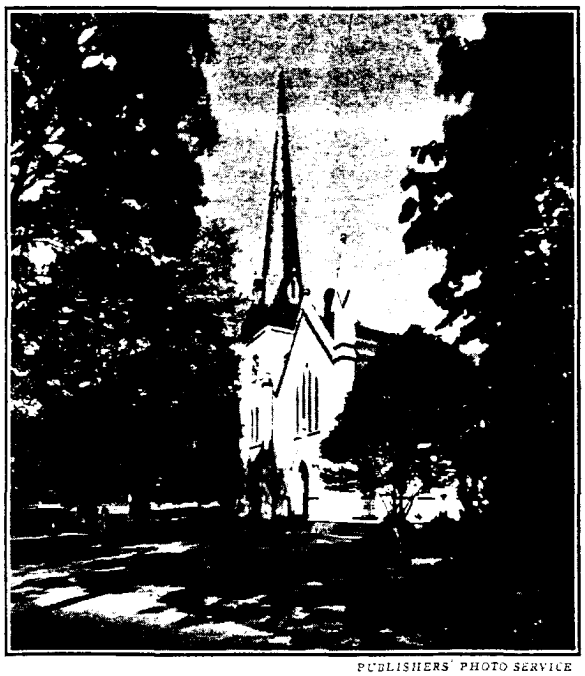
White Lead for Many Purposes Gives Lasting Service

Inside and Out, on Wood and Metal, White Lead Paint Performs Remarkably

ELEVEN years ago, in the middle of a cold winter, the exterior of the Methodist Episcopal Church of Greenwich, Conn., was painted with pure white lead paint and has not been repainted since. It is a wood building erected in 1868 and dedicated the following year. That it has not been painted in eleven years, despite the extremely adverse conditions when last painted, is a strong testimonial to the quality of both workmanship and materials. So far as can be determined, this building has always been painted with white lead, which probably partly accounts for the excellent performance of the last job, for the old white lead already on the wood offered a firm foundation for the new paint.

Another Greenwich building wherein pure white lead paint has given an excellent account of itself, but for an entirely different purpose, is the Havemeyer School. Seventeen years ago the entire interior was painted with pure white lead, mostly flat finish. It was not repainted until two years ago. This demonstrates the economy of using the best paint for interiors, for white lead can be repeatedly washed and its good appearance maintained for years, whereas cheap flat paint washes off and can not be washed clean, for dirt imbeds in its surface and the paint becomes streaky. The fifteen years of service of this white lead interior is more remarkable when it is considered that it is in a school, where wear and tear on painted walls is generally great.



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Methodist Episcopal Church, Greenwich, Conn., last painted eleven years ago with pure white lead paint.

In Stamford, Conn., just a few miles from Greenwich, a new post office was erected in 1915. It is a brick building with a wooden cornice which is decorated with bright colors and gilt on a background of light colored paint. Pure white lead paint was used for this work, also, when the building was built. A visual inspection made in August, 1934, nineteen years after painting, showed the paint was in such good shape as to give the impression of comparatively recent repainting, yet no repainting has been done since the original paint was applied.

COURTESY GREENWICH PRESS

Havemeyer School, Greenwich, Conn., in which flat white lead paint did not require repainting for fifteen years.

White lead was put to still another use on the Greenwich Trust Co. building, where it has again proven both its versatility and durability. Metal sash was the only exterior work requiring paint. It was painted with pure white lead for all coats in 1926 and has not been repainted in the eight ensuing years. Wood sash and trim in the Greenwich Y.M.C.A. was also painted with pure white lead, in 1929, and is not yet in need of repainting.

Examples of the excellent serviceability of pure white lead paint might be continued almost indefinitely, but those cited demonstrate the variety of application to which white lead can be put and the great durability of this premier paint pigment no matter what the use. Climate in Connecticut is far from easy on paint, for temperature variations are wide, winters severe. Near the sea, salt air adds to the hardship of paint.

