



Lead is Standard for New Orleans Water Services

New Orleans, which plays host to the annual convention of the American Water Works Association this spring, approximately 85,000 lead water services are giving satisfactory service. Rigid connections have never been used because, in the opinion of the Sewerage and Water Board of New Orleans, they are not applicable to the city's needs, owing to the many obstructions encountered in the commercial and thickly populated areas which would necessitate the use of many extra fittings and entail considerable added expense. Services are installed at various depths, many of them shallow, and are thus especially subjected to settlement and vibration.

All water services in New Orleans are installed with lead pipe and brass fittings with wiped solder joints at juncture of pipe and fittings. The flexibility of lead pipe permits bending around obstructions without the use of extra fittings and also takes up settlement, while vibration can not shake bonded wiped joints loose.

Services range from $\frac{5}{8}$ in. to 2 in. Taps are made with Mueller tapping machine. Single $\frac{5}{8}$ in., $\frac{3}{4}$ in., and 1 in. taps are made in all size mains, and $1\frac{1}{2}$ in. taps in mains 12 in. and over. Two-inch taps are never made. Whenever $1\frac{1}{2}$ in. or 2 in. services have to be connected to small mains, two or more lead branches with wiped joints are substituted so that the sum of the cross-sectional area of the branches is equivalent to that of the larger service for which application was made.



View showing four 1 in. taps serving a 2 in. water service from a 6 in. main in New Orleans

CHAS. L. FRANK

The lead pipe is attached to a corporation cock with $\frac{1}{8}$ bend coupling, or tail piece, and at the other end by a solder nipple to a Crescent meter box, specially designed and manufac-

tured by the Ford Meter Box Co. This box is fitted on the inside with S. & W. cock and expansion connection complete for services from $\frac{5}{8}$ in. to $1\frac{1}{4}$ in. Larger services, $1\frac{1}{2}$ in. and 2 in., are similarly installed except that the S. & W. cock and meter are set in brick meter boxes with iron covers to permit removal of the meter without disturbing the pavement. Meters with and without flanges have been used but the Board prefers those equipped with flanges. In its opinion they are more easily installed and removed and require less fittings, as unions and plain nipples have to be used on both sides of meters to connect to those without flanges. Flange joints are never used on lead services at the main.

Goose-necks or branch connections made of lead pipe are used at both main and end of lead pipe inside of curb for future connections on long leads or services installed ahead of street paving from which extensions can be made. This obviates the necessity of many long services. All services are extended by the Water Board to 1 ft. inside of the property line.

Thus New Orleans, metropolis of the deep South, an unusual combination of the old and modern, and one of the world's great and historic ports, is assured of economical water services that perform long and satisfactorily. We are indebted to Alfred F. Théard, general superintendent of the Sewerage and Water Board of New Orleans for the information and photographs in this article.

SPECIFY **SEAL OF LEAD INDUSTRIES' MATERIAL** APPROVAL

tured by the Ford Meter Box Co. This box is fitted on the inside with S. & W. cock and expansion connection complete for services from $\frac{5}{8}$ in. to $1\frac{1}{4}$ in.

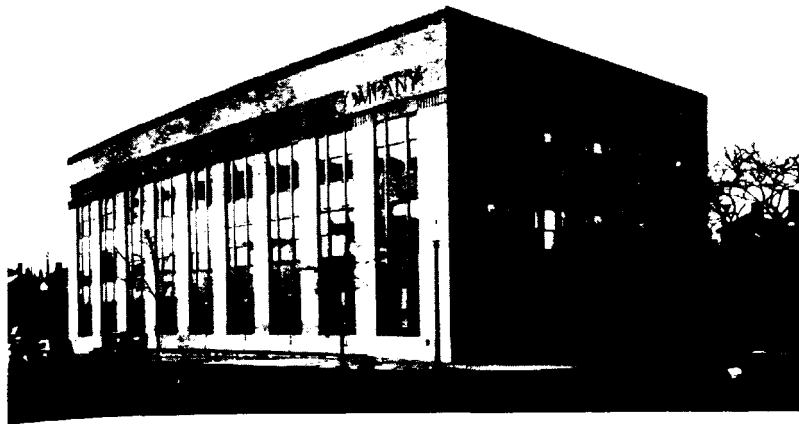
Larger services, $1\frac{1}{2}$ in. and 2 in., are similarly installed except that the



