</td>
<td>224</td>
<td>1972</td>
</tr>
<tr>
<td>Tubing, Flexible Nonmetallic</td>
<td>3</td>
<td>1969</td>
</tr>
<tr>
<td>Underground Feeder and Branch-Circuit Cables</td>
<td>493</td>
<td>1972</td>
</tr>
<tr>
<td>Valves, Electrically-Operated, for Use in Hazardous Locations, Class I, Groups A, B, C, and D, and Class II, Groups E, F, and G</td>
<td>1002</td>
<td>1971</td>
</tr>
<tr>
<td>Vending and Amusement Machines</td>
<td>751</td>
<td>1972</td>
</tr>
<tr>
<td>Water Heaters, Electric Storage-Tank</td>
<td>174</td>
<td>1971</td>
</tr>
<tr>
<td>Wire Connectors and Soldering Lugs</td>
<td>486</td>
<td>1971</td>
</tr>
<tr>
<td>Wired Cabinets</td>
<td>65</td>
<td>1970</td>
</tr>
<tr>
<td>Wire and Cables, Rubber-Insulated</td>
<td>44</td>
<td>1972</td>
</tr>
<tr>
<td>Wires and Cables, Varnished-Cloth</td>
<td>133</td>
<td>1971</td>
</tr>
<tr>
<td>Wires, Asbestos- and Asbestos-Varnished-Cloth-Insulated</td>
<td>115</td>
<td>1970</td>
</tr>
<tr>
<td>Wires, Thermoplastic-Insulated</td>
<td>83</td>
<td>1971</td>
</tr>
<tr>
<td>Wireways, Auxiliary Gutters, and Associated Fittings</td>
<td>870</td>
<td>1971</td>
</tr>
<tr>
<td>X-Ray Equipment</td>
<td>187</td>
<td>1971</td>
</tr>
</tbody>
</table>

### FIRE PROTECTION DEPARTMENT

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Ducts</td>
<td>181</td>
<td>1970</td>
</tr>
<tr>
<td>Air-Foam Equipment and Liquid Concentrates</td>
<td>162</td>
<td>1969</td>
</tr>
<tr>
<td>Alarm Accessories for Automatic Water-Supply Control Valves for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire-Protection Service</td>
<td>753</td>
<td>1971</td>
</tr>
<tr>
<td>Asbestos-Cement Pipe and Couplings</td>
<td>107</td>
<td>1970</td>
</tr>
<tr>
<td>Building Construction and Materials, Fire Tests of</td>
<td>263</td>
<td>1971</td>
</tr>
<tr>
<td>Chimneys, Factory-Built, Residential Type and Building Heating Appliance</td>
<td>103</td>
<td>1971</td>
</tr>
<tr>
<td>Chimneys, Factory-Built, Medium Heat Appliance</td>
<td>959</td>
<td>1971</td>
</tr>
<tr>
<td>Concrete Masonry Units</td>
<td>618</td>
<td>1970</td>
</tr>
<tr>
<td>Couplings for Rubber-Lined Fire Hose</td>
<td>236</td>
<td>1970</td>
</tr>
</tbody>
</table>
FIRE PROTECTION DEPARTMENT—Continued