All of the work described here was performed by the Newton Decorative Co., of Greenwich, Conn., a

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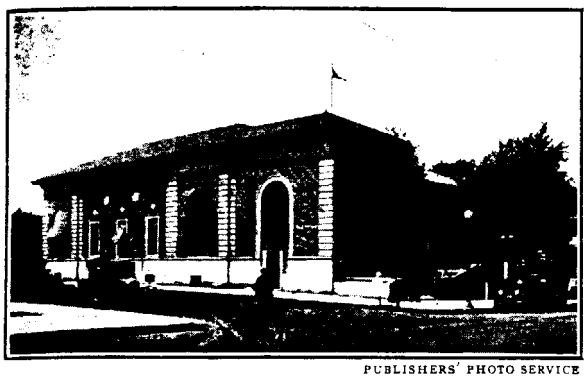

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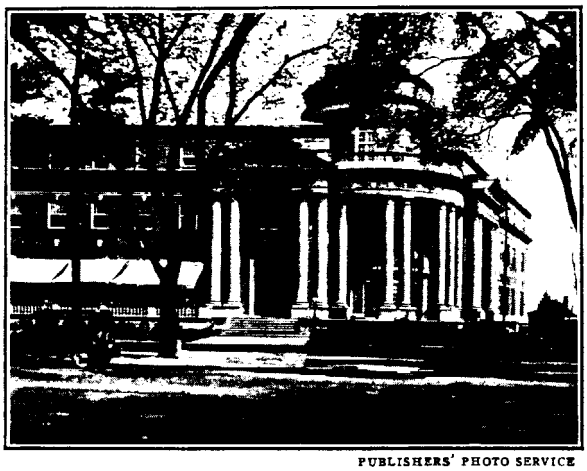
Stamford, Conn., Post Office. White lead has endured on the wood cornice without repainting for nineteen years.

firm which has long relied upon pure white lead paint for the bulk of its painting and decorating. The Company is now being operated by its second and third generation of Newtons and has always been known for the high quality of its work. It seems to go almost without saying that those painters and decorators who are able to continue in business year after year are those who adhere to the old sound policy of giving only good workmanship and good materials for their customers' money.



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The wood trim of the Greenwich, Conn., Y.M.C.A., shown here, was last painted in 1929 with pure white lead.

Have You Any Back Issues of LEAD?

THE Library of Congress, Washington, lacks the following issues of LEAD, which are now out of print. Have any of our readers any of these issues which they would care to send to us so that we can supply the Library's needs?

Volume 1, Numbers 1, 3 and 5.
Volume 3, Numbers 2, 4, 5 and 6.

White Lead in Window Sash Joints Best Prevents Decay

A STUDY of the prevention of decay favoring conditions in wood sash, conducted by Mr. Albert Hermann, Research Engineer of the Western Pine Association, Portland, Oregon, has revealed that moisture absorption through joints is the principal cause of trouble, and that heavy white lead paint applied to the joints is the most effective of the methods tested for preventing this undesirable absorption.

The method of testing was to construct sash corners all uniformly painted so that differences in moisture absorption would be indicative of moisture absorption differences through the joint only. These sash corners, after various treatments as indicated in the accompanying table, were stood upright in 3/16 in. of water. A saw kerf 1/32 in. deep was cut into the bottom of each joint to break the paint covering at this point. These kerfs provided the only access of moisture to the joints when immersed in the water.

Results are tabulated to show the number of days required for the test specimens to pick up 10 per cent in moisture content, the initial moisture content of all specimens being approximately 12 per cent and the final value 22 per cent.