A $\frac{3}{4}$ in. tap and lead laid with $\frac{5}{8}$ in. branch connections serving a double cottage in New Orleans

CHAS. L. FRANK

Office Building Features White Lead Painted Interiors



BOECKER

General view of the Holyoke Mutual Fire Insurance Co., where pure lead and oil paint was used extensively throughout

IN specifying pure white lead and oil paints for the interiors of the Holyoke Mutual Fire Insurance Company's home office at Salem, Mass., the architects showed keen understanding of painting problems and judicious selection of materials. The offices are housed in a three-story reinforced-concrete building with exterior walls of light buff brick. The interior walls are plastered and painted with white lead tinted to buff and ivory tones.

Smith and Walker, Boston, Mass., were the architects for this building and fully appreciate the merits of white lead:

"We usually specify lead and oil for interior work and have yet to find any preparation which, for most purposes, is equal to first-class white lead and good linseed oil."

It is axiomatic to say that good painting is a justifiable and sound expenditure, whether for homes or for offices such as these. However, to gain the most return from such an investment, care should be taken to select materials which will provide maximum economy over a period of years. In this respect, pure white lead and oil paints will be found most economical and serviceable. Their durability and efficiency have been widely recognized for many years.

Repainting and retouching are brought to a minimum by the long life of lead paints, and also because surfaces painted with white lead need only be washed from time to time to regain their original cleanliness, freshness and attractiveness. This elimination of frequent repainting and

retouching is very desirable since these operations are usually accompanied with hectic disarrangement of office equipment and disturbing of office routine. Washing, however, largely eliminates this annoying and unnecessary disorder.

Furthermore, since white lead painted walls and ceilings may be kept clean by washing, the benefits obtained from the paint's high light reflectivity may be realized to the fullest extent. Lighter offices are more comfortable to work in and result in a decrease of electricity consumed and an increase in working efficiency. The danger of eye strain is considerably reduced.

Mixed on the job, white lead paint may be tinted to a wide variety of shades and colors, appreciably broadening the scope of decorative possibilities.

This makes pure white lead paint an ideal material for the application of modern paint styling, which is of great importance on interiors as well as exteriors. Today, paint styling calls for stippled finishes, stenciling, striping and the artistic selection of harmonizing and contrasting colors, effects which are easily obtained by competent painting contractors.

Durable, attractive and economical, pure white lead and oil paints give satisfactory results which are a credit to the architect and appreciated by his clients.

The painting contractor for this job was the H. Newton Marshall Co., of Quincy, Mass.



THE ROBE STUDIOS



BOECKER

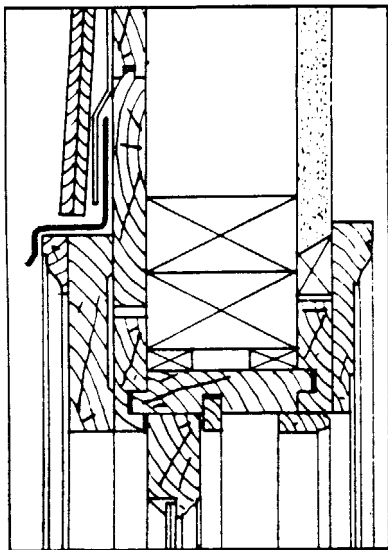
A typical office interior which has been painted with white lead, and a view of the first floor general office space of the building



KIRK MEARS

Putting finishing touches on the "Certigrade Home", painted with pure white lead throughout

PROBABLY the most talked about home in America at the present time is the "Certigrade Home" just constructed by the Red Cedar Shingle Bureau in Arlington County, Virginia, under Loan No. 1 of the amended Federal Housing Act. It has the cooperation and endorsement of the 20,000 retail lumber dealers of the country, represented in the National Lumber Dealers Association. Since this home is built as a demonstration of the fact that comfortable, economical, and well-built homes can be constructed with the finest materials for people with relatively low incomes and sold at a profit, pure white lead paint and sheet lead have been employed extensively in its construction.