Door Assemblies, Fire Tests of ......................................................... 10(b) 1970
Door Frames, Fire ........................................................................ 63 1970
Doors, Tin-Clad Fire ................................................................. 10(a) 1968
Doors, Vault and File-Storage-Room, Fire-Resistance Classification of ........................................... 155 1969
Extinguishers, Carbon Dioxide Fire .................................................. 154 1971
Extinguishers, Dry-Chemical Fire ........................................................ 299 1971
Extinguishers, Fire, Classes A, B, and C and Extinguishers or Agents, Class D, for Doors, Vault and File-Storage-Room, Fire-Resistance Classification of ................................................... 711 1969
Extinguishers, Fire, Water-Type, Cartridge-Operated, 2½-Gallon .................................................. 715 1970
Extinguishers, Fire, Water-Type, Storeaged, Pressure, 2½-Gallon .................................................. 626 1972
Extinguishers, Fire, Foam ................................................................ 8 1970
Extinguishers, Soda-Acid Fire ........................................................... 17 1969
Fabrics and Films, Flame-Resistant, Flame Tests of .................................................. 214 1971
Filter Units, Air ............................................................................. 900 1971
Filter Units, Air, High Efficiency Particulate ........................................................................ 586 1971
Fire Dampers ................................................................................... 555 1970
Fire Hazard Classification of Building Materials, Test Method for .................................................. 723 1971
Fire Hose Rack Assemblies ............................................................. 47 1972
Fireplaces, Factory-Built .................................................................. 127 1972
Fireplace Stoves ............................................................................. 737 1972
Fusible Links for Fire-Protection Service ................................................ 33 1970
Gas Vents ......................................................................................... 441 1971
Gauges, Indicating, Pressure, for Fire-Protection Service .................................................. 393 1970
Grease Extractors for Exhaust Ducts .................................................................................................. 394 1970
Hardware, for Stamping of Standard Tin-Clad Fire Doors .................................................................. 395 1970
Hardware, Swinging, for Standard Tin-Clad Fire Doors .................................................................. 14(c) 1970
Hydrants for Fire-Protection Service .................................................. 246 1969
Indicator Posts for Fire-Protection Service .................................................. 789 1971
Pipe Hanger Equipment for Fire-Protection Service .................................................. 203 1971
Pipe, Steel, for Underground Water Service ........................................................................ 888 1969
Pumps for Fire-Protection Service ...................................................... 448 1970
Record-Protection Equipment, Test for Fire Resistance of .................................................. 72 1971
Roof-Coverings, Built-Up, Materials for Use in Construction of .................................................. 55(a) 1970
Roof Jacks for Mobile Homes and Travel Trailers ........................................................................ 311 1971
Roofing and Shingles, Class “C” Asphalt Organic-Felt Sheet .................................................................. 55(b) 1970
Sprinklers, Automatic, for Fire-Protection Service ........................................................................ 199 1969
Unions, Pipe, for Flammable and Combustible Fluids and Fire-Protection Service ................................ 860 1969
Valves, Alarm for Fire-Protection Service ........................................................................ 193 1970
Valves, Dry-Pipe, Deluge, and Pre-Action for Fire-Protection Service .................................................. 260 1972
Valves, Gate, for Fire-Protection Service ........................................................................ 262 1970
Valves, Hose, for Fire-Protection Service .................................................................................. 668 1970
Valves, Swing Check, for Fire-Protection Service ........................................................................ 312 1970
Venting Systems, Low-Temperature, Type L ........................................................................ 641 1970
Window Assemblies, Fire Tests of .................................................................................. 9 1970

HEATING, AIR-CONDITIONING AND REFRIGERATION DEPARTMENT

Air-Conditioners, Central Cooling ................................................................ 465 1972
Air-Conditioners, Room ........................................................................ 484 1972
Condensing Units, Refrigeration ............................................................. 303 1971
Controls, Limit .................................................................................. 353 1972
Controls, Primary Safety, for Gas- and Oil-Fired Appliances ......................... 372 1971
Dehumidifiers .................................................................................. 474 1971
Draft Equipment ................................................................................ 378 1970
Fan-Coil Units, Room Type ................................................................... 883 1970
Gas Heating Equipment, Commercial-Industrial ........................................ 795 1972
Heat Pumps ......................................................................................... 559 1971
Heating Appliances, Liquid-Fuel-Burning, for Mobile Homes and Travel Trailers ................................ 370(a) 1969
Heating Appliances, Gas, for Mobile Homes and Travel Trailers .................................................. 307(b) 1965
Ice-Cream Freezers and Soda-Fountain Units ............................................. 621 1970
Ice Makers ......................................................................................... 563 1970
Insect Traps, Domestic Type ..................................................................... 791 1970
Motor-Compressors, Sealed (Hermetic Type) ................................................ 984 1972
Oil Burners ......................................................................................... 296 1970
Oil-Fired Air Heaters and Direct-Fired Heaters ................................................ 733 1957
**HEATING, AIR-CONDITIONING AND REFRIGERATION DEPARTMENT—Continued**

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil-Fired Boiler Assemblies</td>
<td>726</td>
<td>1971</td>
</tr>
<tr>
<td>Oil-Fired Central Furnaces</td>
<td>727</td>
<td>1971</td>
</tr>
<tr>
<td>Oil-Fired Floor Furnaces</td>
<td>729</td>
<td>1970</td>
</tr>
<tr>
<td>Oil-Fired Recessed Heaters</td>
<td>730</td>
<td>1957</td>
</tr>
<tr>
<td>Oil-Fired Unit Heaters</td>
<td>731</td>
<td>1957</td>
</tr>
<tr>
<td>Oil-Fired Water Heaters</td>
<td>732</td>
<td>1969</td>
</tr>
<tr>
<td>Oxygen Therapy Equipment, Refrigerated</td>
<td>116</td>
<td>1970</td>
</tr>
<tr>
<td>Refrigerant-Containing Components</td>
<td>207(c)</td>
<td>1970</td>
</tr>
<tr>
<td>Refrigerators, Commercial</td>
<td>471</td>
<td>1970</td>
</tr>
<tr>
<td>Refrigerators and Freezers, Household</td>
<td>250</td>
<td>1971</td>
</tr>
<tr>
<td>Stoves, Oil-Burning</td>
<td>896</td>
<td>1970</td>
</tr>
<tr>
<td>Vending Machines, Coin-Operated, Refrigerated</td>
<td>541</td>
<td>1971</td>
</tr>
<tr>
<td>Water Coolers, Drinking</td>
<td>399</td>
<td>1971</td>
</tr>
</tbody>
</table>