Treatment	*Time Required to Increase Moisture Content 10 Per Cent*
No treatment	½ day
Dipped 10 sec. in water repellant A before assembly	30 days
Dipped 10 sec. in water repellant B before assembly	47 days
Dipped 10 sec. in water repellant A after assembly	9½ days
Dipped 10 sec. in linseed oil after assembly	16 days
Joint surfaces brushed with aluminum paint before assembly	17 days
Joint surfaces brushed with heavy white lead and linseed oil paint before assembly	**69 days**
Dipped 10 sec. in water repellant B after assembly	18 days
Dipped 20 sec. in water repellant B after assembly	21½ days
Dipped 30 sec. in water repellant B after assembly	20½ days
Dipped 40 sec. in water repellant B after assembly	12 days

These results indicate the marked superiority of white lead for the purpose. The white lead paint used was a pure white lead paste thinned with raw linseed oil to a consistency of rich cream. A small amount of Japan drier was added. All joint surfaces were heavily coated, and the joints assembled at once so that excess lead was squeezed out but all voids in the joints filled.

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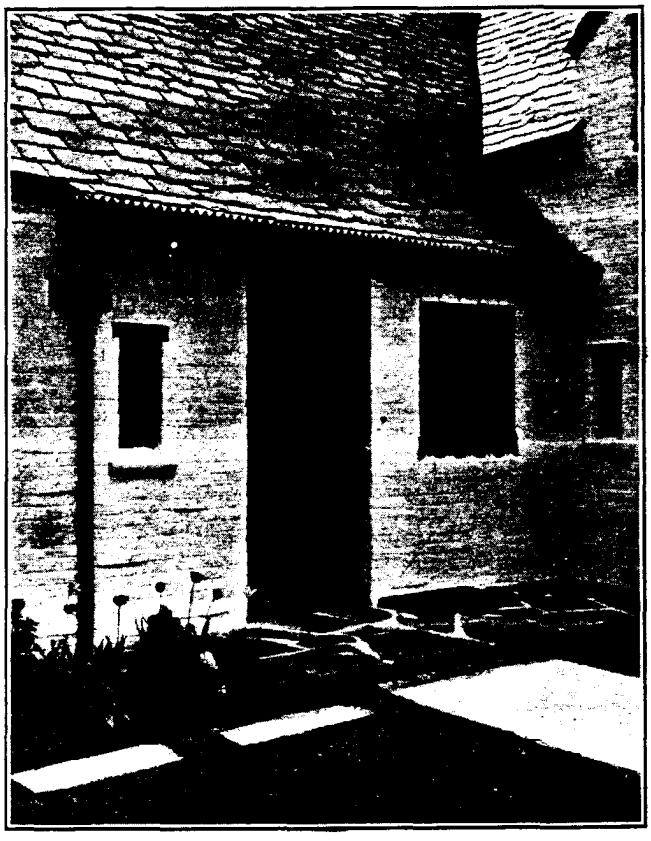
Ornamental Lead Work on

HERE is ornamental lead work on a most attractive residence of modest size and cost. Many people, including architects, are of the opinion that only the most expensive class of buildings warrant the expense of lead. Yet ornamental lead gutters, leader-heads, downspouts, friezes and flower boxes, all hand wrought, adorn this charming small home which cost only $12,000 to build. The slate roof, sheet metal work and ornamental lead work together

An architectural gem, costing only $12,000, on which hand wrought lead work is lavishly used for decoration.



Hand wrought lead gutter, leader head, downspout and window flashing.