Recommended installation of lead window flashing for frame construction

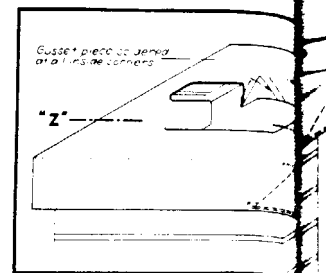
It has been carefully planned in every respect to be a "perfect" home and should do much to add impetus to the building industry and encourage construction of sound, low-cost housing.

Houses like this can be built for from \$3000 to \$4000, exclusive of lot, depending upon location, thus coming under the 90 per cent loan provisions of the new F.H.A. Yet these are not cheaply built, poorly constructed houses. In addition to all modern conveniences, they embody the finest structural features. For instance, double-coursed red cedar shingles painted with pure white lead and oil have been used for exterior walls. Thus the excellent insulating value of the double shingles is gained and the cheerful beauty and decorative possibilities of paint. All exterior sheet metal work is durable, non-staining sheet lead. Interior walls and ceilings are plywood with flush joints decorated with pure white lead paint. Both interior and exterior painting have been carried out in the latest style trends appropriate for this type of house.

Exterior Painting

All exterior shingle walls and trim were given three coats of pure white lead and oil, a flat finish being employed on the shingles. Trim paint was mixed from white lead paste in the usual way. Shutters and flower boxes were painted green and shingles and trim white. Paint for the shingles was mixed according to the accompanying formulas.

White Lead and Home "Built Up"



Recommended method

This paint treatment of the exterior makes a brightly cheerful house and offers the possibility of changing the colors and decorative treatment at any

Lead Anti-Vibration

LEAD'S effectiveness as a material for anti-vibration insulation is demonstrated by a delicate balance in the Central Experimental Laboratories of E. I. du Pont de Nemours & Company at Wilmington, Del., which accurately measures to one-millionth of a gram. It is used for micro-analytical work. The arm is balanced on a knife-edge of agate and the readings are taken with the aid of a powerful magnifying glass.

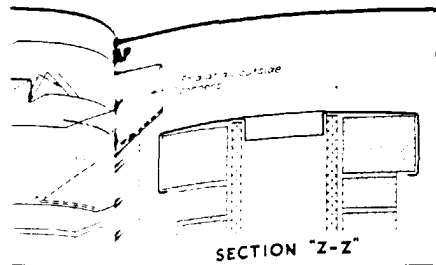
Naturally, the chemist who uses such an extremely delicate instrument must take adequate precautions for avoiding vibrations which would mar the accuracy of measurements. Consequently, the scale, enclosed in a glass case, rests on a heavy lead plate, one inch thick, with the lead plate cushioned by sponge rubber pads which, in turn, are set on a stone slab.

This is but one of the ways in which lead serves in combating vibration. To counteract



Micro-analytical

nd Lashing for "Certigrade t Und H. A. Loan No.1



ded meth lead chimney cap flashing

rior and the any desired time with many appropriate combinations. Furthermore, early repainting can be avoided because of the great durability of white lead. When

oratio Under Delicate Scale

the vibration caused by railroad trains, lead-asbestos pads are used under many buildings, notable among which are the Bell Telephone Laboratories Building in New York City, through the second floor of which pass freight trains of the New York Central Railroad. This installation was described in the March, 1933, issue of LEAD. Also in newspaper and industrial plants, printing presses and other machinery are often mounted on sheets of lead.

The same qualities of lead that make it applicable for anti-vibration insulation render this material advantageous for sound insulation, as evidenced by the recent installation of a lead-lining in a room in the General Physiology laboratory of the Sorbonne University (LEAD, May, 1937).