**BURGLARY PROTECTION AND SIGNALING DEPARTMENT**

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
<th>Year</th>
</tr>
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<tbody>
<tr>
<td>Bullet-Resisting Equipment</td>
<td>752</td>
<td>1968</td>
</tr>
<tr>
<td>Burglar-Alarm Units and Systems, Central-Station</td>
<td>611</td>
<td>1971</td>
</tr>
<tr>
<td>Burglar-Alarm Systems, Installation, Classification and Certification of.</td>
<td>681</td>
<td>1969</td>
</tr>
<tr>
<td>Burglar-Alarm System Units, Household</td>
<td>1023</td>
<td>1972</td>
</tr>
<tr>
<td>Burglar-Alarm Units and Systems, Local</td>
<td>609</td>
<td>1972</td>
</tr>
<tr>
<td>Burglary-Resistant Safes</td>
<td>687</td>
<td>1967</td>
</tr>
<tr>
<td>Combination Locks</td>
<td>768</td>
<td>1967</td>
</tr>
<tr>
<td>Connectors and Switches for use with Burglar Alarm Systems</td>
<td>634</td>
<td>1962</td>
</tr>
<tr>
<td>Control Units for Fire-Protective-Signaling Systems</td>
<td>864</td>
<td>1972</td>
</tr>
<tr>
<td>Glazing Material, Burglary Resisting</td>
<td>972</td>
<td>1972</td>
</tr>
<tr>
<td>Holdup-Alarm Systems</td>
<td>636</td>
<td>1969</td>
</tr>
<tr>
<td>Intrusion-Detection Units</td>
<td>639</td>
<td>1971</td>
</tr>
<tr>
<td>Key-Locked Safes</td>
<td>786</td>
<td>1970</td>
</tr>
<tr>
<td>Key Locks</td>
<td>437</td>
<td>1966</td>
</tr>
<tr>
<td>Night Depositories</td>
<td>771</td>
<td>1971</td>
</tr>
<tr>
<td>Protectors for Communication Circuits</td>
<td>497</td>
<td>1971</td>
</tr>
<tr>
<td>Relocking Devices</td>
<td>140</td>
<td>1963</td>
</tr>
<tr>
<td>Security File Containers</td>
<td>505</td>
<td>1958</td>
</tr>
<tr>
<td>Signal Appliances, Audible</td>
<td>464</td>
<td>1970</td>
</tr>
<tr>
<td>Signaling Boxes, Manually Actuated, for Use with Fire-Protective-Signaling Systems</td>
<td>38</td>
<td>1970</td>
</tr>
<tr>
<td>Smoke Detectors Photoelectric Type for Fire-Protective-Signaling Systems</td>
<td>168</td>
<td>1971</td>
</tr>
<tr>
<td>Tear-Gas Systems</td>
<td>600</td>
<td>1960</td>
</tr>
<tr>
<td>Tellers' Lockers</td>
<td>901</td>
<td>1960</td>
</tr>
<tr>
<td>Thermostats, Fire-Detection</td>
<td>521</td>
<td>1970</td>
</tr>
<tr>
<td>Timeclocks, Delayed-Action</td>
<td>887</td>
<td>1970</td>
</tr>
<tr>
<td>Transmitters, Electrically Actuated</td>
<td>632</td>
<td>1971</td>
</tr>
<tr>
<td>Vault Ventilators and Vault Ventilating Ports, Emergency</td>
<td>680</td>
<td>1971</td>
</tr>
<tr>
<td>Vehicle-Alarm Systems</td>
<td>904</td>
<td>1970</td>
</tr>
</tbody>
</table>

**MARINE DEPARTMENT**

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonintegral Marine Fuel Tanks</td>
<td>1102</td>
<td>1972</td>
</tr>
<tr>
<td>Marine Special Purpose Water Safety Buoyant Devices</td>
<td>1123</td>
<td>1972</td>
</tr>
</tbody>
</table>
AND TESTING STATIONS