Beautifully hand ornamen this charming, moderate

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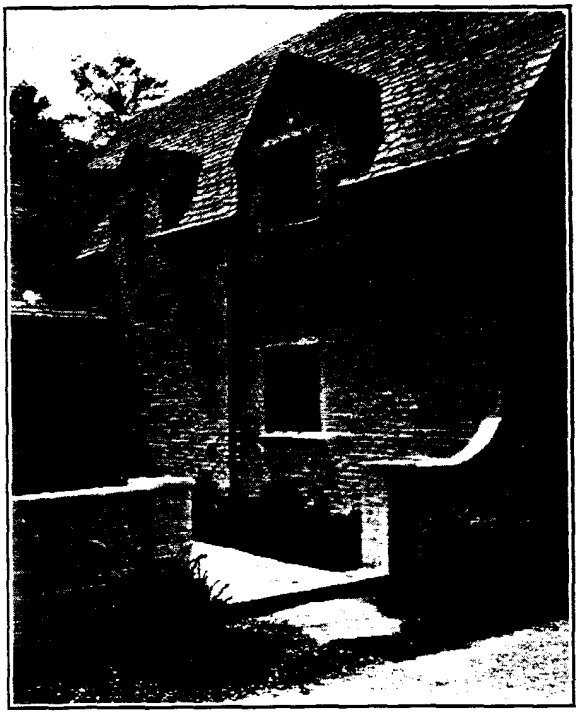
ouse of Modest Size and Cost

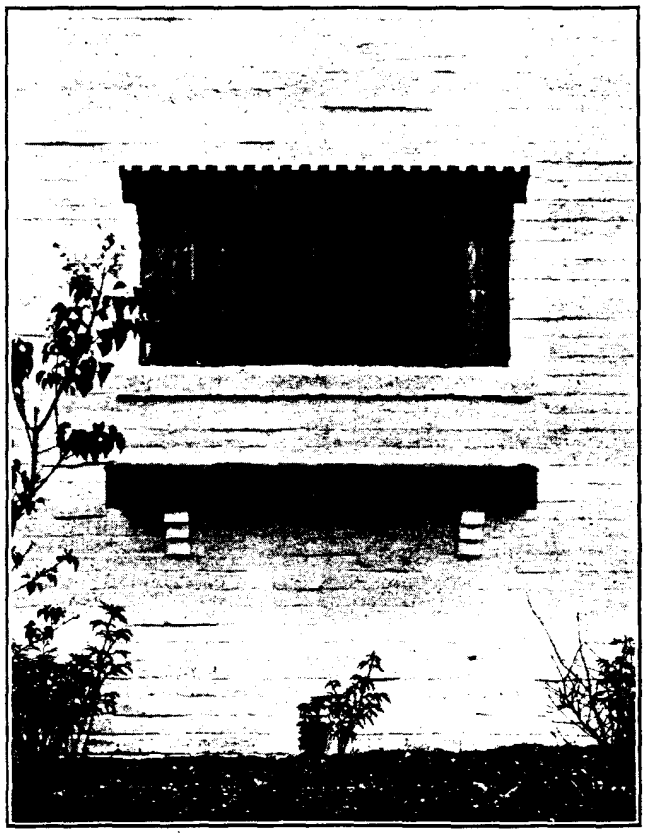
totaled only about $800. Certainly this indicates that the beauty and distinctiveness of ornamental lead is within the reach of almost everyone.

The house pictured here is the Ennis Jones residence at Glen Head, Long Island. It was designed by Frederick Soldwedel, New York architect, who also designed the exquisite lead work, and the lead work was executed by F. C. Irwin of Rockville Center, N. Y.



Hand wrought ornamental lead gutters, downspout and window flashing add to the attractiveness of this lovely home.

frieze over a bay window on ence in a New York suburb.



Hand wrought ornamental lead flower box and window flashing.

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Lead Prevents Cracking of Stone on Large Court House