Lead is easily applied and has the advantage of taking little space in comparison with other materials used to block vibration.

analytical sc lead plate to prevent

Paint for Wood Shingles

	Priming Coat	Second Coat	Flat Finish Coat
Soft Paste White Lead	100 lb.	100 lb.	100 lb.
Linseed Oil	4 gal.	2 gal.	—
Pure Turpentine	1 3/4 gal.	3/4 gal.	—
Lead Mixing Oil or Lead Reducing Oil.	—	—	4 gal.
Liquid Drier	1 pt.	1 pt.	—
Gallons of Paint	9	6	7
Coverage per Gallon (Approximate)	200 sq. ft.	400 sq. ft.	600 sq. ft.

repainting is necessary or desired, it will be economical because no expensive preparation will first be required since white lead wears down smoothly and evenly, and always adheres firmly.

Sheet Metal Work

Lead was selected for all exterior sheet metal work permanently to prevent leakage at intersections and preclude repairs, and also to eliminate any possibility of unsightly stains disfiguring the beautiful exterior. Water running over lead flashing and then over other surfaces, such as painted shingles, does not cause discoloration.

In the "Certigrade Home", lead flashing was placed over all window and door heads, running up in back of the shingle siding. This effectively prevents entrance of moisture at these vulnerable points, which, if permitted, may cause paint and other troubles. Valleys are closed and flashed with sheet lead soakers, small pieces of flashing interwoven with the shingle courses and completely concealed. This treatment prevents leakage at roof slope intersections. Concealed lead flashing is also used on the ridge. The chimney is flashed with lead and a sheet lead cap placed over the top of the chimney to prevent leakage at that point. Lead downspouts were also specified on this home and lead gaskets used to make water-tight the joints in the wood gutters.

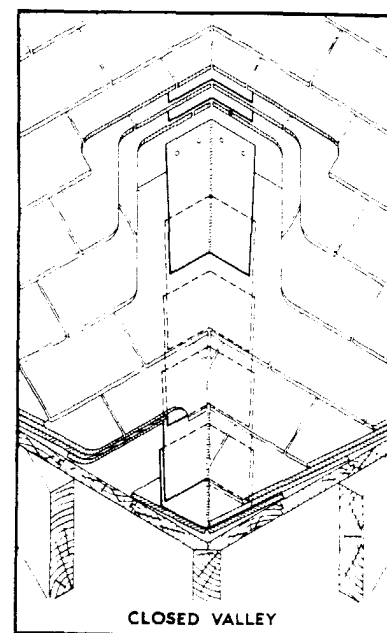
Interior Painting

A complete description of the interior painting of this house with pure white lead paint will be given in the

next issue of LEAD.

W. W. Woodbridge is manager of the Red Cedar Shingle Bureau, Seattle, Wash., which is constructing the "Certigrade Home", and W. D. Richardson, technical engineer of the Bureau, had charge of its construction. All the work was done by a local general contractor and sub-contractors, just as any home would be built in that or other communities.

We will be glad to assist builders with information on lead work and painting for the hundreds of similar houses that will probably be built all over the country using these excellent specifications.



Isometric detail of lead flashing on a closed valley

Lead Work Adds Distinction to Long Island Homes



Detail of the dormer window showing the lead-covered face, cheeks, and lead comes in window



Lead-roofed doorway on Great Neck home with skillfully delineated lead frieze

PHOTOS BY
WURTS BROS.

ORNA-
MENTAL lead work has in many cases enabled the architect to add a finishing touch to his work that will give a client special pleasure or make a speculative house more saleable. Every home owner likes to have something distinctive about his own home to set it apart from the usual run-of-the-mill construction. Frequently this requirement taxes the architect's ingenuity, particularly in the frequent instances wherein the many demands of the client with a

limited budget leave the architect little leeway. At slight extra cost, however, small porch or bay window roofs of lead with decorative friezes, ornamental lead leader-heads or gutters, or other lead features can be made to set a house off from its neighbors and add a charm not otherwise obtainable.