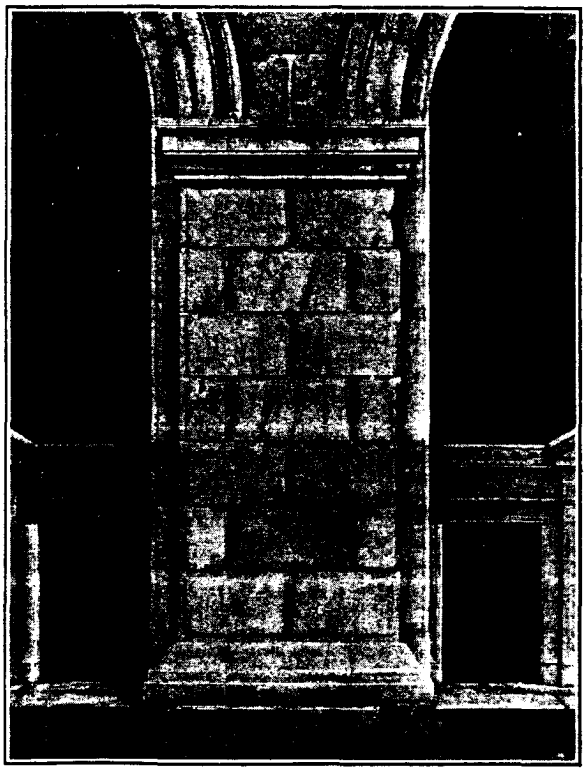
JUST before completion of the enclosing walls of the magnificent new Milwaukee County Court House in the late fall of 1931, numerous cracks and some spalling developed in the facing blocks of the building. This was believed to be caused by uneven expansion and contraction of the structural steel and stone due to great temperature changes before the building was glazed, throwing excessive loads on the facing blocks. This often occurs where special provision has not been made for such a contingency.

This situation seems to have been satisfactorily remedied by the insertion of Cowing Pressure Relieving Joints (LEAD, March, 1932), which are corrugated lead sheets wrapped in sheet lead envelopes. These joints, due to the softness and flexibility of lead, take up the movement in the stone façades and thus relieve or equalize the excessive pressures and prevent cracking and spalling. The joints were installed late in 1931 and no cracks have since been reported.

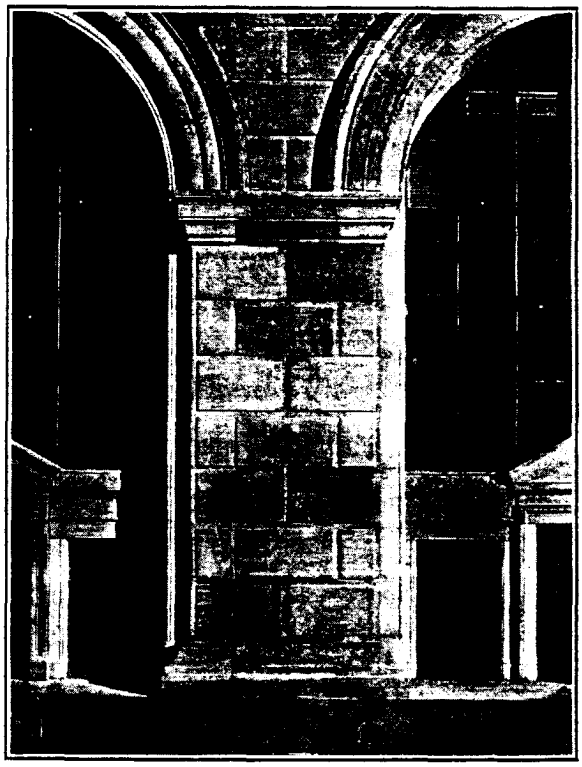
One of the accompanying photographs shows a pier before installation of the lead pressure relieving joints. Cracks are visible in the pier and spalling at the lower part of the arch. Another photograph shows the same pier after the lead was installed and the damaged blocks replaced. Pressure relieving joints were placed at the first floor level and just below the molded course at the spring line of the arch. These were the full depth of the facing stone at the joint. In addition, similar lead joints 2 in. deep were placed in the joints of the archways which had spalled.

MILWAUKEE JOURNAL

Replacing cracked facing blocks, Milwaukee County Court House, Milwaukee, Wis.



Pier at Column 95, Milwaukee County Court House, before installing lead joints, showing cracks and spalling of stone.



The same pier at Column 95, after installation of lead pressure-relieving joints and replacement of cracked stone.

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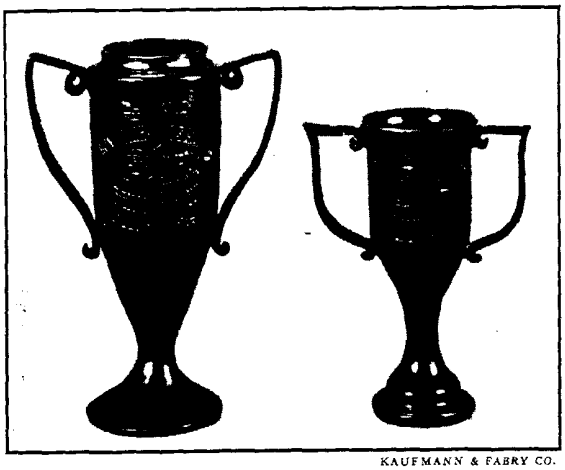
The stone was replaced and joints installed by S. M. Siesel Co. of Milwaukee, general contractors for the building. This method of equalizing the pressure was recommended by Albert R. Ross, of Milwaukee, architect for the Court House, and H. G. Balcom, structural engineer, of New York. Most of the more prominent, recently constructed steel and stone buildings throughout the country are equipped with this type of joint.

Vie for Lead Loving Cups in Joint Wiping Contest



KAUFMANN & FABRY CO.

Hand wrought lead loving cups given as prizes in the joint wiping contest which aroused intense interest at the July outing of the Chicago Plumbing Contractors Association.

Lead Covered Cable Silences Manhole Covers

WATER Works Engineering for July 25, 1934, reports that at Monticello, Fla., six feet of two conductor No. 14 lead covered parallel electric wire is used to form a gasket for eliminating noise made by manhole covers. A regular splice is made where the ends of the gasket meet. Since the wire is lead covered and rubber insulated under the lead, the two materials serve as a cushion. It is stated that the material has not shown any appreciable wear, and that the covers do not move under traffic.

Another method of using lead to quiet manhole covers, as employed in Reading, Pa., was reported in LEAD, March, 1934.

New Phillipsburg, N. J., Plumbing Code Requires Lead

A NEW plumbing code, which requires lead waste pipe under bathroom floors, lead bends and lead shower pans, and provides for strict licensing of master and journeyman plumbers after passing theoretical and practical examinations, was adopted by Phillipsburg, N. J., in March, 1934, and has since operated to the great satisfaction of all concerned. This is in line with action of both master and journeyman state plumbers associations in New Jersey last year, which passed resolutions urging their members to work for a greater use of lead in plumbing systems for the mutual protection of the public and of skilled, competent plumbers. It is also in accordance with the entreaties of President John J. Calnan of the National Association of Master Plumbers, advising plumbers everywhere to see that the plumbing ordinances in their localities are brought up to date to give the public adequate health protection.

Several sections of the new Phillipsburg code relating to lead are quoted here:

"All waste pipes under bathroom floors must be of lead and all joints on lead pipe shall be wiped joints."

"All water closets having traps above the floor line shall be connected to the soil pipe by means of a lead bend or 6" of straight lead. No iron closet bends shall be used."

"All shower stalls, not having shower receptors, must have a sheet lead pan, under the entire floor of the shower stall, pan to be made of 6 lb. sheet lead." This section also provides for coating the lead pan inside and out with asphaltum, and requires a minimum pan depth of 6 in.

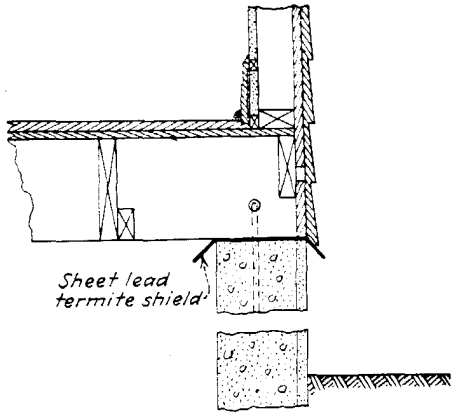
Referring to examinations for licenses the code reads in part, "..... the applicant shall appear before said examining board and give satisfactory proof in theory and practice of his ability as a master plumber."