Illustrative of the adaptability of lead for such ornamental work are the two Long Island homes shown in the accompanying photographs. The first of these, located in Great Neck, em-

bodies a lead roof over both the front entryway and the bay window on the side of the house. Augmenting the charm rendered by these features is a lead frieze, running around the bottom of each roof, which has been beaten by hand in an attractive flowered motif. Both fascias and roofs are made from 4 lb. soft lead, the roofs being installed by the standing seam method to provide for expansion and contraction.

The second of these homes, in Hemp-



General view of the Hempstead and Great Neck homes showing how attractively the ornamental lead work harmonizes with the type of construction

stead, displays quite unusual treatment, the face and both cheeks of the second-story dormer window being covered with 4 lb. hand-wrought lead. Also, since the window is of lead comes, the lead covering with its simple and yet very pleasing design is appropriate.

Supplementing this lead work is a gutter and leader faced with lead, hand beaten to a decorative design.

Lead is ideally suited for ornamental metal work. Its durability and the charm of its natural color are widely recognized by present-day architects. Lead is easily applied and may be worked into a wide variety of attractive decorative embellishments, which may easily provide the necessary "final touch" for the home. Furthermore, of major interest and importance is the fact that such lead work need not be expensive and can usually be made to fall within the stipulated budget.

Mr. F. C. Irwin, of Rockville Center, L. I., produced the ornamental lead work shown on these two homes. Architects for the house in Great Neck



WURTS BROS.
Detail of decorative hand-wrought gutter and leader on the Hempstead house

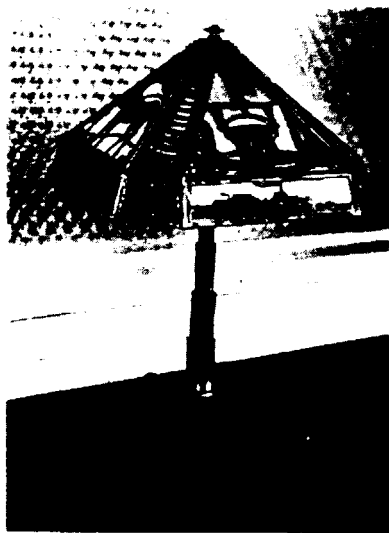
were Aspinwall and Simpson, of that city. Arthur McKenna, Garden City, L. I., was the architect for the house in Hempstead.

Small Applications of Lead: A Desk Lamp

THIS month's contribution to "Small Applications of Lead", an ornamental desk lamp, shows a very unusual and artfully created application of lead work. Sheet lead forms the base of the lamp and lead pipe of interlocking sizes makes up the standard. The shade is of hand carved sheet lead on opaque glass, the cleverly delineated designs depicting various operations in producing and fabricating lead. The face shown in the photograph represents, on the top, the pouring of lead, while a lead smelter and refinery are shown in the bottom rectangle. One of the other faces has a skillfully carved design depicting lead-burning of a large chemical tank lining.

This unique lamp further demonstrates the adaptability of lead which has made this metal highly valued for ornamental work for many hundreds of years. This adaptability, due to the ease with which lead is worked, is augmented by its pleasing gray patina. Many age-old examples of the art of ornamental lead-working are to be

found today, both in this country and abroad, where this craft has for years been highly skilled and the results highly admired. It is interesting to note the increased attention and appreciation now accorded this work in America.



A. W. W. A. Action on L. I. A. Standard

THE final report on "Tentative Standard Specifications for Laying Cast-Iron Pipe" made by subcommittee 7-D of the American Water Works Association's Committee on Water Works Practice specifies that calking lead shall be of a quality corresponding to the Lead Industries Association Standard for this material. The section relating to calking lead quality follows:

"Lead for calking purposes shall contain not less than 99.73 per cent pure lead. Impurities shall not exceed the following limits:

	Per cent
Arsenic, Antimony and Tin together	0.015
Copper	0.03
Zinc	0.002
Iron	0.002
Bismuth	0.25
Silver	0.02

"The producer's name or identification mark shall be clearly cast or stamped upon each piece of lead."