Richard W. Case, plumbing inspector, Harry Transue, representing the master plumbers, and Clearmont Wildrick, representing the journeymen, composed the committee which drafted and presented the new Phillipsburg code. This new ordinance should provide residents of Phillipsburg with the most sanitary and permanently economical plumbing. At the same time, it will largely eliminate handymen and other incompetent persons from doing plumbing work in that city, and will therefore aid the plumbing business and raise the standards of workmanship in it.

LIA25294

Sheet Lead Shields Prevent Damage by Termites

PREVENTION of damage by termites has become a live topic recently, not that the problem is new but due to the publicity it has received. Perhaps the most effective method of termite protection and one highly recommended by the Bureau of Entomology, U. S. Department of Agriculture, is a non-corrosive metal shield capping the foundation walls below all wood-work and extending outward and downward slightly from the wall. Since the metal of which this shield is composed should be durable enough so that it need not be replaced during the life of the building, and since it must fit snugly against the foundations to eliminate voids which might be used as passages by ruinous termites, sheet lead is the most suitable metal for the purpose. It is the most durable common metal and, being soft and pliable, may be dressed down to fit the surface it covers snugly and evenly.



Detail of lead termite shield for simple frame construction.

As an aid to architects the following general specification is suggested for metal termite shields:

SPECIFICATION TO PREVENT TERMITE DAMAGE

A metal termite shield made of 6 lb.* sheet lead shall be provided, continuing completely around the top of the masonry foundation, including all pillars, supports and piping. Where doors, windows or other openings occur, the lead shall be so laid that it forms a continuous membrane completely separating all plates, sills or other timbers from the masonry foundations. The lead shall be 4 in. wider than the wall and shall project outward and downward from the wall at a 45 deg. angle 2 in. on each side. It shall be lapped 3 in. at joints. Foundation walls that are so covered shall be leveled up to a true and smooth surface and the lead shall be set in asphalt-base mastic cement bonding the lead to the wall, so that no cracks or voids shall exist between the two.

*4 lb. sheet lead may be substituted on small houses.

Lead Hot Water Pipe Perfect After Fifty Years Use

IN 1884, lead pipe was installed on the cold water supply of the Farrell house on North Craig St. in Pittsburgh. Just 50 years later a section was removed and was found to be in perfect condition. The lead hot water supply, installed at the same time, is still in service and giving no trouble. This incident is reported by Weldon & Kelly Co., Pittsburgh plumbing contractors.

It is cited here not as an exceptional occurrence, for almost every plumber has come across lead supplies 50 and more years old, but as a typical example of how lead will perform as water supply pipe when properly installed. Obviously in this case as in so many others lead pipe proved a real economy, for it served 50 years, still going strong without repair. The pipe still maintains its original internal diameter so that today it delivers unimpeded the same volume of water it did in 1884, and the water has never become discolored from the pipe material.

To get service like this from lead pipe all that is necessary is to install it properly with the skill and care of the experienced plumber. Every material must be used correctly in order to get the best out of it. With lead water pipes it is simply required to support them sufficiently (throughout the entire length on horizontal runs and every 2½ ft. to 3 ft. on vertical lines) and to protect them against mechanical damage, particularly during construction. Then if wiped joints be properly made by a skilled plumber, the pipe is in to stay almost indefinitely.

Wiped joints are the most positive type of joint because they can not vibrate or shake loose, being one continuous piece of pipe. They also offer practically no resistance to the flow of water. The flow of water through a wiped joint is truly stream lined and has been for centuries.

THE LEAD INDUSTRIES ASSOCIATION INVITES INQUIRIES ON ANY SUBJECT RELATING TO LEAD AND WILL BE GLAD TO COOPERATE WITHOUT OBLIGATION IN THE SOLUTION OF YOUR LEAD PROBLEMS

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