This report was accepted "in principle" by the Board of Directors of the Water Works Association on January 19, 1938, and printed in the February issue of the Journal of that Association. Final consideration will be given at the Board meeting in New Orleans at the time of the Annual Convention in April.

Adoption and use of this specification will assure water works engineers of getting calking lead of proper quality for making satisfactory joints in cast-iron pipe. There is the further advantage that lead meeting the specification may bear the "Lead Industries' Seal of Approval" and by simply specifying that calking lead shall bear this Seal, engineers will be assured of lead meeting the Water Works Association's specification, thus providing an easy means of identification. Just how this works to help water works engineers may be seen from the article on page 8 of this issue of LEAD.

SPECIFY **SEAL OF LEAD INDUSTRIES' MATERIAL APPROVAL**

Seal of Approval Calking Lead for Atlantic City Main

ENGINEERS for the new Atlantic City cast iron water main have placed reliance on the dependability of lead by specifying this material for joints. Moreover, they have also specified that the calking lead shall bear the "Lead Industries' Seal of Approval". By so doing, they have made certain that the lead will meet the rigid standards of the Lead Industries Association, as outlined in the article on page 7.

Installation of the new line, consisting of 18,300 ft. of 48 in. cast-iron pipe, was begun as a W.P.A. project early in 1937 and, when completed, will connect the outlying Absecon Pumping Station with Atlantic City proper. A major part of the installation work has been done by hand and has been complicated by the fact that the piping must pass through salt marsh terrain.

In the procedure, the pipe sections,



Old and new Atlantic City pipe lines. That on the left was laid in 1914, that on the right in 1937

weighing between four and five tons apiece, were rolled by large gangs of men onto wooden skids leading to concrete cradles. These cradles, two to each pipe length, were cast, each one over a pair of wooden piles driven to grade, and were fitted with pliable

shims for cushioning the pipe.

The next operation was to lift the sections from the skids with the portable derrick, socket the joints, and lower the length onto the cradles. Joints were then poured with lead and calked by hand.

The choice of lead for calking on this job was an especially wise one. Lead joints are flexible, which in this case is very essential since the pipe is exposed to the sun and is, therefore, subject to elongation and contraction.

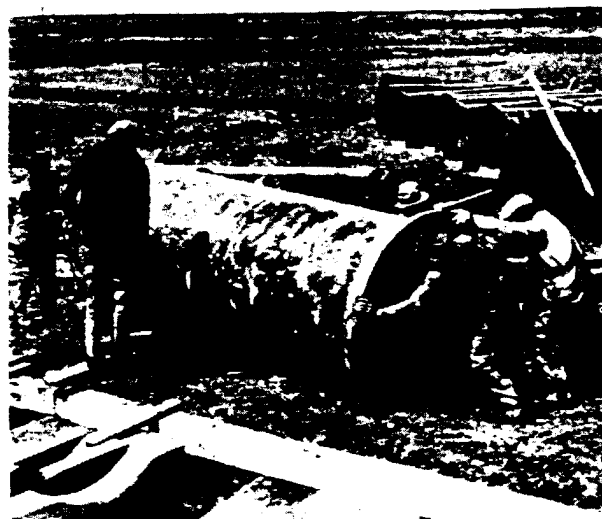
Furthermore, they are virtually unaffected by the corrosive action of salt-water soil; both are characteristics which mean longer life and less maintenance cost for the water line.

Design and specifications of this line were made by the office of Clyde Potts, consulting engineer, of New York City. Mr. Lincoln Van Gilder is water superintendent of Atlantic City.

SEAL OF
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APPROVAL
SPECIFY MATERIAL



Setting the pipe on the cradles, using the portable derrick



Rolling a large section by hand onto skids leading to the cradles

PHOTOS COURTESY U. S. PIPE AND FOUNDRY CO.

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